Master's thesis

NTNU
Norwegian University of Science and Technology
Faculty of Medicine and Health Sciences
Department of Clinical and Molecular Medicine

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Broad-Spectrum Antiviral monotherapies: *in silico* drug repositioning against emergent viruses

Database expansion and generation of BSA-scoring system

Master's thesis in Molecular Medicine
Supervisor: Denis Kainov
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NTNU
Kunnskap for en bedre verden

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Publications

The work that has been conducted in this thesis resulted in being part of the following scientific publications:

- Aleksandr Ianevski, Ronja M. Simonsen, Vegard Myhre, Tanel Tenson, Valentyn Oksenych, Magnar Bjørås, Denis E. Kainov, DrugVirus.info 2.0: an integrative data portal for broad-spectrum antivirals (BSA) and BSA-containing drug combinations (BCCs). Nucleic Acid Research, 2022. https://doi.org/10.1093/nar/gkac348, Accepted.
- Aleksandr Ianevski, Rouan Yao, Ronja M. Simonsen, Vegard Myhre, Erlend Ravlo, Gerda D. Kaynova, Eva Zusinaite, Judith M. White, Stephen J. Polyak, Valentyn Oksenych, Marc P. Windisch, Qiuwei Pan, Eglė Lastauskienė, Astra Vitkauskienė, Algimantas Matukevičius, Tanel Tenson, Magnar Bjørås, Denis E. Kainov, Mono- and combinational drug therapies for global viral pandemic preparedness. iScience, Volume 25, Issue 4, 2022, 104112, ISSN 2589-0042, https://doi.org/10.1016/j.isci.2022.104112.

Abstract

Animal viruses, such as SARS-CoV-2, have demonstrated the current reality of global viral threats. SARS-CoV-2 crossed species barriers and caused an unpredictable pandemic within the human population. Antivirals are medications with activity against a specific virus. Several antivirals have demonstrated a profound activity, supporting the importance of further antiviral elaboration in viral disease management. Currently, the emphasis is on broad-spectrum antivirals (BSAs), compounds with activity against a broad range of viruses and their drug-resistant strains and variants. The favorable method of BSA development is drug repositioning. Drug repositioning displays a rapid, cost-efficient, and reduced-risk approach in the search for new indications of already available medications. The most critical phase of drug repositioning is *in silico* discovery of a new indication of BSAs. To perform *such* discoveries, researchers need a database summarizing BSA activities. BSA databases could help identify the most promising few of thousands of potential BSAs to prioritize their development during the critical period between the identification of a new virus and the development of virus-specific vaccines, drugs, and therapeutic antibodies.

My aim was to assemble a resource for the exploration and analysis of BSAs and to develop a new method to identify the most promising BSAs for viral pandemic preparedness.

Here, I describe the integrative and interactive DrugVirus.info 2.0 portal that allows exploration and analysis of BSAs. I further describe a new method of selecting the most promising BSAs among 255 drugs present in the DrugVirus.info database based on BSA-target relevance, routes of administration, phylogeny- and structure-activity relationship, and immunomodulatory properties analyses. Thus, my study promoted the discovery and development of promising broadly-effective antiviral therapies.

Sammendrag

Utbruddet av SARS-CoV-2 har demonstrert realiteten av globale virale trusler. SARS-CoV-2 krysset arts barrierer og forårsaket en pandemi som verden ikke var forberedt på. Antiviraler er medikamenter som hemmer formeringen av ett spesifikt virus. Flere slike antiviraler har bevist utslagsgivende effekt mot virus. Dette illustrerer viktigheten av forskning på antivirale medikamenter, som i fremtiden vil være viktige forkjempere i kampen mot virus-relaterte sykdommer. Det nåværende fokuset er på utviklingen av bredt-spektret antivirale legemidler (BSA), som er medikamenter med effekt mot et bredt spekter av virus og deres medikamentresistente varianter. Den mest utbredte metoden for utvikling av BSA er reposisjonering av medikamenter. Denne metoden utgjør en rask og kostnadseffektiv tilnærming med redusert risiko i søken etter nye indikasjoner av eksisterende medikamenter. *In silico* oppdagelse av disse nye indikasjonene er den første og viktigeste fasen innen reposisjonering av medikamenter. For å kunne avdekke nye indikasjoner er man avhengig av databaser som integrerer mulige BSA aktiviteter. Slike databaser vil være verdifulle i identifiseringen av de mest lovende BSAene fra en samling av flere tusen mulige BSAer. Disse forberedelsene vil gjøre det mulig å prioritere utviklingen av lovende BSAer i den kritiske perioden mellom identifikasjon av et nytt virus og fremstillingen av virus-spesifikke vaksiner, medisiner og terapeutiske antistoffer.

Formålet med masteroppgaven var å utarbeide en ressurs som samler og analyserer BSAer, samt å etablere metoder for å identifisere de mest lovende BSAene som forberedelser mot fremtidige globale virale trusler.

I denne masteroppgaven beskriver jeg den integrerende og interaktive DrugVirus.info 2.0 databasen som muliggjør analyse og visualisering av BSA aktivitet. Videre beskriver jeg en ny metode for å selektere de mest lovende BSAene innad i DrugVirus.info databasen. Denne metoden er basert på evaluering av BSA komponenter som påvirker antiviral aktivitet; BSAenes målgrupper av gener og proteiner, administrasjonsveier, fylogeni- og struktur-aktivitetsforhold, og immunomodulatoriske egenskaper. På denne måten bidro studiet mitt til oppdagelse av potensielle bredt-spektrede antivirale medikamenter.

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Abbreviations

AIDS	Acquired immune deficiency syndrome
AP-1	Activator protein 1
BC	Baltimore Classification
BCC	BSA-containing drug combination
BSA	Broad-Spectrum antiviral
DAMPs	Damage associated molecular patterns
DC	Dendritic cells
DSS	Drug sensitivity score
CC_{50}	Half maximal cytotoxic concentration
CFR	Case fatality rate
DAMP	Damage associated molecular pattern
DdDp	DNA-dependent DNA polymerase
DDS	Drug developmental status
DGIdb	Drug Gene Interaction database
dsDNA	Double stranded deoxyribonucleic acid
EC_{50}	Half maximal effective concentration
ESC	Embryonic stem cell
FDA	U.S Food and Drug Administration
GWAS	Genome-wide association study
HAART	Highly Active Antiretroviral therapy
IP	Immunomodulatory properties
IC_{50}	Half maximal inhibitory concentration
ICTV	International Committee on Taxonomy of Viruses
IFN	Interferon
IL	Interleukin
iPSC	Induced pluripotent stem cell
MAPK	Mitogen-activated protein kinase
MDA5	Melanoma differentiation-associated protein 5
MF	Macrophage
NF-kB	Nuclear factor kappa-light-chain enhancer of activated B cells
NK	Neutral killer
NTRI	Nucleoside reverse transcriptase inhibitor
PAMP	Pathogen-associated molecular pattern
Phyl	Phylogeny
PRRs	Pattern recognition receptors
PSC	Pluripotent stem cells
RdRp	RNA-dependent RNA polymerase
RIG-I	Retinoic acid inducible gene I
RLR	RIG-I like receptor
RoA	Route of Administration
RT	Reverse transcriptase
SAR	Structure-activity relationship
SI	Selectivity index
TGFβ	Transforming growth factor beta
T_h	T-helper cells
TLR	Toll-like receptor
TNF	Tumor necrosis factor
TR	Target relevance
TTD	Therapeutic Target database
T_h	T-helper cells
Voi	Virus of interest

1 Introduction

1.1 The scope of past and presently virology

1.1.1 Emerging viral strains

Humans had faced viruses long before our kind evolved into its modern form. For certain viral diseases, antiviral drugs and vaccines have assisted in reducing viral pathogenesis and spread, and even contributed to the total eradication of viral pathogens. The development of Highly Active Antiretroviral Therapy (HAART) in managing Acquired immune deficiency syndrome (AIDS) has made it possible for infected individuals to live with the causative virus, human immunodeficiency virus (HIV) (1). Further, the development of the Smallpox vaccine resulted in entire eradication of the variola virus (2).

Contempt historical successes, outbreaks of severe viral pandemics during the twenty-first century demonstrate that viral diseases still are a significant health burden worldwide. Viruses have the potential to spread to a specific geographic area or globally, causing epidemics and pandemics, respectively (3, 4). Emerging viruses include recently discovered viruses with increased incidence or potential to increase in incidence (3). Such Emerging viral infections cover both newly emerging and re-emerging viral diseases (4).

Most of the emerging viruses are zoonotic viruses spilled over from animals to humans, causing disease in the human population (5). Such zoonotic viral diseases, zoonoses, appear when people contact animals carrying the disease. Indeed, zoonoses are at high risk of causing pandemics and endemics, potentially introducing an uncharacterized pathogen into the population (6, 7). Emerging zoonotic viruses such as Influenza A (FLUAV) (8-12), Ebola virus (EBOV), Marburg virus (MARV) (4, 13-15), and Zika virus (ZIKV)(16, 17), comes to the surface from natural reservoirs regularly, representing global threats (4, 18-20). Another example of zoonosis is the recently emerging Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and former endemic causing coronaviruses such as SARS-CoV and Middle east respiratory syndrome coronavirus (MERS-CoV) (4, 21). Further, the vector-borne transmitted Dengue virus (DENV) is known for causing recurrent endemics (16, 22). Also, the ongoing HIV/AIDS pandemic in African regions costs several million lives yearly (Figure 1) (4, 23).

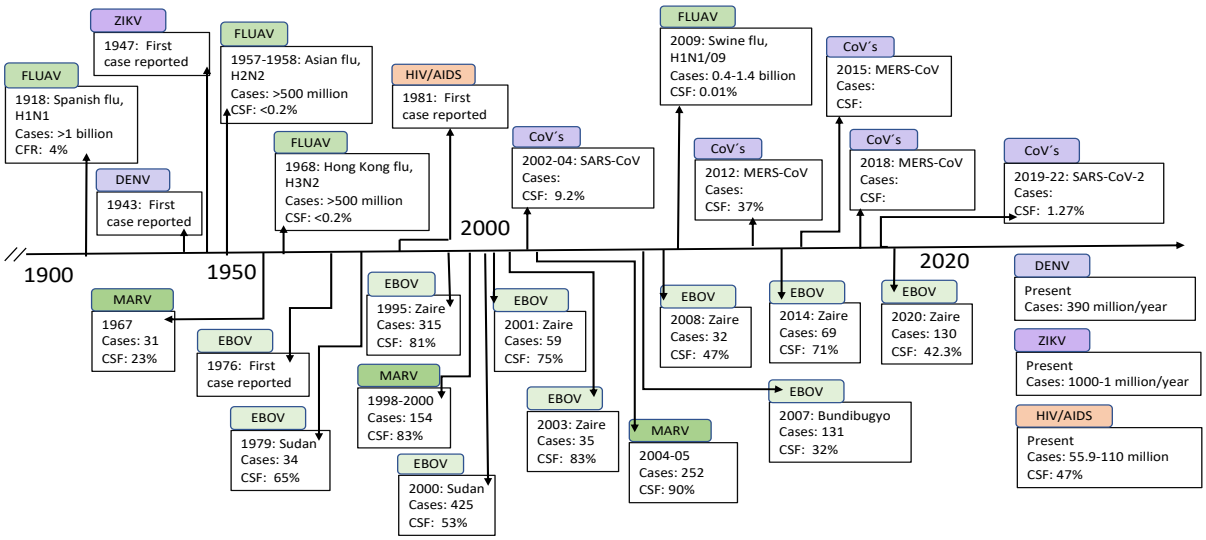

Figure 1: Timeline of past and present emerging viral strains. Presented is the time of outbreak, number of cases, and case fatality rate (CFR), when applicable. *Upper part:* FLUAV pandemics: 1918 Influenza A/Spanish flu (H1N1 subtype); Asian flu (H2N2 subtype); 1968 flu pandemic/Hong Kong flu (H3N2 subtype); and 2009 flu pandemic/Swine flu (H1N1/09 subtype). Current circulating FLUAV strains appear as seasonal epidemics, mainly caused by H2N2 and H1N1/09 subtypes. Emergent coronaviruses (CoVs) include SARS-CoV initially identified in 2002, and MERS-CoV in 2012, both causing endemics. Also designated is the recent pandemic of SARS-CoV-2. Further, the timeline shows the first detection of ZIKV, DENV, and HIV/AIDS, which still have incidences in the human population. *Lower part:* shows MARV and EBOV endemic outbreaks. MARV was first recognized in 1967 and EBOV in 1976, followed by regional epidemics.

1.1.2 Classification of viruses

Once a viral outbreak emerges, a specified classification of the new virus is crucial. Accordingly, new viruses are introduced into the pool of previously announced viruses, generating a framework for connecting viral strains. Therefrom, predications of virus properties can be made, and potential evolutionary relationships can be revealed (24). The international committee on Taxonomy of Viruses (ICTV) provides a universal taxonomic classification and nomenclature of viruses as guidelines for specific naming conventions (25, 26). Such taxonomy allows arrangements of an emerged virus into realm, kingdom, phylum, class, order, family, and genus (26).

Alongside ICTV, Baltimore classification (BC) is a system that organizes viruses based on the structure of the virion nucleic acid and replication of their virus genome (Figure 2) (27). Group I and II comprise deoxyribonucleic acid (DNA) viruses with double-stranded DNA (dsDNA) and single-stranded DNA (ssDNA) genomes, respectively. (27-29). Group III, VI and V cover ribonucleic acid (RNA) viruses. Group III include dsRNA, meanwhile, group IV, and V comprise viruses with positive-sense ssRNA ((+)ssRNA) and negative-sense ssRNA

((-ssRNA) genome, respectively. Furthermore, the last two groups consist of viruses which produces an intermediate in their replication cycle. Group VI include ssRNA viruses with a DNA intermediate (ssRNA-RT) and group VII contains dsDNA viruses with an RNA intermediate (dsDNA-RT) (27, 28).

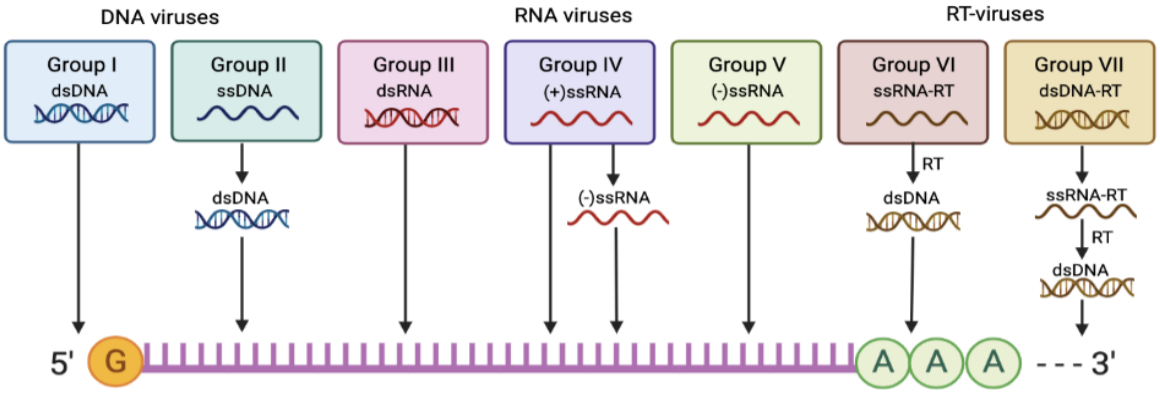

Figure 2: Baltimore classification. The figure illustrates the seven BC groups (I-VII) with its replication strategy. Group I, dsDNA viruses have the same replication strategy as cellular life forms. Meanwhile, group II ssDNA viruses replicate through rolling-circle (circular genome) or rolling harpin (linear genome) mechanisms. The ssDNA genome must be transcribed into dsDNA by DNA-dependent DNA polymerases (DdDp). Group III contains dsRNA viruses, which transcribe the negative strand of dsRNA into mRNA by RNA-dependent RNA polymerase (RdRp). Group IV, (+)ssRNA viruses do not typically need transcription. However, (+)ssRNA viruses will produce positive-sense copies of the intermediate dsRNA genome, using a negative-sense strand as a template. Group V, (-)ssRNA viruses copy their genome directly from their negative-sense strand. Group VI and VII, ssRNA-RT, and dsDNA-RT viruses, use reverse transcription (RT) for replication. ssRNA-RT first transcribes their linear genome into dsDNA through RT. The dsDNA-RT group produces pregenomic RNA from dsDNA, followed by RT, resulting in newly produced dsDNA.

1.1.3 What happens when we get infected: our normal host immune response and inflammatory answer to viral infections

Host responses, such as Immune responses and inflammatory pathways are initiated by pattern recognition receptors (PRRs) which recognize specific components of viruses. This leads to signaling events and subsequently activation of innate immune cells and cytokines. The cytokine milieu generated decides the role of adaptive immune responses. Ideally, such immune responses and inflammatory stages favor viral clearance. However, the host response generated can cause damage to host self-cells. Thus, there is a fine balance of the immune system, where disruptions of this homeostasis can result in viral persistence or host tissue and cell damage (30). The following text explains briefly concepts of viral recognition, initiation of inflammation and adaptive responses to viral infections.

Once a virus enters a host, small molecular motifs such as pathogen- and damage-associated molecular patterns (PAMPs and DAMPs, respectively) are recognized by PRRs (31). The pattern of PRR activation determines the innate immune events, resulting in stereotyped inflammatory answers (31, 32). An example of PRRs includes Toll-like receptors (TLRs), which have vital roles in innate immune responses to viruses (30, 31, 33, 34). TLRs are expressed on a variety of innate immune cells, both on extracellular and endosomal compartments. TLR recognize different types of viruses (30, 35). TLR3 recognizes dsRNA viruses and viruses that generate dsRNA through their life cycle. TLR7 and TLR8 respond to ssRNA. Diversely, TLR9 recognizes dsDNA viruses (30, 35). Furthermore, TLR2 and TLR4 are implied in the detection of viral glycoproteins (30, 33, 35, 36). Cells also constitute cytoplasmic sensors, RIG-I-like receptors (RLRs). RLRs are RNA helicases, located in the interior of cells and recognize RNA viruses. Examples of RNA helicases are retinoic acid-inducible gene I (RIG-I) and melanoma differentiation-associated protein 5 (MDA5). RIG-I recognizes 5-thriphosphorylated ssRNA and short dsRNA. Contrarily, MDA5 recognizes longer dsRNA. (35, 37). Figure 3A illustrates PRR recognition of dsRNA, dsDNA and ssRNA viruses.

PRR signaling encourage the activation of the transcription factors NF-kB and AP-1 which results in the production of pro-inflammatory cytokines, such as interleukin 1α (IL-1α), IL-1β, Tumor-necrosis factor α (TNF-α), and IL-6. These pro-inflammatory cytokines further stimulate the recruitment of immune cells. Furthermore, IRF7 and IRF3 result in type I interferon production, as IFN-α and IFN-β. This Interferon production enhances the induction of interferon-stimulated genes (Figure 3A) (38, 39). All these contributions encourage the activation of inflammatory immune cells and pro-inflammatory cytokines.

Inflammation can cause damage to self-cells when the amount of pro-inflammatory cells and molecules exceeds a certain threshold. This overwhelming cytokine production is termed "cytokine storm" or "cytokine cascade" which occasionally lead to tissue damage (32, 40). Thus, blockade of PRRs might alleviate damaging inflammation associated with viral infections, such as those generated with SARS-CoV-2 (39). However, deficient immune activation and inflammatory responses would favor viral persistence.

Some viruses trigger innate immune cells such as macrophages (MF), DC, and natural killer (NK) cells to produce anti-inflammatory molecules as IL-10 and transforming growth factor-β (TGFβ), which inhibits further inflammatory events. An anti-inflammatory milieu upon viral infection would favors viral pathogenesis (31). Accordingly, the balance of our immune system, including the inflammatory stage, is central to a successful host response to viral infections (Figure 4).

Innate immune responses initiate adaptive immune responses. Viral antigens are taken up by dendritic cells (DC) and presented to naïve $CD4^+$ T cells in draining lymph nodes. Depending on which cytokine milieu present, different T-helper cell (T_h) responses are generated (Figure 3B) (31). This cytokine milieu varies extensively for different viruses, depending on route of infection, viral load, and host cell type infected (41-43). These Th subsets produce diverse cytokines, and have characteristic effects on immunological processes.

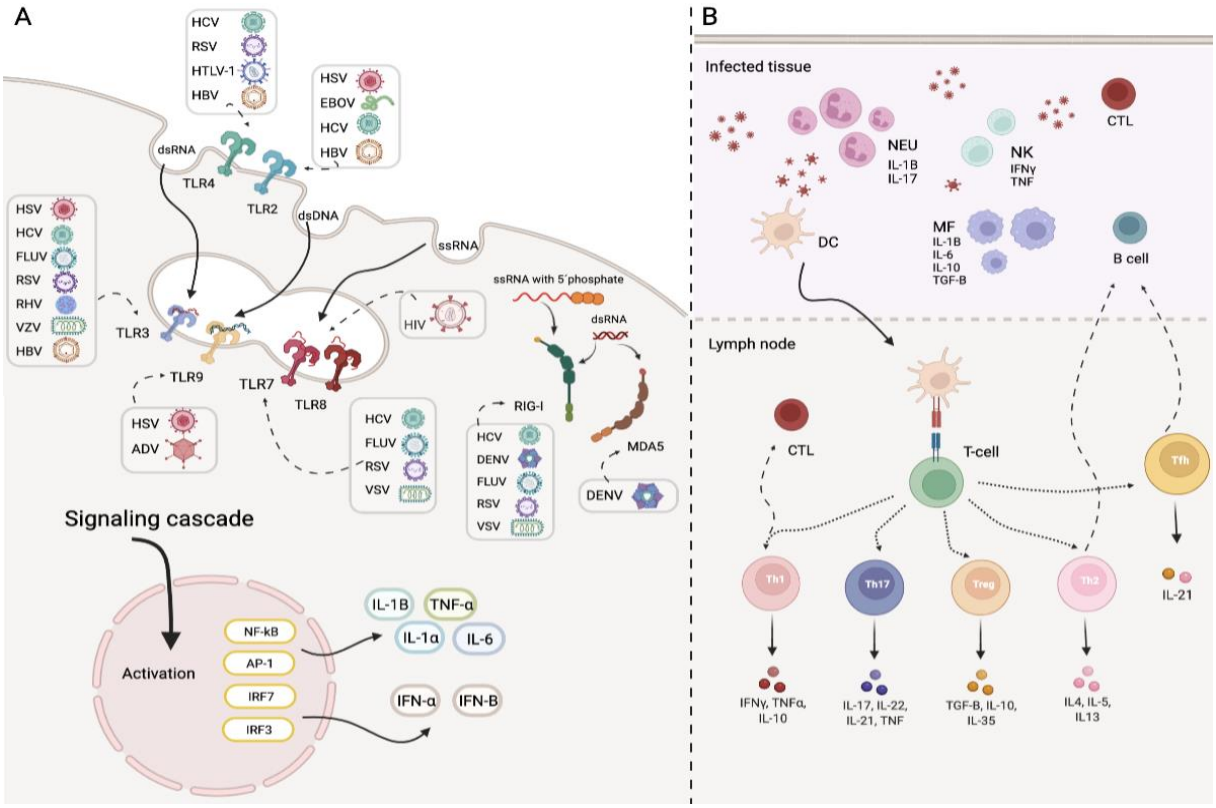

Figure 3: Host responses during viral infection. A. Common signaling receptors for dsRNA dsDNA, and ssRNA. Downstream signaling lead to the activation of the transcription factors IRF3, IRF7, NF-kβ and AP-1. These are involved in the generation of inflammatory processes. Inflammation is crucial immune defense in clearance of viral pathogens. In cases where innate immune responses fail to clear the virus, adaptive immune responses are generated. B. DCs present viral antigen to naïve $CD4^+$ T cells in draining lymph nodes, resulting in activation of different Th cell subsets, including Th1, Th17, Tregs, Th2 and Tfh cells. Th1 responses are most frequently observed against viral pathogens, involving the production of pro-inflammatory cytokines and cell-mediated immunity. Th2 and follicular T helper cells (Tfh) responses are important for activation of B-cell effector function and thus the production of neutralizing antibodies. Treg responses are on the other hand associated decline of inflammation. Th17 responses are important for recruiting neutrophils to the site of infection, but also avoidance of excessive immune responses.

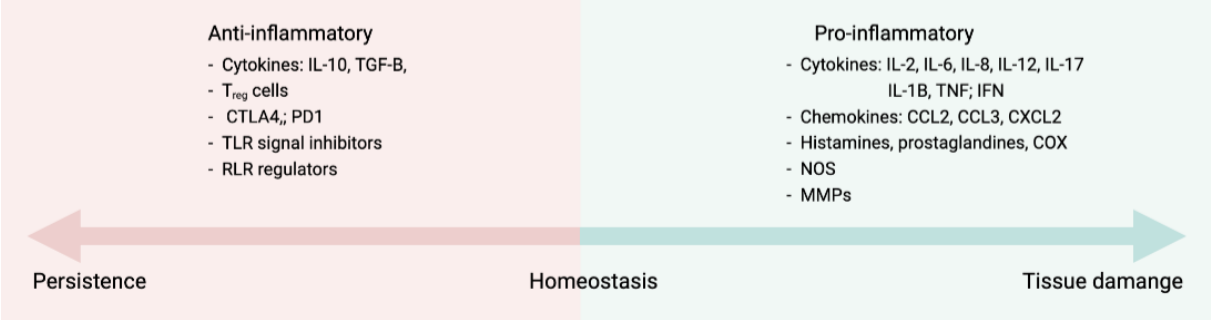

Figure 4: Factors affecting homeostasis of inflammation. Several molecules are associated with anti-inflammatory and pro-inflammatory appearances. Cells producing cytokines such as IL-10 and TGF-β contributes to an anti-inflammatory milieu. Also, T_{regs}, and inhibitory receptors as CTLA4 and PD1 are associated with anti-inflammatory progressions. Cells producing cytokines such as IL-2, IL-6 and TNFs generate a pro-inflammatory milieu. Other components which enhance inflammation are matric metalloproteinases (MMPs), chemical mediators as histamine and cyclooxygenases (COX) and several chemokines. An exaggerated inflammatory process is associated with tissue damage. On the other hand, the risk of viral persistence increases when components of the inflammatory process are inhibited.

1.2 Broad-spectrum Antivirals

Vaccines is a powerful tool for preventing incidences of emergent viruses once it has been described within the society, with potential to achieve widespread immunization in populations (44, 45). However, Vaccine targets remain undefined before an outbreak occurs (7). Therefore, a central challenge arises from vaccination: To predictively develop vaccines against emerging and resistant strains that might arise in the future (46). Another major hurdle is immunocompromised individuals, which will not respond robustly to vaccination (47).

This can be alleviated by using Antiviral drugs, a class of medications that targets specific viruses. Antivirals work by inhibiting the virus from multiplying but do not deactivate or destroy the virus particles (48-50). Antivirals can be divided into antiviral agents and antiviral drugs. Antiviral agents are molecules that have gone through preclinical stages for certain viruses, yet not approved for therapeutical use. On the other hand, antiviral drugs are approved for pharmacological use (46).

Antivirals selectively inhibit unique viral proteins, providing one drug, one bug solution. In contrast, Broad-spectrum antivirals (BSAs) can target multiple viruses and genotypes. Accordingly, BSAs inhibits common viral protein functions or common host factors required by several viruses (49). Nucleoside and nucleotide analogues are an excellent example of medications with antiviral activities, which inhibits replication and transcription of the viral genome (18, 50). They function by replacing viral nucleotides, terminating the synthesis. For example, Ribavirin works by inhibiting viral DNA or RNA synthesis. Ribavirin is approved

in the treatment of Hepatitis C virus (HCV), Respiratory syncytial virus (RSV), and FLUAV, and is implied in the treatment of vesicular stomatitis virus (VSV) (49, 51-54). Vidarabine, another nucleoside analogue, is currently approved to treat dsDNA viruses such as herpes simplex virus (HSV) and varicella-zoster virus (VZV). Other approved antiviral drugs include rimantadine, zanamivir, and oseltamivir for the treatment of influenza viruses (54). Also, contempt inconsistent proposals, FDA recently approved the use of remdesivir in hospitalized COVID-19 patients and in individuals with high-risk of hospitalization (55, 56) (Table 1).

Table 1: Approved BSA drugs in clinical use. FDA Approved antiviral drugs in the treatment of HSV, VZV, HBV, HIV, FLUV, human cytomegalovirus (HCMV), human papillomavirus (HPV) infections and SARS-CoV-2. The table includes antiviral name, brand drug name, approved clinical use, and if the antiviral is viral- or host-directed. The newest approved (remdesivir) and oldest approved (trifluridine) antivirals are shown from the top left panel to the bottom right panel. The information is retrieved from FDA, E.D.Clerq et al., and D.R.Tompa et al. (54, 57). ^ Discontinued monotherapies; * Avigan (Japan), and Zostex against VZV (Europe).

BSA (Brand name)	Clinical use	Target	BSA (Brand name)	Clinical use	Target
Remdesivir (Veklury)	SARS-CoV-2	Viral	Valacyclovir (Valtrex)	HSV; VZV	Viral
Baloxavir marboxil	FLUV	Viral	Stavudine (Zerit)	HIV	Viral
Favipiravir (Avigan)*	FLUAV; FLUBV; FLUCV	Viral	Rimantadine (Flumadine)	FLUAV	Viral
Rilpivirne (Edurant)	HIV-1	Viral	Foscarnet (Foscavir)	HSV; HCMV	Viral
Etravirine (Intelence)	HIV-1	Viral	Didanosine (Videx)	HIV	Vira
Maraviroc (Selzentry)	HIV	Host	Famciclovir (Famvir)	HSV; VZV	Viral
Darunavir (Prezista)	HIV	Viral	Podofilox (Condylox)	HPV	Host
Tipranavir (Aptivus)	HIV-1	Viral	Ganciclovir (Cytovene)	HCMV	Viral
Emtricitabine (Emtriva)	HIV	Viral	IFN-a (Alferon N)	HPV	Host
Atazanavir (Reyataz)	HIV	Viral	IFN-a (Intron-A)	HCV; HBV; HPV	Host
Sofosbuvir	HCV	Viral	Zidovudine (Retrovir)	HIV	Viral
Adefovir dipivoxil (Hepsera)	HBV	Viral	Ribavirin (Copegus); (Virazole)	HCV; FLUV; RSV	Viral
IFN-a (Pegasys)	HCV; HBV	Host	Acyclovir (Zovirax)	HSV; VZV	Viral
IFN-a (Pegintron)	HCV	Host	Trifluridine (Viroptic)	HSV	Viral
Brivudine (Zostex)*	HSV-1; VZV	Viral	Amantadine (Symmetrel)^	FLUV	Viral
Docosanol (Abreva)	HSV	Viral	Idoxuridine (Dendrid)^	HSV	VIral
Zanamivir (Relenza)	FLUAV; FLUBV	Viral	Vidarabine (Vir-A)^	HSV; VZV	Viral
Oseltamivir (Tamifu)	FLUAV; FLUBV	Viral	Telbivudine (Tyzeka)^	HBV	Viral
Efavirenz (Sustiva)	HIV-1	Viral	Simeprevir (Olysio)^	HCV-1	Viral
Nelfinavir (Viracept)	HIV	Viral	Valganciclovir (Vistide)^	HCMV	Viral
Ritonavir (Norvir)	HIV	Viral	Cidofovir (Vistide)^	HCMV	Viral
Indinavir (Crixivan)	HIV	Viral	Zalcitabine (Hivid)^	HIV	Viral
Penciclovir (Denavir)	HSV	Viral	Amprenavir (Agenerase); (Symmetrel)^	HIV; FLUV	Viral
Saquinavir (Invirase)	HIV	Viral	IFN-a (Infergen)^	HCV-1	Host
Lamivudine (Epivir)	HIV; HBV	Viral	Boceprevir (Victrelis)^	HCV	Viral

These examples underline the importance of antivirals in viral disease management. Particularly, BSAs are favorable for treating viral co-infections, reducing the therapy complexity. BSAs can predictively be developed before an emergent strain appears in a population, thus having an advantage over vaccine development. Further, BSAs are propitious substitutes to vaccination programs, for instance, in immunocompromised individuals, meanwhile pending vaccine development, prophylaxis of acute viral infections, and demote pathogenesis once infected (18, 46, 47).

1.3 Prediction of BSA activity

1.3.1 Drug target relevance: Host- and viral-directed BSA targets

BSA activity can be evaluated by investigation of several components. This includes for instance drug-target relevance (TR), which defines a BSA potential to target mechanisms important for viral replication. If a BSA target is associated with the replication of a virus of interest (Voi), the BSA is more likely to succeed in treatment strategies.

BSAs can be divided into virus-directed and host-directed BSAs (52, 58). Virus-directed BSAs target viral proteins essential for viral replication, such as proteins of the viral envelope or nucleic acids. Host-directed BSAs are those targeting cellular factors essential for viral replication (46). Virus-directed BSAs have less potential for toxicity compared to host-target BSAs (52). Further, host-directed BSAs are not selective and modulates the activity of major host-derived factors and pathways. Host-directed BSAs are therefore associated with a higher barrier to drug resistance than virus-directed BSAs (46, 52, 58-60).

RNA viruses encode an RNA-dependent RNA polymerase (RdRp) used for genome replication. Similar, viruses from BC groups VI and VII utilize viral derived reverse transcriptase (RT) for replication steps. BSAs targeting such viral proteins are therefore virus-directed BSAs (61).

Several viruses are dependent on Adenosine 5´-Triphosphateases (ATPases) for viral entry, commonly localized on the host endoplasmic reticulum and plasma membranes. Therefore, BSAs targeting ATPases are host-directed (62-64). Also, both dihydroorotate dehydrogenase (DHODH) and inosine monophosphate dehydrogenase (IMPDH) has been related to the virus life cycle of several RNA viruses (65, 66). Other host targets include Heat shock proteins (HSPs), necessary for various stages of the viral life cycle (67, 68). A selection of host derived BSA targets important for various virus strategies can be retrieved in Table 2.

Table 2: Virus dependency on host targets. The table shows host-derived targets, cellular functions, and their importance in virus pathogenesis. Virus and target abbreviations can be retrieved in supplementary Table S.1 and Table S.3.1, respectively.

Target	Cellular function	Virus	Target viral use
ABL	Regulation of cell proliferation, differentiation, and actin reorganization.	HCV	Viral entry (69).
ACE	Renin-angiotensin system; wound healing and inflammation	SARS-CoV-2	Viral entry (70, 71).
ADA	Purine metabolism	MERS-CoV	Inhibits viral entry (72).
		HIV; MeV; KSHV; EBV	Replication (73, 74).
ADRA	Regulation of neurotransmitter release	FLUV	Virus assembly (75).
AKT	PI3K-Akt signaling pathway	FLUV	Viral entry, internalization, and replication (76).
		EBV; HCV; HBV; HIV	Several (76).
		CPXV; VACV	Replication (77).
ATPases	Membrane transport	MHV; FIPV; VZV; CoVs; ZIKV	Viral entry (62-64, 78)
CCR	Inflammation	DENV	Replication (79).
		HIV	Viral entry (80).
CDKs	Cell division control; Modulation of transcription	HPV; hAdV; HIV; HSV; EBV; FLUAV; HTLV; ZIKV SARS-CoV-2; MERS-CoV; SARS-CoV	Several (81, 82).
CXCL8	Immunosuppression	HCV	Replication (83).
		HIV	Nuclear translocation (84).
DHODH	Pyrimidine synthesis	SARS-CoV-2; FLUAV; ZIKV; EBOV	Replication (65).
Eph-R	Regulate movement, survival, and proliferation	HCV; EBV; KSHV	Viral entry, several (85, 86)
ERBBs	Development	HCV; HBV	Viral entry (86, 87).
		VACV	Spread (77, 86).
FGFs	Development	HSV; ZIKV; FLUV; DENV	Replication (86, 88).
		HSV	Viral entry (86).
		EBV	Cell transformation (86).
		MERS-CoV	Lung cell apoptosis (86).
IMPDH	*de novo* synthesis of guanine nucleotides	CHIKV; JUNV; LASV; EBOV; ZIKV	Replication (66).
H-Ras	Regulation of cell division	HCV	Viral entry (87).
HSPs	Regulation of environmental stress	JEV; DENV; EV; VSV; hPIV; RSV; HCV	Replication (67, 68).
		HSV	Capsid transport (67, 68).
		HBV	Nuclear import and RT activity (67, 68).
JUN	Proliferation, apoptosis, and survival of cells	FLUAV (H5N1)	Viral pneumonia (89).
mTOR	Regulate cell growth and protein synthesis	hAdV	Replication (77).
		HCMV; BKPyV; KSHV	Several (90).
MYC	Regulation of cell proliferation and apoptosis	EBV	Replication, latency (91).

MAPKs	Directing cellular responses	AstV	Translation (77).
		CV-B3; JUNV	Replication (77).
		HCV	Genome synthesis (77).
NF-kB	Controlling transcription of DNA, cytokine production and cell survival	KSHV; MeV; RSV; WNV; HCV; EV; HSV; EBV; FLUAV; HBV; hRoV; POXV; VACV; VZV	Inactivate NF-kB (92).
		KSHV; HSV; HIV; HBV; HPV; hRoV	Activate NF-kB (92).
PDGFR	Regulating cell proliferation and differentiation	KSHV	Tumor progression (77).
		FLUV	Viral entry and internalization (86).
RAF	Regulatory link between Ras GTPases and MAPK cascade	HIV	Synthesis and release (77).
		B19B	Nuclear transport and capsid assembly (77).
SIRT	DNA repair; Proliferation; Metabolism	HIV; FLUAV; HSV; HPV; HBV; HCMV; VZV	Modulate histone modification on viral nucleosomes (93-95).
VEGF	Angiogenesis	ORFV	Replication (77).
		EBV; KSHV; DENV; HSV	Angiogenesis (96).

Most Host-directed BSAs work by inhibiting host factors. However, some host-directed BSAs work to activate innate immune responses against viruses, such as IFNs. IFNs are natural host-directed activators that result in cellular antiviral responses and subsequent attenuation of viral replication (46). Also, some BSAs have both host- and viral-directed activity. For instance, ribavirin targets both RNA-dependent RNA polymerase (RdRp) and inosine monophosphate dehydrogenase (IMPDH) (52, 97). Similar, suramin simultaneously target host and viral related factors. Furthermore, some BSAs are administered as prodrugs and are dependent on activation by either viral or host factors for exerting their antiviral effect (46).

1.3.2 Immunomodulaltory BSAs

Immunomodulatory properties (IP) are important to predict prospective toxicity of investigated BSAs. Immunomodulatory antivirals cover all molecules with the potential to regulate components of our immune system. They work to either enhance or repeal immunological functions, specified as immunostimulatory or immunosuppressive drugs, respectively (98-100). Immunomodulatory drugs have been valuable in treating "cytokine storm syndromes". Interestingly, the disease progression of many inflammatory syndromes shares similarities with viral pathogenesis. These features have been linked to FLUAV, HSV, HIV, MERS-CoV and SARS-CoV, but also implied in the recent emerging SARS-COV-2 (98, 101, 102).

Immunosuppressive BSAs could be beneficial for the treatment of "cytokine storms". However, such medications can prevent the development of adaptive immune responses,

allowing re-infections (58). Studies have shown a substantial correlation between a significant elevation of the pro-inflammatory cytokine IL-6 in severe COVID-19 cases (103). IL-6 are important for the recruitment of innate immune cells and the generation of inflammation. Accordingly, treatment of anti-inflammatory medications, such as anti-IL6 would prove beneficial for reducing adverse reactions seen in SARS-CoV-2. Similarly, the immunosuppressive agent hydroxychloroquine has been proposed as a potential treatment for severe COVID-19 cases. However, the risk of adverse effects outlines the potential clinical benefits (104). Like immunosuppressors, immunostimulatory medications are also related to adverse effects. Potent immunostimulatory BSAs could lead to the activation of cytokine storm events and subsequent tissue damage (58). Nevertheless, precise data on immunomodulatory activities are currently scarce (101).

1.3.3 Other components that can predict BSA activity

TR and IP are only a fraction of BSA activity components to be studied. BSAs can also be evaluated by Phylogeny- and structure- activity relationships. Structure-activity relationship (SAR) analysis reveal chemical structural similarities between BSAs, achieving clusters of comparable BSAs. Such analysis makes it possible to draw structural parallels between BSAs, but also the identification of compounds related to known BSAs. If the BSA is identical to a drug that has already been established against the Voi, the BSA is more likely to be profitable. Phylogenetic (Phyl) analyses are vital in virus exploration, especially in fields of viral epidemiology and diagnostics. Phylogeny investigates trait variations that can be measured for a group of viruses, thus revealing evolutionary parallels between viruses. For example, a BSA is more likely to be effective against a Voi if the BSA has already been approved for a virus closely related to the Voi (46).

Further, Drug developmental status (DDS) can predict a BSAs success. An investigational BSA identical to an approved drug is more likely to succeed than agents only passed *in vitro* testing. Also, BSAs require a Route of administration (RoA) that fits the viral pathogenesis and infection area. Typically, viruses tend to infect more than one specific organ system, thus having a widespread diseased system. For instance, EBV infections mainly affects the cardiovascular system (105). In this case, favorable BSAs are those administered intravenous, such as remdesivir. Most of the developed BSAs are only orally available, due to ease of development and distribution on the market (46). All these BSA activity components are crucial when evaluating a BSAs potential to produce a desired therapeutic effect in patients (Figure 5).

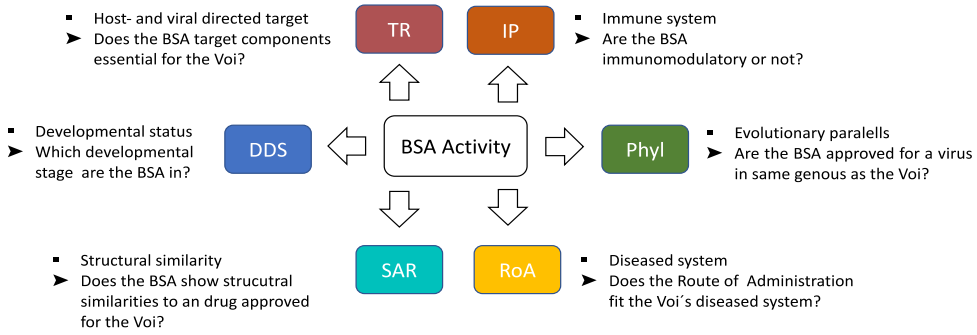

Figure 5: Components of BSA activity prediction. A variety of BSA components can be evaluated to assess BSA activity against a Voi. BSA target relevance (TR) involves the exploration of BSA targets, if a BSA target component(s) important for virus pathogenesis. By evaluation of Immunomodulatory properties (IP), BSA toxicity can be predicated. Potent immunomodulatory medications are commonly associated with adverse effects in patients. Thus, BSAs with no immunomodulation are likely to be beneficial. Furthermore, Phylogeny (phyl)- and structure-activity relationships (SAR) analysis connects evolutionary parallels between viruses and structural similarities between BSAs, respectively. Also, the Route of Administration (RoA) is essential when predicting BSA activity. A BSA must fit the Voi diseased system to be an efficient treatment alternative. Drug developmental status (DDS) denotes current developmental stage of the BSAs.

1.4 Drug development: from *in silico* explorative studies to clinical trials

1.4.1 Traditional drug developmental phases

Before a drug can enter the pharmaceutical market as a licensed medicine, there are several authorization steps. It takes on average ten years for a new drug to complete the process from initial detection until its approval (106). Within this time frame, there are four essential steps. These include the discovery of the novel drug, pre-clinical studies, clinical trials, and post-clinical studies (Figure 6A).

The discovery of novel antiviral activities against a Voi is first explored in immortalized cells. Commonly, these cell cultures and co-cultures express suitable viral receptors for certain viruses, allowing the virus to enter the cells. Antiviral activities are further evaluated in pre-clinical stages, including *in vitro* and *in vivo* studies. *In vitro* studies comprise primary cells such as pluripotent stem cells (PSCs), induced pluripotent stem cells (iPSCs), and embryonic stem cells (ESCs) (18). Primary cells are isolated directly from tissue or blood and are highly specialized. iPSCs, ESCs, and other primary tissue cells are used to produce organoids, which are complex three-dimensional structures resembling organ-specific cell types. *In vivo* studies include immunocompetent or chemically immunocompromised animals. Here, the drug efficacy is elucidated by treating the animal with the drug and infecting it with the Voi (18, 106).

Clinical trials are the most time-consuming step in drug development. Phase 0 and I clinical trials include a few healthy volunteers. Participants in phase 0 are administered with subtherapeutic but pharmacologically active doses, assessing the bioavailability and half-life of the drug (51, 107). However, phase 0 is often skipped (51). Phase I establish a general safety of drug dosage. Further, phase II and III includes testing on patients with the viral disease in question. Phase II involves testing on more people than phase I. Participants are administered the ideal therapeutic dose, assessing the efficacy and side effects. Phase III involves the most participants, including placebos and double-blind studies. Phase III assesses the drug efficacy, effectiveness, and safety and are considered the longest phase in clinical trials. After completing phase III, the drug enters phases IV and V for approval or disapproval by U.S Food and Drug Administration (FDA) and post-market safety monitoring (51).

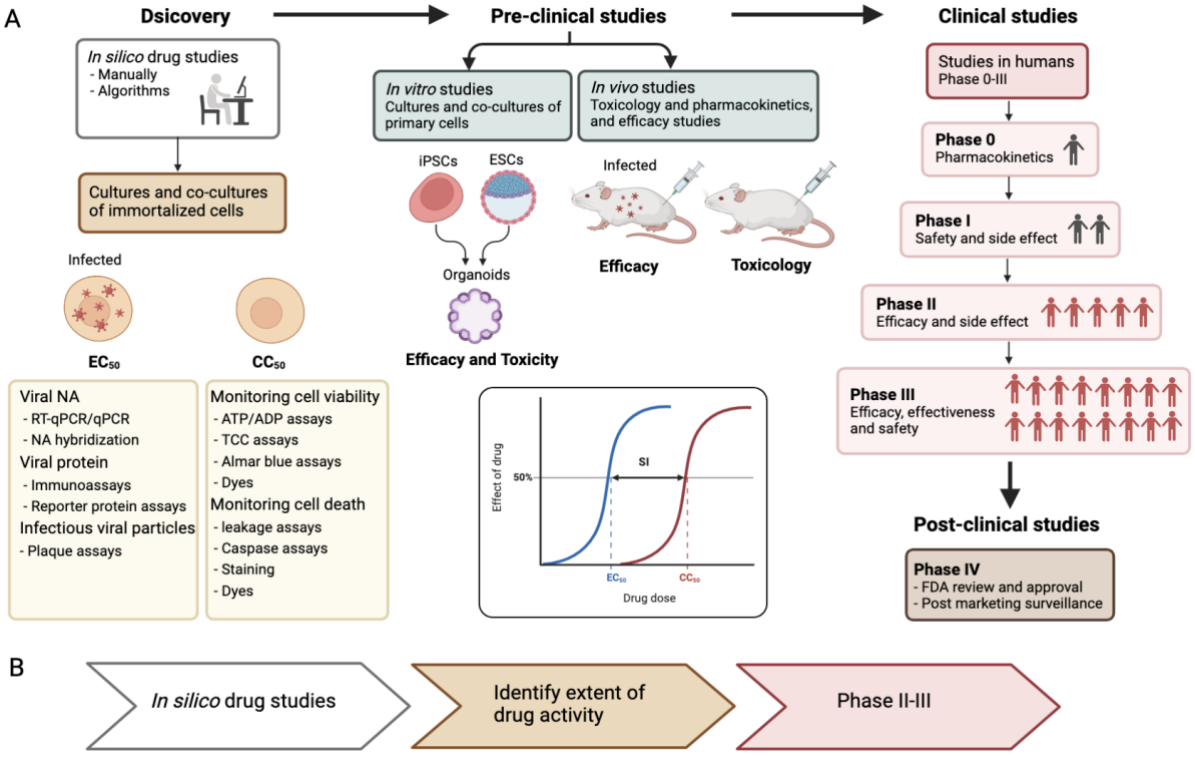

Figure 6: Drug developmental steps and drug repositioning. A. Drug development starts with the discovery of novel BSA activities. Novel antiviral activity is evaluated by Antiviral efficacy and cytotoxicity measurements of compounds. Positive results are further evaluated in pre-clinical studies. Pre-clinical studies include both studies in primary cells (*in vitro*) and animal models (*in vivo*). Further evaluation of a drug is performed in clinical studies (phase 0-III). Lastly, post-clinical studies involve post-marketing surveillance and examination of drug activity by the FDA. FDA decides if the drug should be approved for pharmaceutical use or discontinued, taken off the market. B. Drug repositioning makes it possible to skip time-consuming clinical phases 0-I.

1.4.2 BSA discovery through repositioning

Developing new drugs is a time-consuming, expensive, and high-risk process (108). Therefore, many commonly known antivirals are a product of drug repositioning (or repurposing; redirecting; reprofiling), an evolving approach for drug development. Drug repositioning aims to redirect marketed drugs to target another use outside its original indication (46, 51). For instance, the pharmacological nature of a drug off-target might present the prospect of treating other disorders (57). Accordingly, new medical uses can be identified for approved or investigational drugs, giving additional value to existing medications.

Drug repositioning is a highly efficient process compared with traditional drug development and decreases the time cost significantly (57, 108, 109). Drug repositioning makes it possible to skip both pre-clinical stages and phase 0-I of clinical trials, as these stages are unspecific for any new indication of drug activity. Therefore, synthesis, manufacturing, safety profiling, pharmacokinetic evaluation in animal models, and early clinical developmental steps are already available (51, 57, 108, 109). Since safety profile of repositioned drugs are previously confirmed, drug repositioning holds a higher rewards with lower risk compared to traditional drug development (108). Further, by repositioning BSAs, the cost-effectiveness would increase even further, as the overall developmental cost can be distributed across many viral indications (46).

Normally, drug repositioning consists of three steps before potential approval of the candidate drug (Figure 6B). The first and most critical step includes "indication discovery", to detect drug candidates for a given indication. This step includes *in silico* explorative studies (110). *In silico* studies can be both manually and algorithm-based screening. Manually studies include literature review and database searches, to obtain evidence for potential drug candidates. This method gives low throughput and is highly time-consuming. Manually generated studies are often preferred when less data is available, for instance in cases of newly introduced viruses. Plenty of algorithm-based screening methods can be applied, including signature matching, computational molecular docking, pathway, network mapping and Genome-wide association studies (GWAS) (108, 110-112). This method gives higher throughput than manually based studies. Algorithm-based screening is preferred when much data is available, such as in case of well-established viruses (110, 111).

The following step includes experimental studies to confirm high-hit drug-virus interactions from phase 1, to identify the extent of antiviral activity of drug candidates for its new indication. Further, the BSA enter phase II and III, which assess the drug's efficacy, effectiveness, safety, and side effects in patients (111).

1.4.3 Measuring antiviral efficacy and cytotoxicity

The potential for a drug as an antiviral is often measured by the selectivity index (SI) or therapeutical index. These two parameters are relative to each other, giving the same relationship of measurements (this measurement is henceforward mentioned as SI). SI results from dividing antiviral cytotoxicity by antiviral efficacy (Equation 1) (113). Antiviral efficacy is often given by the half-maximal effective concentration (EC_{50}), the concentration needed to obtain a 50% antiviral effect. Also, but less commonly, antiviral efficacy can be given as the half-maximum inhibitory concentration (IC_{50}), which is a substance potency to inhibit 50% of viral replication. Cytotoxicity can also be given by IC_{50} but is furthermost given as the compound´s half cytotoxic concentration (CC_{50}), which is the concentration that reduces the cell viability by 50% (113, 114).

Equation 1: Selectivity index (SI). $\mathrm{SI} = \frac{\mathrm{CC_{50}}}{\mathrm{EC_{50}}}$

An ideal drug should have a low active concentration, and a relatively high cytotoxic concentration (113). Accordingly, the greater the value of SI, the drug are more likely to gain approval for development, and the drug is less likely associated with high-risk in patients (107). Thus, SI reflects the window between antiviral efficacy and cytotoxicity.

Antiviral efficacy can be measured experimentally by detecting viral nucleic acid, viral proteins, or infectious particles. The most used methods include plaque reduction assays, which detect infectious viral particles. These measurements designate viral infection for a variety of drug concentrations. Furthermore, cytotoxicity assays can be experimentally determined by monitoring cell viability or cell death. Cell viability assays include techniques such as metabolic assays and exclusion and reduction dyes. Likewise, cell death can be measured by apoptotic and metabolic assay, but also by staining and dye methods (51).

EC50 and CC50 are often measured in cultures and co-cultures of immortalized cells in the exploratory phase of drug development. Pre-clinical *in vivo* studies measure the efficacy of antivirals by visualizing clinical signs and estimates the development of immunity and viral titers. Further, toxicological *in vivo* studies denote the maximum tolerated dose by measuring drug absorbance and duration (51).

Another parameter which indicates drug activity is drug sensitivity score (DSS). DSS represent the normalized version of area under the curve (AUC), whereas AUC describes the total drug exposure at function of time. Thus, DSS quantify the sum of response intensity, and thus a drug´s sensitivity can be revealed across a broad range of viruses (115, 116).

2 Aims and Objectives of the project

Over the past years, humans have faced several major viral epidemics and pandemics unprepared. During widespread viral outbreaks, vaccines and antiviral drugs have shown to be influential on the outcome. However, several hurdles are associated with vaccine use, such as the appearance of vaccine-immune viral strains. Also, vaccine and drug development are highly time-consuming, which is not time matching when a pandemic has already emerged. This is solved by drug repositioning, which offers a rapid and low-cost approach against emergent viruses. As preparation for drug repositioning steps, databases summarizing material on antiviral research and methods for identifying the most promising BSAs are essential.

Subsequent to the SARS-CoV-2 emergence, the crowded material and information on antiviral activity became even harder to follow. To assemble and review BSA activity, my research team generated DrugVirus.info database containing safe-in-man BSAs. I aimed to enrich this BSA database, which facilitated the visualization and comparison of antiviral activities. Accordingly, we managed to expand the already available BSA information from DrugVirus.info and incorporated BSA-containing drug combinations (BCCs) into the portal (DrugVirus.info 2.0).

Furthermore, drug repositioning includes an initial and vigorous step: discovery and identification of new BSA attributes. For that purpose, we generated a six-component BSA scoring system to evaluate BSA activities. Thus, my aim was to examine components within the BSA-scoring system, to select promising BSAs for drug repositioning and for evaluation in combinations. To investigate promising BCCs, we developed a four-component BCC scoring system. Together, these scoring systems enabled the prediction of both BSAs and BCCs against potential pandemic viruses.

Accordingly, this thesis will address the following treads:

- Development of DrugVirus.info 2.0 BSA database by manual *in silico* curation of peer-reviewed scientific literature.
- Development of BSA scoring system for prediction of a few from 255 most promising BSAs.

3 Material and Methods

Data material for this thesis work was obtained through a comprehensive literature and database search in each section, divided into two parts: the generation of DrugVirus.info 2.0 database and a BSA scoring system. Each part consists of separate sections. Each section describes search strategy and selection criteria, and data curation. Snapshots of excel files were added as illustrations of data curation.

Part 1: DrugVirus.info 2.0 database

My contributions in developing the DrugVirus.info 2.0 database was to expand the initial BSA database and *in silico* assemblage of antiviral activities from published scientific papers. These two contributions were used to create the final DrugVirus.info BSA database.

3.1 BSA database expansion

3.3.1 Search strategy and selection criteria

The initial population of DrugVirus.info BSA database provided within my research group was expanded with experimental, investigational, approved, and withdrawn BSAs. To identify those BSAs, antivirals were inspected by their antiviral activity. Only antivirals with activity against more than two different viruses within two different viral families were included. Accordingly, antivirals with activity against less than two viral families were excluded from the database, as they do not meet the criteria for being BSA. Other exclusion factors include illicit drugs, mixtures, metals, and exclusively veterinary drugs.

3.3.2 Curation of data output

For each BSA, the drug name(s), approval status, primary activity indication, potential target, mode of action, PubChem ID, DrugBank ID, and InChl key were recorded.

Drug	Other Names	Approval Status	Primary Indication	Potential target	Drug_Bank_ID	PubChem_CID	Mode_of_action	InChI_Key
25HC	25-Hydroxycholeste	Experimental	Anticancer	Human membrane	DB04710	65094	Inhibits viral entry	INBGSXNNRGWLJU-ZHHJC
Digitoxin		Experimental	Antiarrythmic	Human ion transporter	DB01396	441207	Inhibits viral entry	WDJUZGPOPHTGOT-XUDL
Sertraline		Approved	Antidepressant	Human serotonin transpo	DBSALT000808	68617	Mediates sodium-depe	VGKDLMBJGBXTGI-SJCJKP
Tetrandrine	Fanchinine; Sinome	Experimental	Anti-inflammatory	Human ion channel	n.a.	73078	Prevents viral entry	WVTKBKWTSCPRNU-KYJU
Valacyclovir	Valaciclovir	Approved	Antiviral	Viral DNA pol; Viral RNA p	DB00577	135398742	Inhibits viral DNA synt	HDOVUKNUBWVHOX-QM
Verdinexor	KPT-335	Investigational	Antiviral	Human exportin	DB12207	71492799	Nuclear export inhibito	OPAKEJZFFCECPN-XQRVV

Further, drug-virus interactions were recorded. The viral target name and abbreviation, BC (virus group), virus family, and viral disease were recorded for each drug. Also Recorded was the developmental status of the drug-virus interactions.

Drug	Virus	Virus Group	Cell lines	Primary cells	Animal model	Phase I	Phase II	Phase III	Approved	Phase IV	Reference	Virus Family	Virus Name	Viral disease
25HC	ZIKV	(+)ssRNA	*								PMID: 2831	Flaviviridae	Zika virus	Zika virus disea
25HC	HIV-1	ssRNA-RT	*		*						PMID: 2327	Retroviridae	Human imm	Acquired immu
Digitoxin	CMV	dsDNA	*								PMID: 2932	Herpesviridae	Human betal	Mononucleosis
Digitoxin	SARS-CoV-2	(+)ssRNA	*								PMID: 3477	Coronaviridae	Severe acute	COVID-19
Sertraline	PICV	(-)ssRNA	*								PMID: 3070	Arenaviridae	Cali mammar	No disease in h
Sertraline	LASV	(-)ssRNA	*								PMID: 3070	Arenaviridae	Lassa mamm	Lassa hemorrh
Tetrandrine	HSV-1	dsDNA			*						PMID: 9326	Herpesviridae	Human alpha	Cold sores
Tetrandrine	EBOV	(-)ssRNA	*								PMID: 3180	Filoviridae	Zaire ebolavi	Ebola hemorrh
Valacyclovir	EBV	dsDNA							*		CID:135398	Herpesviridae	Human gamr	Infectious mon
Valacyclovir	HBV	dsDNA-RT							*		CID:135398	Hepadnavirida	Hepatitis B v	Hepatitis B
Verdinexor	EBV	dsDNA				*					PMID: 3033	Herpesviridae	Human gamr	Infectious mon
Verdinexor	FLUAV	(-)ssRNA			*						PMID: 2789	Orthomyxovir	Influenza A v	Influenza

This section was performed by all group members within my research group. Data assembled was added to the DrugVirus.info 2.0 BSA database, represented in a heat-map. This BSA collection was used in all further sections described in this thesis.

3.2 *In silico* assembly of antiviral activity

3.2.1 Search strategy and selection criteria

A manual literature search in PubMed was performed of all BSAs within our database. The searches included the respective BSAs and the following keywords: "EC50" and "CC50" or "IC50" and "CC50" or "selectivity index" or "antiviral activity" and "cytotoxicity". The searches were restricted to "antiviral activity" only to identify articles involving viral activity. Selected papers were reviewed, and the most applicable were included. Excluded papers include those not reporting the cell line used in measurements.

3.2.2 Curation of data output

For each unique drug, the drug name, target virus, cell line, antiviral efficacy values, cytotoxicity values, SI values, and PMID reference were recorded when available. All data was gathered and presented in an excel-table.

DrugName	Virus	Cell line	Antiviral efficacy	Cytotoxicity	SI	PMID
25HC	hRoV	MA104	0.16uM (0.12-0.2	>150uM	>938.	30212801
Digitoxin	HSV-1	Vero	0.05uM	10.66uM	213.	18353452
Sertraline	EBOV	Huh7	3.79uM	22.61uM	5.97.	29939303
Tetrandine	hCoV-229E	MRC-5	0.33uM (+-0.03)	13.41uM (+-	40.19.	31690059
Verdinexor	hAdV-5	HeLa	0.18uM	0.18uM	1.	30332435

Standardized converting methods were used for converting antiviral efficacy and cytotoxicity values. Nanomolar (nM), micromole per milliliter (umol/mL), nanomole per milliliter (nmol/mL), and millimolar (mM) into micromolar (uM). Further, gram per liter (g/L), nanogram per milliliter (ng/mL), microgram per milliliter (ug/mL), gram per liter (g/L), and milligrams per liter (mg/L) were all converted. The molecular weights used for the respective BSAs were retrieved from the PubChem database, given in g/mol. The BSAs and their corresponding molecular weight used can be found in supplementary Table S.2.2.

In cases where SI was not specified, BSA antiviral efficacy and cytotoxicity measurements were used to calculate SI, using Equation 1. Calculated SI was included for each BSA into the DrugVirus.info 2.0 BSA database.

My contributions to generating a BSA-scoring system were to evaluate BSA targets and immunomodulatory properties. Potential viral- and host targets have previously been investigated within my research group. This section was therefore indented as an expansion of already available information. Investigation of immunomodulatory properties was a new supplement to my research group. This, together with phylogeny- and structure-activity relationship analysis, route of administration, and developmental status assessed, were used to generate suitable scores for each BSA (46). The two following sections describes search strategy and data curation in examinations of drug target relevance and immunomodulatory properties, followed by stepwise explanation of BSA-scoring system generation.

3.3 Drug target relevance: BSA targets

3.3.1 Search strategy and selection criteria

BSA targets were retrieved and evaluated from three following databases: DrugBank; Therapeutic Target Database (TTD); and Drug Gene Interaction database (DGIdb). There were no criteria selected for database searches within DrugBank and TDD. Within DGIDb, only drug-host target genes with an interaction score of more than 0.1 were assembled.

3.3.2 Curation of data output

From DrugBank and TDD database, both viral proteins and host target genes were assembled. Viral proteins were recorded due to the lack of viral gene names. N.a. indicates when searches in DrugBank or TDD were not appearing or when the respective BSA did not have any reported targets. Furthermore, only host target genes were available within DGIdb. Within the DGIdb, N.a. indicates searches which were not appearing or when the drug-target interactions did not meet the search criteria.

	DrugBank		DGIdb	TTD	
BSA	Host target	Viral target	Host target	Host target	Viral target
25HC	N.a.	N.a.	N.a.	N.a.	N.a.
Digitoxin	ATP1A1 (inhibitor)	N.a.	ATP1A1, ATP1B2, A	ATP1A1, ATP1A	N.a.
Etravirine	N.a.	gag-pol (HIV-1)	ABCC3, ABCG2, AB	N.a.	gag-pol (HIV-1,
Sertraline	SLC6A4 (inhibitor and b	N.a.	SLC6A4 (inhibitor,	SLC6A4 (inhibitc	N.a.
Tetrandrine	ABCB1 (inhibitor)	N.a.	N.a.	N.a.	N.a.
Zanamivir	NEU2 (inhibitor)	NA (FLUAV A/B;	N.a.	N.a.	NA (FLUAV A/W

The targets were further evaluated based on their functionality. Targets that were found within the same protein family were clustered together. Both host and viral targets were illustrated in two manually made heat maps.

3.4 Immunomodulatory properties

3.4.1 Search strategy and selection criteria

Immunomodulatory properties were evaluated based on published scientific papers in PubMed. The manual PubMed searches included the BSA of interest and keywords such as "Immunomodulatory" and "Immunosuppressive" or "Immunostimulatory". Furthermore, DrugBank ATC classification of "Antineoplastic and immunomodulating agents" (L) were used to support the immune-modulatory indications of all BSAs from the PubMed searches. Within this classification, DrugBank ATC sub-classification of immunosuppressive compounds (L04) and immunostimulatory compounds (L03) were used.

3.4.2 Curation of data output

For each drug, immunomodulatory property (yes or no), implied activity, and its effect on the immune system or inflammation was recorded. If the BSA were specified with immunomodulatory activities on the first five pages on a PubMed search, the BSA was recorded with "yes". Similar, if the BSA was specified with no immunomodulatory appearances, the BSA were recorded with "No". If immunomodulating activities were not apparent, the BSA was assumed to have nonobvious immunomodulatory appearances, designated with N.a.

If a BSA were specified with "yes", its indicated activity was recorded. The indicated activity was recorded as either immunosuppressive or immunostimulatory, as central separation. Some BSAs were identified with minor suppression of the immune system or with unspecified suppressive activity. These BSAs were therefore classified as "implied immunosuppressive". BSAs with immunomodulatory properties that directly affected inflammation was specified with pro-inflammatory or anti-inflammatory activities. BSAs with overlapping activities were given more than one activity (e.g., immunosuppressive and anti-inflammatory, or anti-inflammatory and pro-inflammatory). Lastly, a more detailed description of the BSAs´ effect on the immune system or inflammation was recorded.

BSA	Immunomodulator	Indicated activity	Effect on the immune system	Reference
25HC	Yes	Pro-inflammatory	Amplifies inflammatory signalir	PMID: 24994901
Alisporivir	No	N.a.	N.a.	PMID:32376613
Clotrimazole	Yes	Implied immunosuppressive	Inhibits IKCa1 channels in activa	PMID: 10884437
Digitoxin	N.a.	N.a.	N.a.	N.a.
Fluvastatin	Yes	Anti-inflammatory and pro-inflammatory	Induce IL-1beta release; trigger infl	PMID: 31573980;
Monensin	Yes	N.a.	Reduced IL-1beta secretion; inh	PMID: 26936096;
Sertraline	Yes	Immunosuppressive	Inhibitors of innate signaling pa	PMID: 20382888
Sunitinib	Yes	Immunostimulatory	Reduce expression of immunos	PMID: 21716852;

3.5 Generation of BSA-scoring system

A six-component BSA scoring system was generated within my research group to identify the most promising monotherapies, covering different virus species within five Baltimore groups (group I, IV, V, VI, and VII). The BSAs scoring was based on giving each component a size, representing favorable and less favorable BSA properties. The following components (C) were used in the scoring system: Structure-activity relationship (SAR); Drug developmental status (DDS); Drug target relevance (TR); Drug immunomodulatory properties (IP); Route of administration (RoA); and Phylogeny (Phyl). Each of the respective BSAs was scored as follows (46):

I. SAR component (C_{SAR})
   - ⇒ If the BSA is identical to a drug which has been developed or is currently under development for the virus of interest (Voi), $C_{SAR} = 1$;
   - ⇒ If the BSA is structurally similar to a drug which was developed or under development against the Voi, $C_{SAR} = 0.5$;
   - ⇒ If the BSA has a distinct structure, $C_{SAR} = 0$

II. DDS component (C_{DDS}), only applies to BSA with $C_{SAR} = 1$
   - ⇒ If the BSA is approved or is in phase IV clinical trials against the Voi, $C_{DDS} = 1$;
   - ⇒ If the BSA is in phase I-III clinical trials, $C_{DDS} = 0.75$;
   - ⇒ If the BSA has been tested *in vivo*, $C_{DDS} = 0.5$;
   - ⇒ If the BSA has been tested *in vitro*, $C_{DDS} = 0.25$;
   - ⇒ If the BSA has not been tested, $C_{DDS} = 0$;

III. TR component (C_{TR})
   - ⇒ If the confirmed primary target of the BSA in question is associated with Voi replication (the drug target is essential for Voi replication), $C_{TR} = 1$;
   - ⇒ If not, $C_{TR} = 0$

IV. IP component (C_{IP})
   - ⇒ If the BSA does not interfere with host immune response, $C_{IP} = 1$;
   - ⇒ If the BSA is immunomodulatory, $C_{IP} = 0$

V. RoA component (C_{RoA})
   - ⇒ If the Route of administration (RoA) of the BSA is well-suited for the diseased system (for example, inhalation of drug for treatment of respiratory viruses), $C_{RoA} = 1$;
   - ⇒ If not, $C_{RoA} = 0$

VI. Phyl component (C_{Phyl})
   - ⇒ If the Voi is in the same genus as the virus for which the BSA has been developed, $C_{Phyl} = 1$;
   - ⇒ If the Voi is in the same family, $C_{Phyl} = 0.5$;
   - ⇒ If the Voi is in a closely-related family, $C_{Phyl} = 0.25$;
   - ⇒ If the Voi is distantly-related, $C_{Phyl} = 0$

To calculate the final BSA score, the points across all six components were summated together, using the formula for BSA score:

Equation 2: BSA score formula. $BSA\ score = C_{SAR} + C_{DDS} + C_{TR} + C_{IP} + C_{RoA} + C_{Phyl}$

For instance, the activity of Elvucitabine against HBV was scored at 4.5. Elvucitabine showed structural similarities to Lamivudine, which is currently approved for treating HBV, and therefore C_{SAR} were scored to 0.5. Since C_{SAR} were less than 1, C_{DDS} equals 0. Further, elvucitabine blocks reverse transcriptase by inhibiting the viral enzyme reverse transcriptase, and thus C_{TR} were scored 1. The BSA was not apparent with any immunomodulatory activities, and therefore C_{IP} were also scored 1. Furthermore, Elvucitabine is orally developed, which fits HBV diseased system, which gives C_{RoA} that equals 1. The BSA was initially developed for treating HIV, but are also indicated in the treatment of HBV, and therefore were C_{Phyl} scored 1.

The most promising BSA monotherapies were further evaluated in combinations by developing a four-coefficient BCC scoring system, to identify the most promising combinational therapies. This BCC scoring system were generated by coefficients for drug interaction, drug-target interaction, drug-target stage of replication and drug RoA.

4 Results

As for methods, results are divided into two parts: Generation of the DrugVirus.info 2.0 database and a BSA-scoring system. Certain figures are retrieved from the published article, Ianevski et al., Mono- and combinational drug therapies for global viral pandemic preparedness, 2022, for supportive means (46).

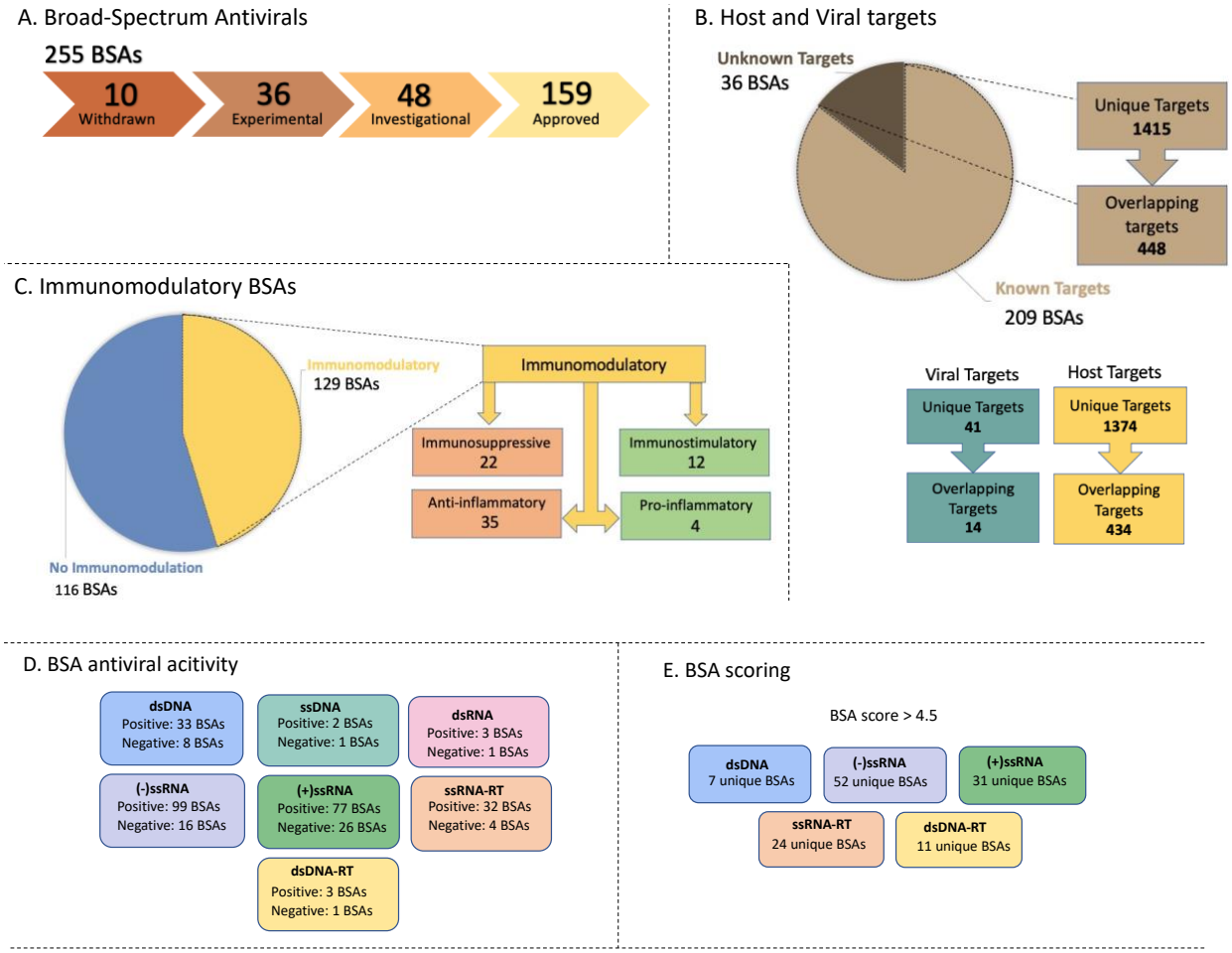

Figure 7: Summary of results. A. Our database contains approved, investigational, experimental, or withdrawn BSAs. In total, the database consists of 255 BSAs, whereas 159 are approved for pharmaceutical use in humans. B. Out of the 255 BSAs, 209 had known targets. Together, 1415 unique targets were identified. Interestingly 448 of these targets are commonly seen in two or more BSAs. C. 129 BSAs were identified with immunomodulatory properties. 22 BSAs where evaluated as suppressive of our immune system, meanwhile 12 BSAs were indicated with stimulatory effects. The majority, 35 BSAs, were indicated as anti-inflammatory, meanwhile 4 were indicated pro-inflammatory. D. Positive (SI > 1) and negative (SI ≤ 1) antiviral activity within each BC group. E. From our scoring system, illustrated is the amount of unique BSAs which scored above 4.5 within each BC group.

4.1 BSA database expansion

Our database expanded from 116 BSAs to 255 BSAs. These can be reviewed in the Drugvirus.info 2.0 BSA database. This is shown as an integrative heat-map of BSAs, which enables the visualization and exploration of BSA-virus interactions (Figure 8).

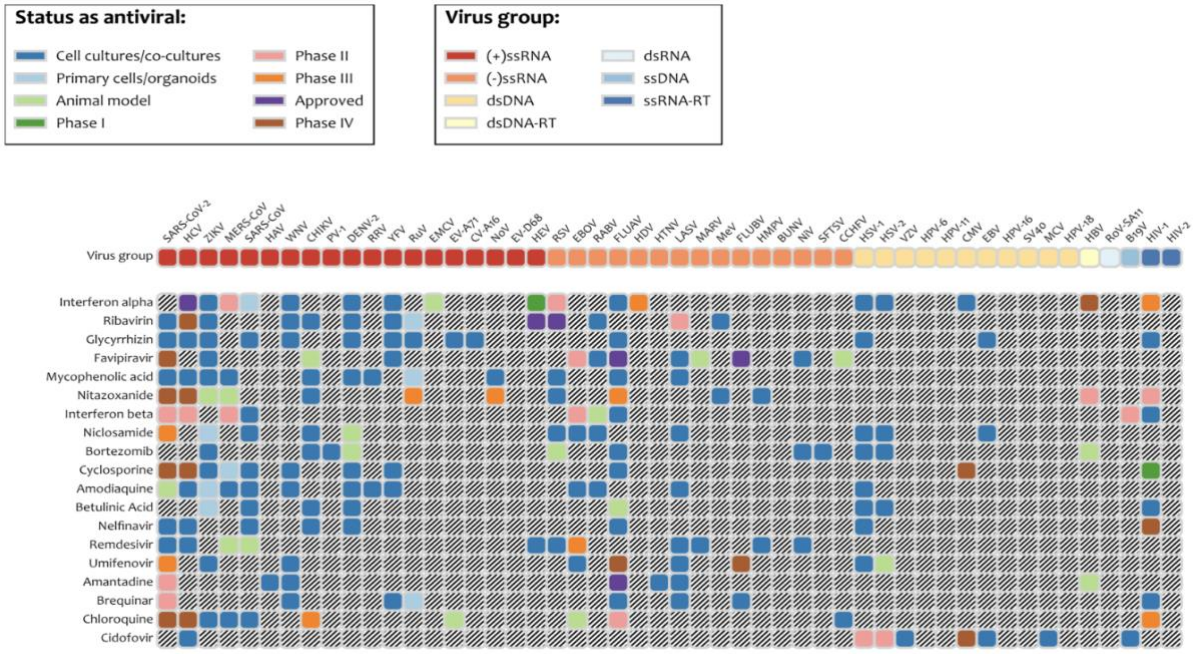

Figure 8: DrugVirus.info 2.0 BSA heat-map. Figure illustrates a section of the BSA Heat-map within DrugVirus.info 2.0 database. Shown is the BSAs on the vertical axis, and the virus targets on the horizontal axis. The viruses are categorized into its Baltimore class (virus group) in colors. Also indicated is the developmental status (status as antiviral) for each BSA, where grey shading designates BSA-virus interactions not studied or reported. BSAs are also ranged from the ones targeting the most viruses (upper), to the fewest (bottom).

4.2 *In silico* assembly of antiviral activity

The manual curation of >2000 PubMed articles allowed the assembly of CC_{50} and EC_{50} from published papers. SI could be calculated from these measurements, reflecting each unique BSA activity (Supplementary Table S.2.1). The SIs revealed several BSAs with positive and negative antiviral activities (Figure 7E). BSAs considered with positive antiviral activity were those gaining a SI > 1. BSAs with negative antiviral activity were predicated when SI $\leq$ 1.

Many already approved BSAs, with known antiviral activity against a particular virus, were indicated with high SI. Interestingly, several not-yet-approved BSAs were reported with

high SI against certain viruses. The majority of BSA antiviral activity was specified against ssRNA viruses. Especially *Filoviridae* and *Orthomyxoviridae* family of (-)ssRNA and *Flaviviridae* and *Coronaviridae* family of (+)ssRNA was most tested *in vitro*. Also, several BSA has been tested against *Retroviridae* family of the ssRNA-RT group. Within the dsDNA group, BSAs are mostly tested against the *Herpesviridae* family of viruses (Figure 9).

Adefovir dipivoxil is approved for the treatment of HBV from the dsDNA-RT BC group. This BSA gained SI > 1 for dsDNA CPXV, VARV, and VACV and the ssRNA-RT HIV-1. Further, brivudine is approved for the treatment of the dsDNA BC group members HSV-1 and VZV. In searches, this BSA gained SI > 1 for other dsDNA viruses (CPXV, EBV, KSHV, HSV-2, MHV-68, RRV, and VACV). This was also the case for ganciclovir, which is approved in the treatment of HCMV (EBV, HHV-6, HHV-7, KSHV, HSV-1, HSV-2, MCMV, MHV-68, and RRV). Favipiravir is approved in Japan for treating influenza strains, and were found with SI > 1 for (-)ssRNA EBOV and SFTSV, and (+)ssRNA SARS-CoV-2.

Also, some BSAs showed positive results across a broad range of BC groups. This includes 25HC, chloroquine, clofazimine, quinacrine, and tilorone with antiviral activity against dsRNA, (+)ssRNA and (-)ssRNA BC group; beclabuvir, berberine, erlotinib, and gemcitabine with antiviral activity against dsDNA, (+)ssRNA, (-)ssRNA, and ssRNA-RT BC group; lamivudine with antiviral activity against (-)ssRNA, ssRNA-RT, and dsDNA-RT BC group; minocycline, ritonavir, and sunitinib with antiviral activity against (+)ssRNA, (-)ssRNA and ssRNA-RT BC group; mycophenolic acid and ribavirin with antiviral activity against dsDNA, (+)ssRNA, (-)ssRNA and dsRNA BC group; and adefovir dipivoxil with antiviral activity against dsDNA, ssRNA-RT and dsDNA-RT BC group.

Furthermore, some discontinued BSAs (Table 1, ^) were suggested with positive antiviral activity against other viruses than their primary indication, within the same BC group: boceprevir, formerly against (+)ssRNA HCV, had positive antiviral activity against SARS-CoV-2; vidarabine formerly against dsDNA HSV and VZV, with antiviral activity against CPXV, EBV, KSHV, MHV-68, and RRV; simeprevir formerly against (+)ssRNA HCV, with antiviral activity against SARS-CoV-2 and ZIKV; cidofovir formerly against dsDNA HCMV with antiviral activity against hAdV, BKPyV, CPXV, EBV, HHV-6, HHV-7, KSHV, HSV-1, HSV-2, MPXV, ORFV, VARV, VACV, and VZV (See Supplementary Table S.2.3 for BSAs identified with positive and negative antiviral activity).

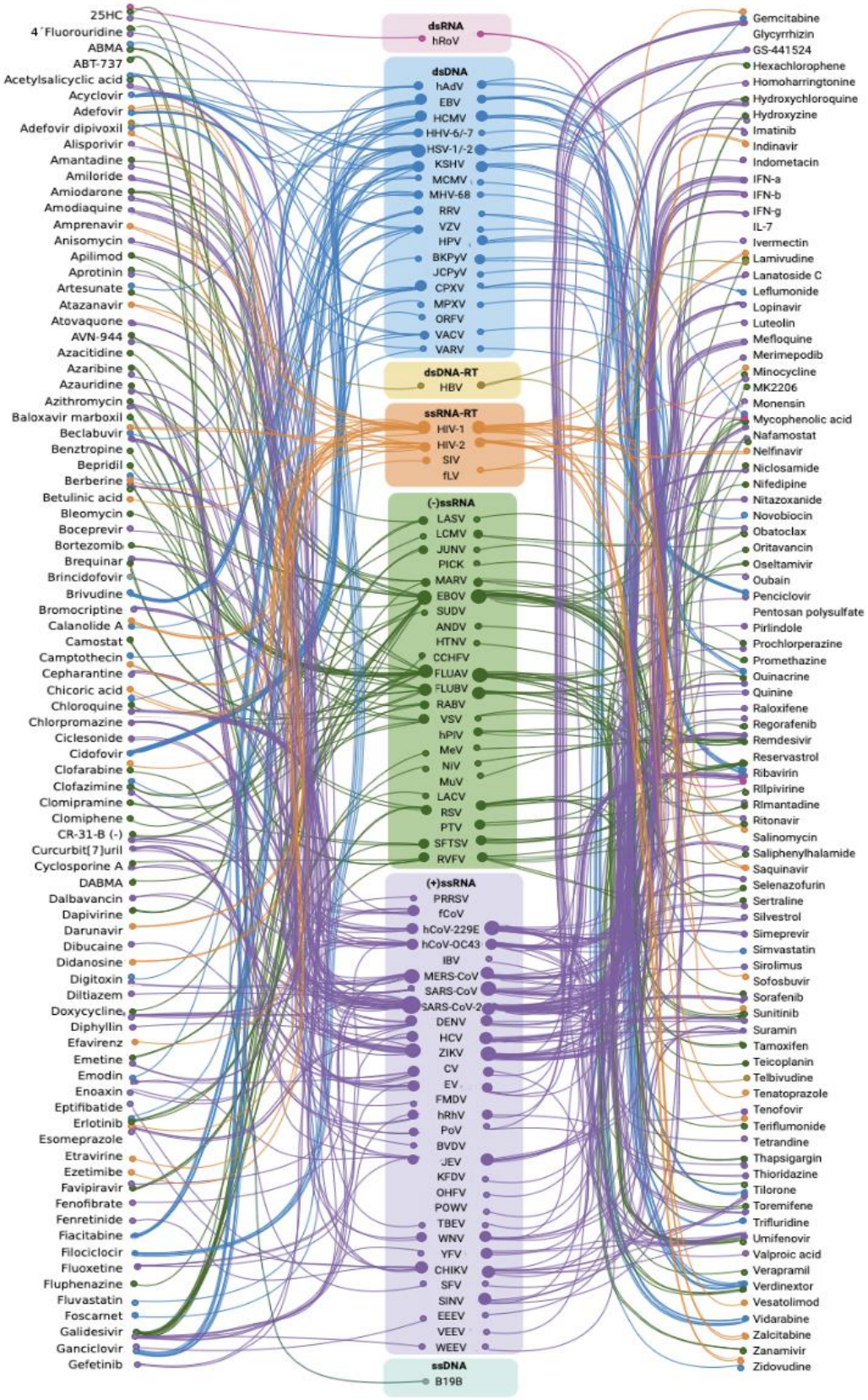

Figure 9: BSAs with SI > 1. The diagram shows the distribution of BSAs (outer lines) with positive antiviral activity against a particular virus within its BC group (mid-line).

In vitro tested monotherapies with CC50, EC50, and resulting SI values were included into the DrugVirus.info 2.0 BSA database. Data outputs are given as bar diagrams, which illustrates the respective BSA and target viruses. The bars indicate SI, which illustrates BSA antiviral activity against a particular virus. This enables the comparison of SIs for a broad range of viruses. For instance, remdesivir are approved for treating cases of SARS-COV-2, and were found to have antiviral activity against a variety of RNA viruses. This can for instance endorse testing of remdesivir against other (+)ssRNA viruses (Figure 10).

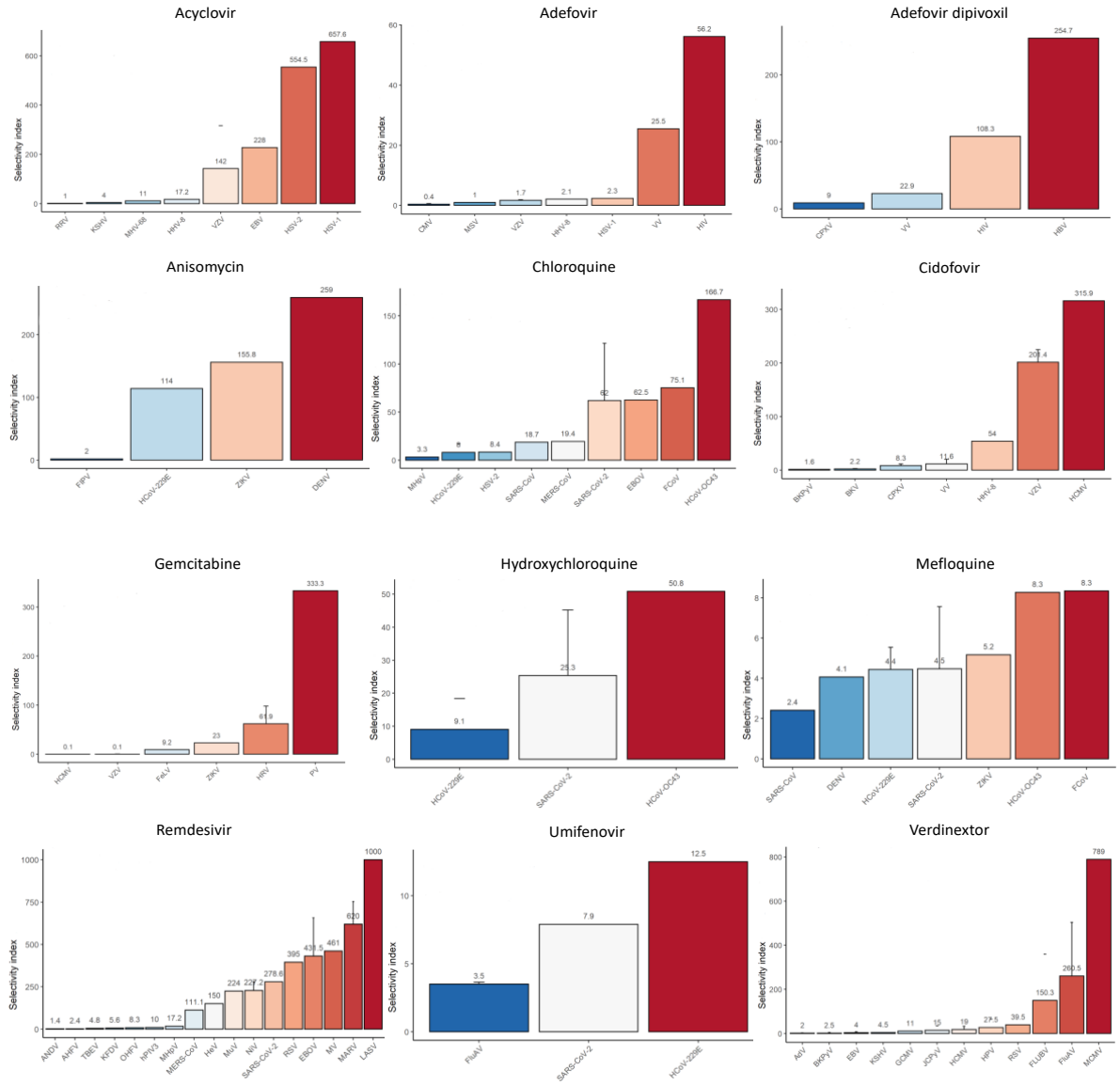

Figure 10: DrugVirus.info 2.0 bar-diagrams. Figure shows selected bar-diagrams presented in DrugVirus.info 2.0 database. SI values were calculated from EC_{50} and CC_{50}, illustrated in separate diagrams within the database. The bars represent SI against a particular virus.

4.3 Components of the BSA scoring system

We developed a six-component scoring system for predicting the most promising monotherapies. Components scored were Drug target relevance (DT), Immunomodulatory properties (IP), Route of Administration (RoA), Structure-activity relationships (SAR), phylogeny, and Drug developmental status (DDS). The following sections describe examination of these components.

4.3.1 Drug-target relevance: Host and viral-directed BSA targets

DT component was evaluated by the identification of host and viral-directed BSA targets. From database search, impressive 209 of our BSAs have known targets. Only a minor of our BSAs got no hits when searching for targets in all three databases. 1415 unique targets were identified for 209 of our BSAs, whereas 448 of these showed overlapping targets (Figure 7B).

A cluster of BSAs was identified to target the gag-pol polyprotein of HIV-1, (adefovir dipivoxil; amprenavir; atazanavir; calanolide A; dapivirine; darunavir; didanosine; efavirenz; elvucitabine; emtricitabine; etravirine; indinavir; lamivudine; lobucavir; lopinavir; rilpivirine; ritonavir; saquinavir; sofosbuvir; stavudine; telbivudine; tenofovir; tipranavir; zalcitabine; zidovudine). Also, several BSAs was recognized in interfering with specific proteins of the DNA polymerase (acyclovir, adefovir, betulinic acid, brincidofovir, brivudine, cidofovir, famciclovir, foscarnet, ganciclovir, penciclovir, tenofovir, valaciclovir, valganciclovir and vidarabine). Further, galidesivir, GC-376, remdesivir and rilpivirine was found to target replicase polyproteins of *Coronaviruses* (Figure 11).

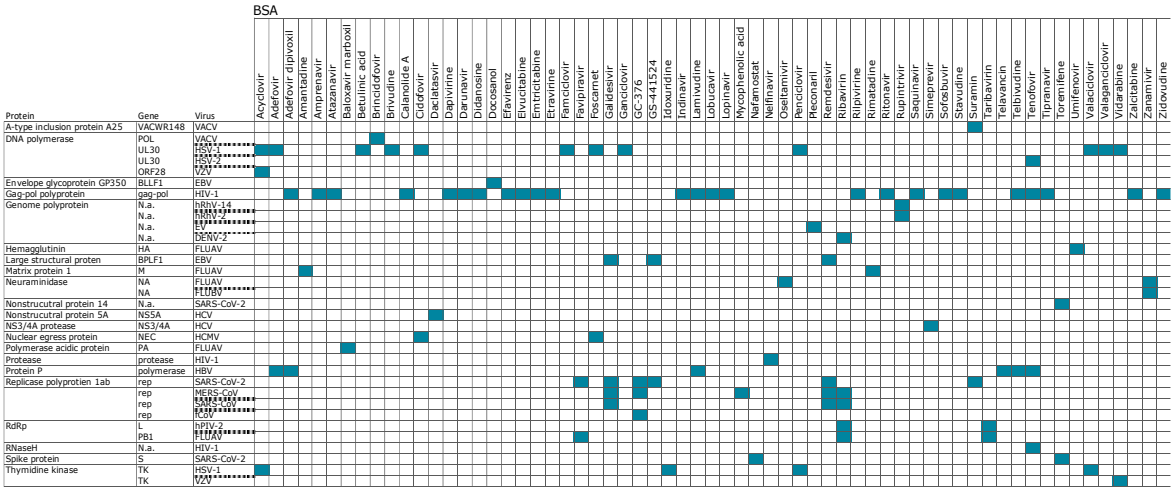

Figure 11: Virus-directed BSA targets. Shown are the BSAs (horizontal axis), and virus target protein and gene names (vertical axis). Targets are marked in blue.

Further, several BSAs were identified with overlapping host targets. In searches, ATPases were targeted by several BSAs (artezunate, digitoxin, esomeprazole, etanercept, methotrexate, obatoclax, quercetin, saliphenylhalamide, and thapsigargin). Other targets implicated important in the viral life cycle include: DHODH (atovaquone, brequinar, leflunomide, and teriflunomide); IMPDH (AVN-944, cyclosporine, merimepodib, mycophenolic acid, ribavirin, selenazofurin, and taribavirin); HPSs (acetylsalicylic acid, bortezomib, chlorpromazine, cyclosporine, dasatinib, methotrexate, nitroprusside, quercetin, resveratrol, tamoxifen, thapsigargin, verapamil, and zalcitabine); ACE (chloroquine, fluvastatin, hydroxychloroquine, irbesartan, and nitroprusside); ABL (acyclovir, dasatinib, homoharringtonine, imatinib, regorafenib, and saracatinib); AKT (genistein, MK2206, nelfinavir, resveratrol, topotecan, and vemurafenib); CDKs (camptothecin, flavopiridol, selenazofurin, and sertraline); EPH-R´s (dasatinib, genistein, regorafenib, and vandetanib); FGF (indomethacin, pentosan polysulfate, sirolimus, and sorafenib); VEGF (fenofibrate, minocycline, sunitinib, and vandetanib); and NF-kB (artesunate, glycyrrhizin, luteolin, and tyrphostin AG1478). (Figure 12., See also the supplementary section S.3.1, Figure S.3.1 for all overlapping targets identified and Table S.3.1 for target clusters (*) and gene members).

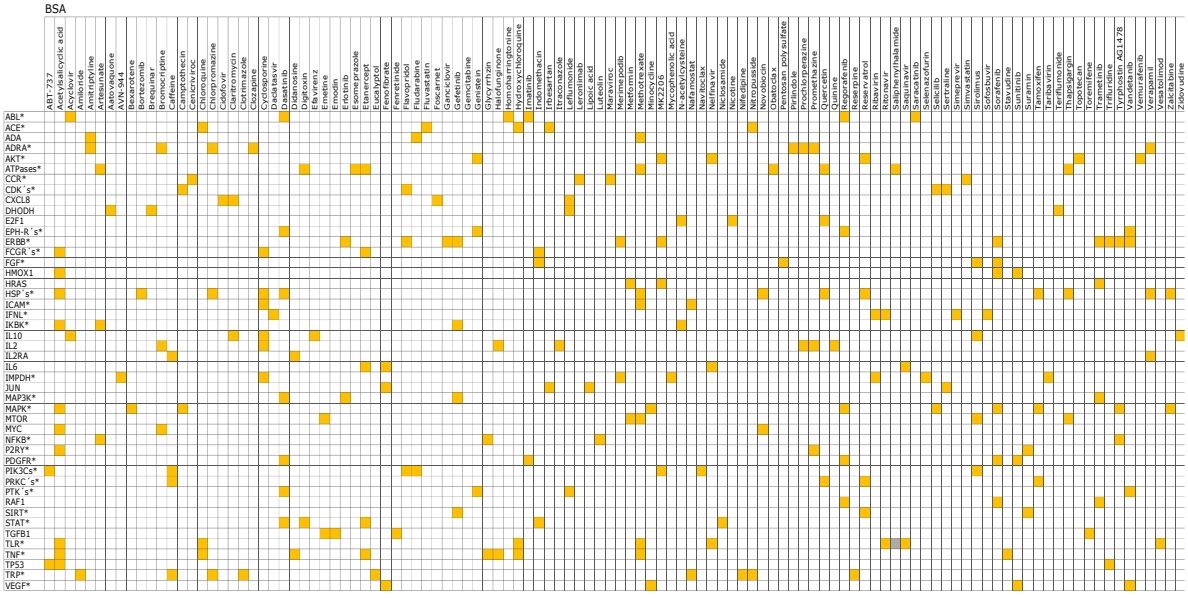

Figure 12: Host-directed BSA targets. Section of overlapping host target genes for each unique BSA, marked in yellow. * Includes >1 gene cluster.

BSAs were accordingly identified with several viral and host targets, which are related to different virus strategies. Most virus-directed BSAs work by inhibiting viral nucleic acid synthesis or protein processing (Figure 13A). Host-directed BSAs were identified with more diverse mechanisms, including targeting lipid metabolism, receptor-mediated signaling and protein modification, trafficking, and synthesis (Figure 13B).

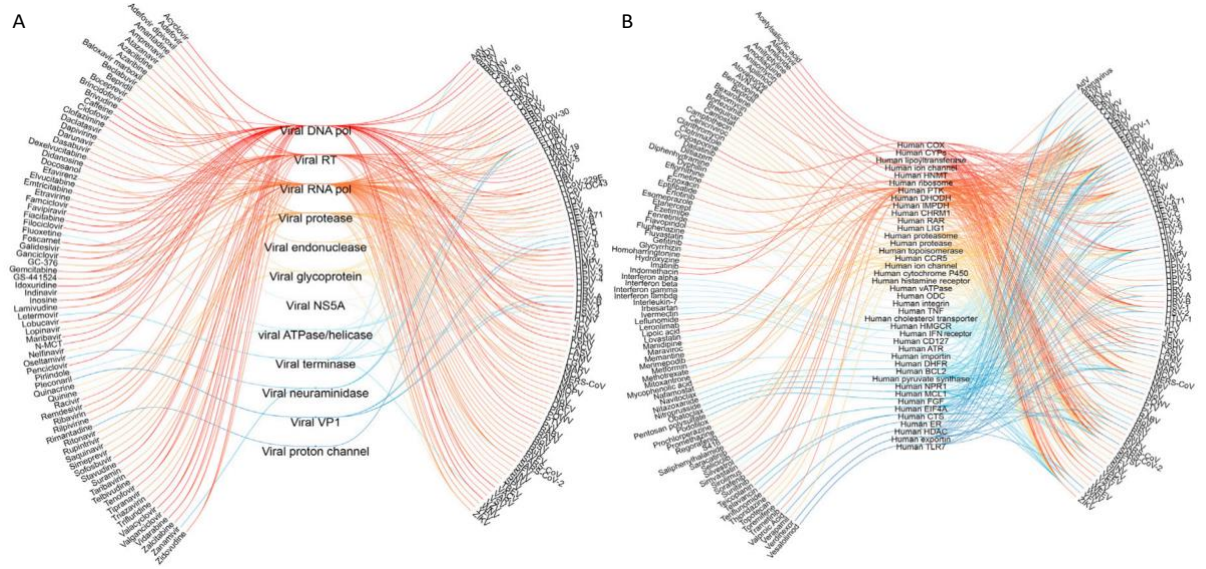

Figure 13: Eye diagram of primary viral- and host-directed BSA targets. A. Virus-directed BSAs linked to viruses through targets. B. Host-directed BSAs linked to viruses through targets. The figure are derived from a separate publication within my research group, Ianevski et al., Mono-and combinational drug therapies for global viral pandemic preparedness, 2022 (46).

4.3.2 Immunomodulatory BSAs

129 out of 245 BSAs showed immunomodulatory properties (IP) (Figure 7C). 22 showed to be immunosuppressive and 12 to be immunostimulatory. Some BSAs was indicated with only minor suppressive activity on the immune system, compared with for instance the potent immunosuppressor sirolimus. Therefore, these BSAs are classified in a side-group named "Implied Immunosuppressive".

Several of the immunomodulatory BSAs showed to have activity on inflammation. There were identified 35 anti-inflammatory BSAs and 4 pro-inflammatory BSAs. Further, Some BSAs were indicated to affect both on immunity and inflammation, where 21 BSAs have both immunosuppressive and anti-inflammatory activity, and 2 BSAs have both immunostimulatory and pro-inflammatory properties. Furthermore, seven of the immunomodulatory BSA were not identified with any distinct activity and are therefore classified as "others". The immunological and inflammatory groups mentioned above can all be shown in Figure 14 (See also the supplementary section S.3.2, Table S.3.2 for explanation of immunomodulatory classification).

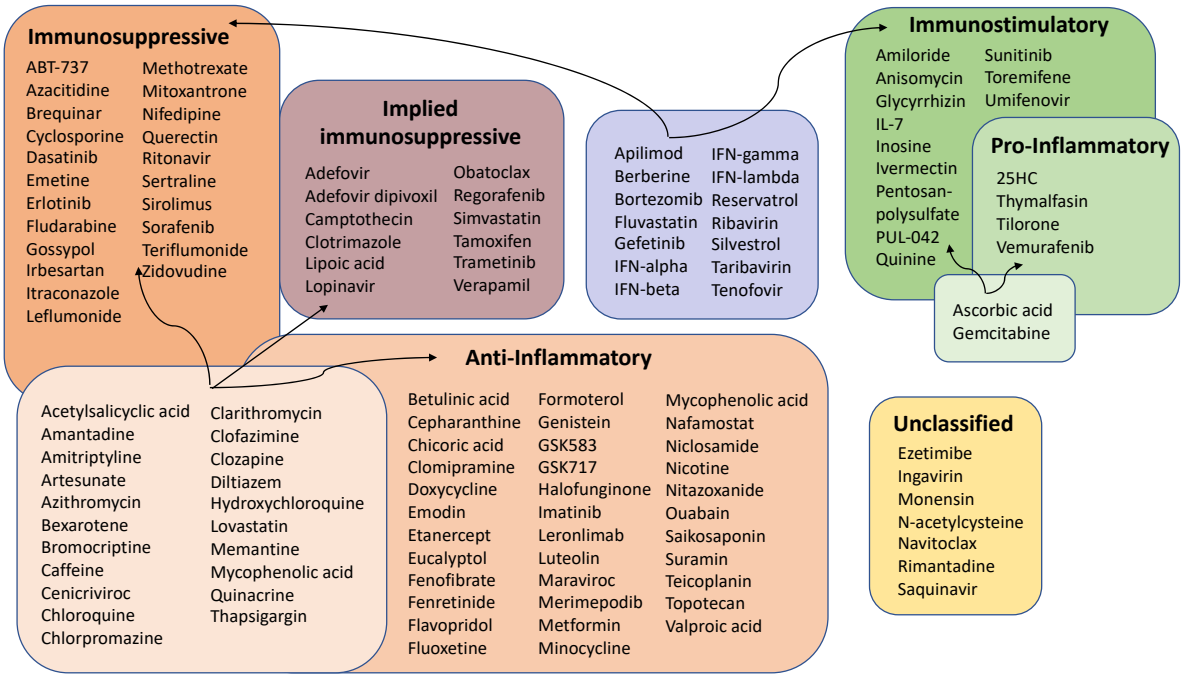

Figure 14: Immunomodulatory BSAs and their effect on the immune system and inflammation. Immunomodulatory BSAs were classified into immunosuppressive (orange) and immunostimulatory (green) BSAs. Within these groups, many showed to have inflammatory appearances, anti-inflammatory, and pro-inflammatory, respectively. Also, a side group of BSA with reducing activity of immunological functions is shown as "implied immunosuppressive". The subgroups represent BSAs with both immunosuppressive and anti-inflammatory characteristics (orange) and BSA with immunostimulatory and pro-inflammatory characteristics (green). Furthermore, some BSAs where identified as both immunostimulatory and immunosuppressive, in different circumstances (purple). Some BSAs were unclassified but are implicated as immunomodulatory (yellow).

Several BSAs were identified with immunomodulatory targets. For instance, imatinib, tamoxifen, erlotinib, and methotrexate are all BSAs identified with several immunomodulatory targets, explaining their immunomodulatory actions. Many BSAs target similar clusters of immunomodulatory genes, indicating some functional and structural similarities between the targets (Figure 15).

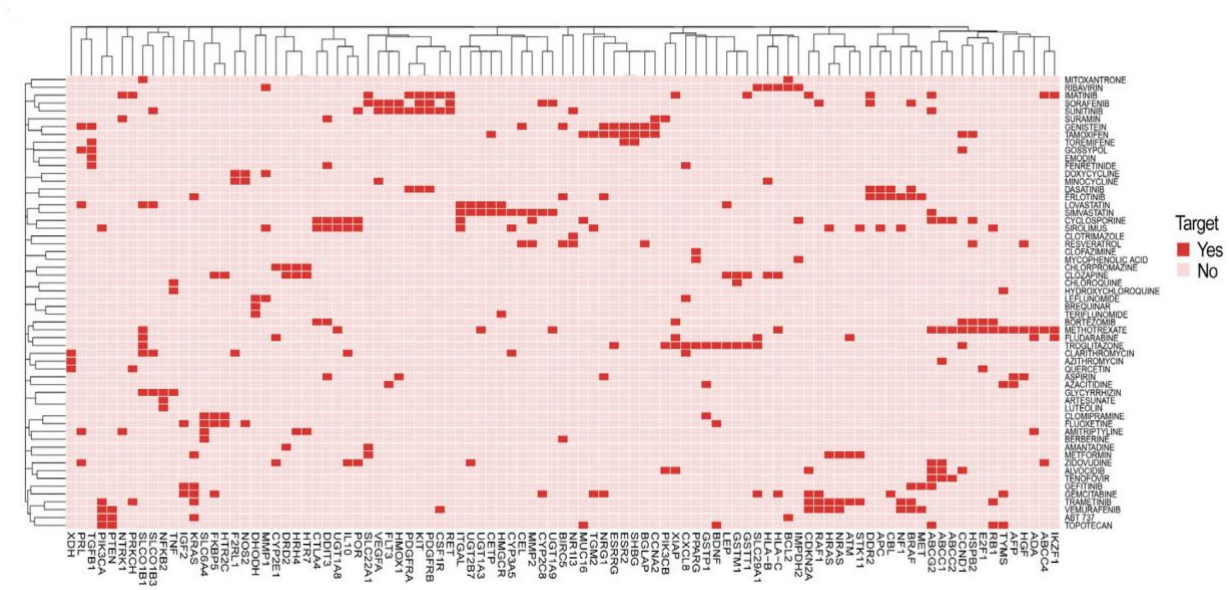

Figure 15: BSAs with immunomodulatory targets. The figure illustrates a selection of 58 BSAs with common immunomodulatory targets. The figure are derived from a separate publication within my research group, Ianevski et al., Mono-and combinational drug therapies for global viral pandemic preparedness, 2022. (46).

4.3.3 Route of administration and Phylogeny- and Structure-activity relationship

RoA must fit a virus diseased system for achieving maximal antiviral effect and to reduce the potential of adverse effects. Viruses tends to infect diverse diseased systems, such as, nervous, endocrine, respiratory, cardiovascular, immune and lymphatic, digestive and excretory, exocrine, and reproductive systems (Figure 16A). Furthermore, most of the BSAs evaluated were orally developed. Other administration routes identified for the BSAs were intravenous, subcutaneous, ocular, topical, suppository, and inhalation (Figure 16B).

Furthermore, SAR analysis revealed structural similarities between several BSAs. This enabled identification of compounds related to known BSAs. For instance, the non-nucleoside reverse transcriptase inhibitors etravirine, dapivirine and rilpivirine showed structural similarities to alflutinib, melarsoprol and melarsomine (Figure 16C). Also, phylogenetic analysis of drug-virus interaction revealed that most of the BSAs have only been tested against a small subpopulation of related viruses. As phylogenetic similar viruses are more likely to respond to the same drug, this uncovers several BSA treatment options yet not discovered (Figure 17).

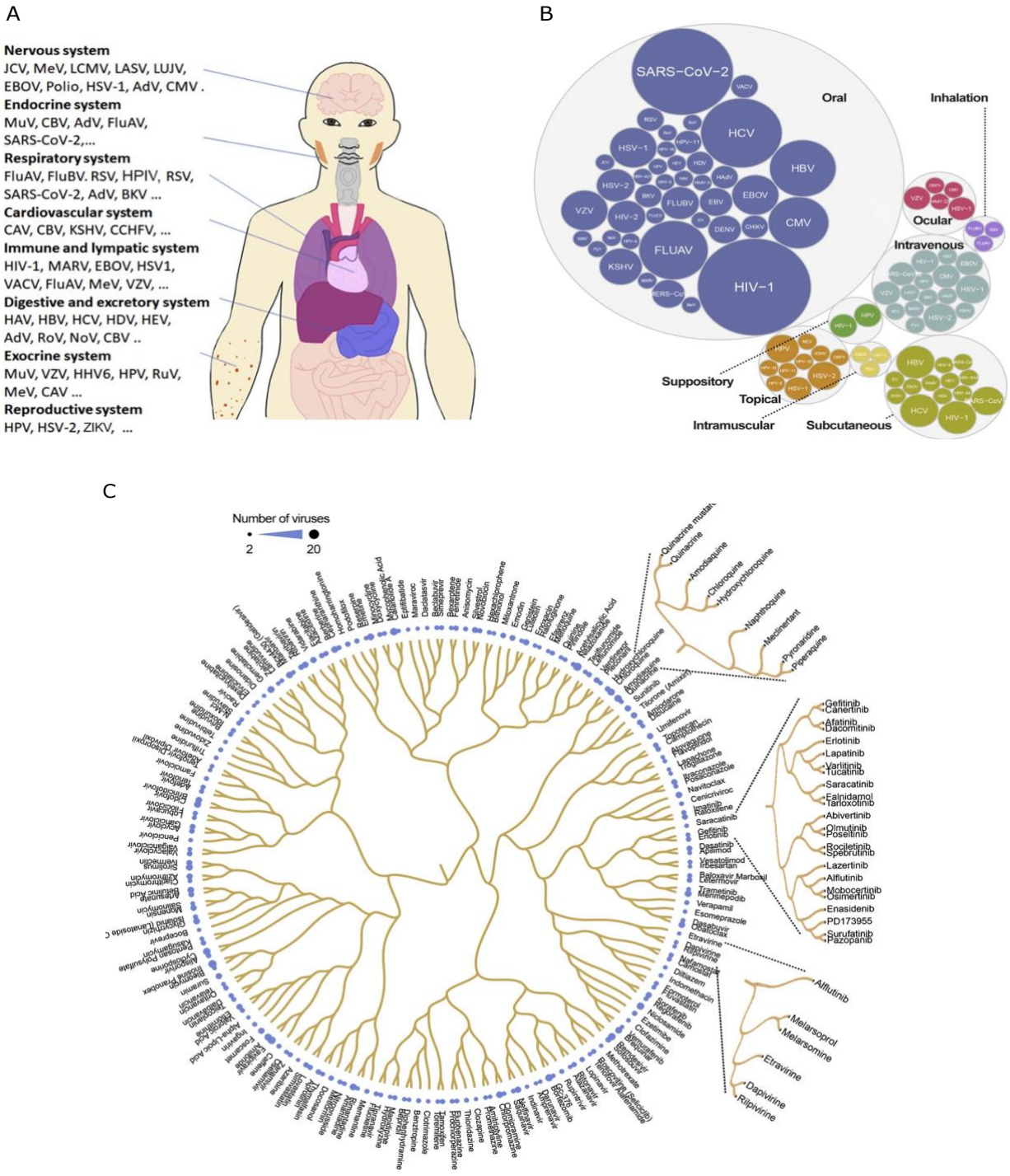

Figure 16: Route of Administration and Structure-activity relationship. A. Organ systems where different viruses tend to infect. B. RoA of BSAs, whereas bubbles show the number of BSAs developed against a particular virus. C. Structure-activity relationship (SAR) analysis dendrogram. Clusters include BSAs within our database. Also illustrated are three sub-clusters of BSAs and potential BSA compounds. The figure are derived from a separate publication within my research group, Ianevski et al., Mono-and combinational drug therapies for global viral pandemic preparedness, 2022 (46).

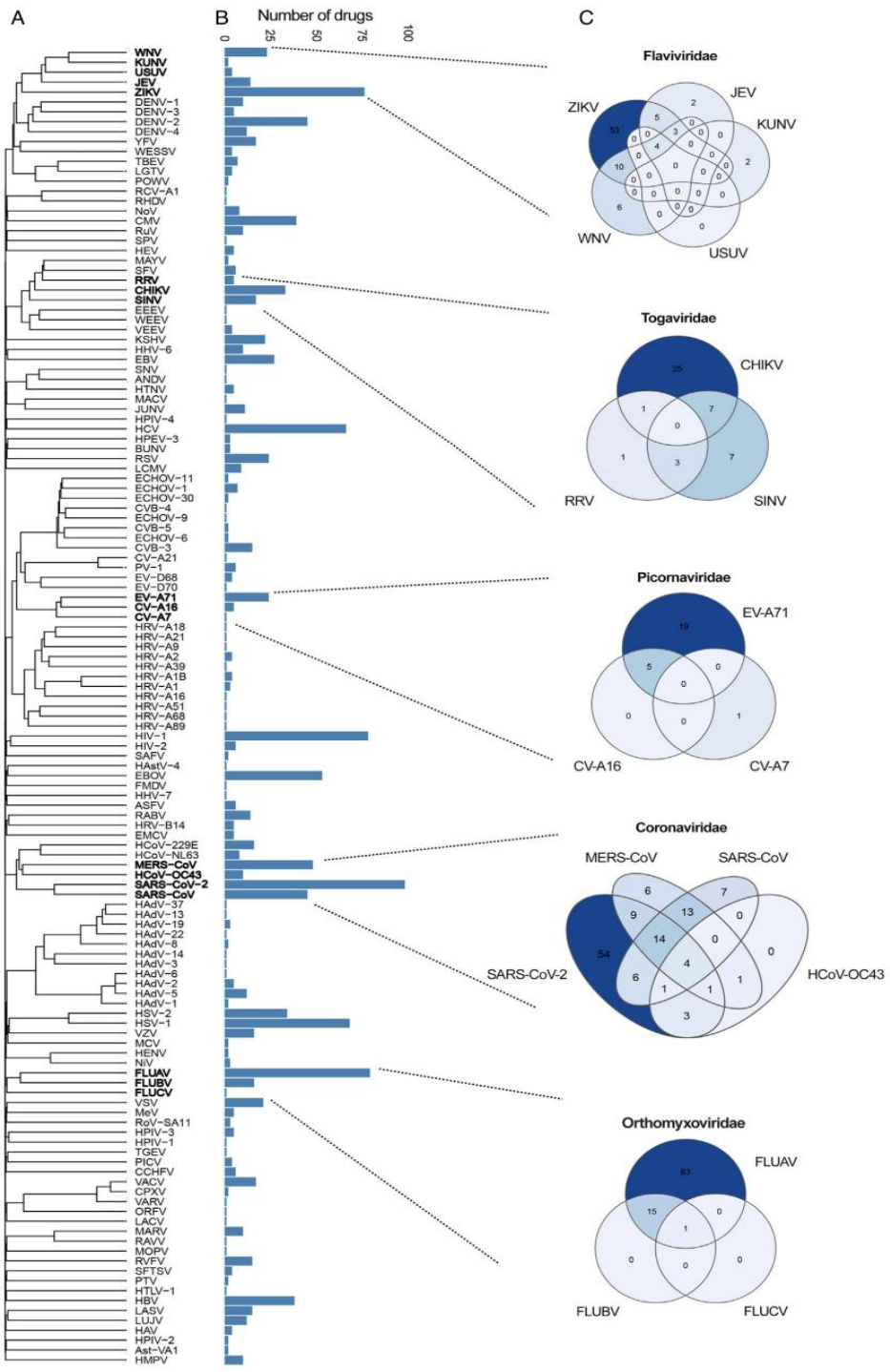

Figure 17: Phylogenetic analysis of drug-virus interactions. A. Phylogenetic three were generated based on amino acid sequences of viral encoded polymerases and reverse transcriptases. B. The number of BSAs within our database with activity against viruses from the phylogenetic three. C. Diagram representing the number of BSAs which target closely related viruses. The figure are derived from a separate publication within my research group, Ianevski et al., Mono-and combinational drug therapies for global viral pandemic preparedness, 2022. (46).

4.4 Generation of BSA Scoring system

In total, 33 viruses were scored against 206 of our BSAs. The viruses cover classes I, IV, V, VI, and VII (Figure 7D). Within the BC groups, the chosen viruses were those which have the highest case fatality or are known to appear at the highest frequencies within populations. From group I, CPXV, VARV and VZV, and Group IV, Ast-VA, DENV, HCV, and ZIKV was scored. Further, from Group V MARV, RAVV, LUJV, JUNV, LASV, EBOV, ANDV, HTNV, SNV, LACV, BUNV, RVFV, SFTSV, PTV, CCHFV, HDV, FLUAV, HENV, NiV, HPIV, MeV, HMPV, and RSV was scored. In the reverse transcriptase groups, Group VI including HIV-1, HIV-2 and HTLV-1, and group VII including HBV was scored (Figure 18).

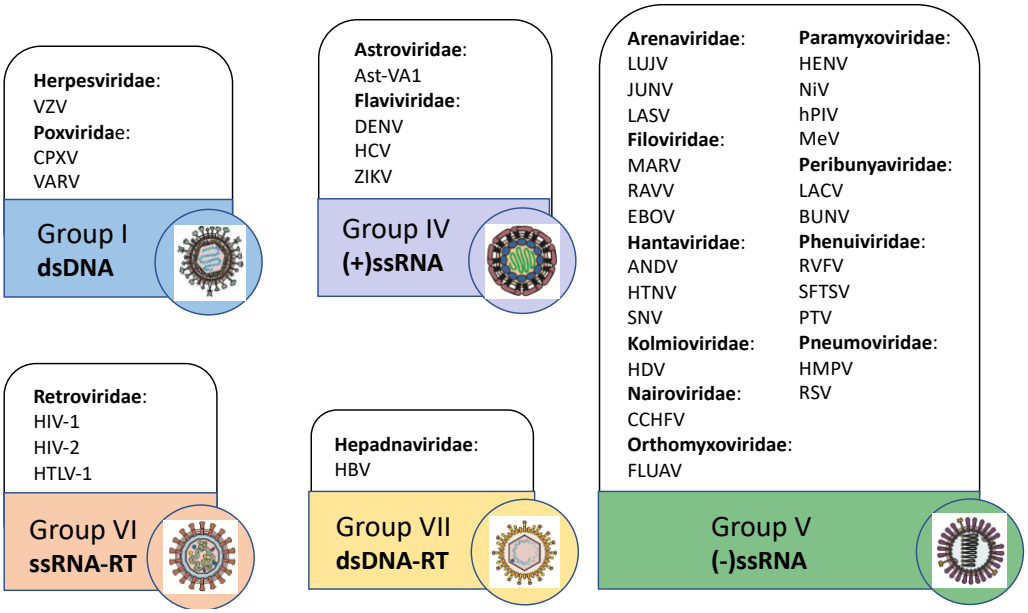

Figure 18: Baltimore classification of scored viruses. All viruses studied can be found within their respective Baltimore group and virus family. See supplementary section, Table S.1 for virus abbreviations.

Table 3A-D and 3 shows result from the six-component scoring system. For the dsDNA group, the highest BSA score was with brivudine, famciclovir, and vidarabine against VZV (6.00), following brincidofovir against CPXV and VARV (4.75) (Table 3A). Likewise, for the (+)ssRNA group, favipiravir gained the highest score against Ast-VA1 (5.25) and ivermectin against DENV (5.75). Boceprevir, beclabuvir, sofosbuvir, and simeprevir gained full score against HCV (6.00). For ZIKV, rilpivirine and sofosbuvir gained the greatest BSA score (5.5) (Table 3B). Further, for ssRNA-RT group, several BSA gained full score against HIV-1, including emtricitabine, zalcitabine, and lamivudine. These BSAs also gained high score against HIV-2 (lamivudine = 6.00, emtricitabine and zalcitabine = 5.50). A large group of BSAs share the highest score against HTLV-1 (3.50) (Table 3C). Furthermore, for dsDNA-RT, lamivudine, telbivudine, and valacyclovir gained full score against HBV (6.00) (Table 3D).

Lastly, the majority of virus species scored was from the (-)ssRNA group, presented in Table 4. Favipiravir gained high score for several of the viruses within this group, including for FLUAV (6.00), LUJV (5.25), JUNV, LASV, MARV, CCHFV, NiV, and RVFV, (5.50), EBOV and SFTSV (5.75), ANDV, HTNV, and SNV (5.25). Other BSAs which gained high scores where as follows: AVN-944, Benztropine, Raloxifene and Amiodarone against LUJV (5.25); galidesivir against MARV (5.75) and RAVV (5.25); amodiaquine, amiodarone, galidesivir and remdesivir against EBOV (5.75); vandetanib against ANDV (5.25); baloxavir marboxil against HTNV (5.25); bulevirtide against HDV (6.00); baloxavir marboxil, oseltamivir, triazavirin and zanamivir against FLUAV (6.00); gossypol and ivermectin against HENV (4.25); remdesivir against NiV (5.5); GS-441524 against hPIV (5.5); inosine against MeV (4.75); baloxavir against LACV (5.25); saliphenylhalamide against BUNV (5.25); taribavirin against PTV (4.25); oritavancin and remdesivir against HMPV (5.25); and 4´-fluorouridine against RSV (5.5). See also supplementary Table S.3.3, which specify each BSA component score.

In vitro tested monotherapies (Supplementary Table S.2.1 and S.2.3) could be evaluated together with results from the BSA-scoring system (Table 3 and 4), to further confirm promising BSA activities for already approved BSAs (Table 1). Favipiravir are currently approved for treatment of Influenza. Favipiravir gained high scores for SFTSV in our BSA scoring system and are estimated with a SI = 4 in Vero cells (117). Trifluridine, brivudine and acyclovir are approved for treatment of herpesviruses. Trifluridine gained decent scores for CPXV, calculated with a SI > 180 in Vero cells. Furthermore, both brivudine and acyclovir gained high scores for CPXV and are indicated with a SI > 3 in Vero cells (118).

Ritonavir is approved for treatment of HIV. Ritonavir gained high scores for RVFV, estimated with a SI > 4 in A549 cells (18). Ribavirin is approved for HCV, FLUV and RSV. Ribavirin gained high scores for DENV, with a SI ranging from 4-9 in different cell lines (18, 119). Furthermore, IFN-a is approved in treatment of HCV, HBV and HPV. From our scoring system, IFN-a gained high scores for ZIKV and are calculated with a SI >7 in Vero cells (120).

Some of the approved BSAs have been discontinued for original purpose. However, these BSAs cut-off effect could potential be beneficial in treating other viruses. Vidarabine have been canceled for treatment for HSV and VZV. Vidarabine gained decent scores for CPXV, estimated with a SI > 110 in Vero cells (118). Similar, simeprevir are canceled for treatment of HCV. Simeprevir gained high scores of ZIKV and indicated with SI > 25 in Vero and U87 cells (121).

Table 3: Scoring of dsDNA, (+)ssRNA, ssRNA-RT, and dsDNA-RT BC group. Results from the six-component BSA scoring system for A. dsDNA, B. (+)ssRNA, C. ssRNA-RT, and D. dsDNA-RT. Abbreviations; SAR = structure activity relationship; Phyl = phylogeny; TR = target relevance; DDS = developmental status; RoA = route of administration; IP = immunomodulatory properties.

A

BSA Score dsDNA

Virus	BSA name	SAR	Phyl	TR	DDS	RoA	IP	Total
VZV	Brivudine; Famciclovir; Vidarabine	1	1	1	1	1	1	6
	Acyclovir; Foscarnet; Valacyclovir	0,5	1	1	0	1	1	4,5
	Cidofovir; Ganciclovir; Idoxuridine; Trifluridine; Valganciclovir	0,5	0,5	1	0	1	1	4
	Penciclovir	0,5	0,5	1	0	0	1	3
	Brincidofovir; Didanosine; Efavirenz; Favipiravir; Remdesivir; Sofosbuvir; Stavudine; Telbivudine; Zalcitabine	0	0	1	0	1	1	3
	Tenofovir	0,5	0	1	0	1	0	2,5
	Taribavirin; Ribavirin; Zidovudine	0	0	1	0	1	0	2
	Dapivirine; Rilpivirine	0	0	1	0	0	1	2
CPXV	Brincidofovir	1	0	1	0,75	1	1	4,75
	Acyclovir; Brivudine; Cidofovir; Didanosine; Efavirenz; Famciclovir; Favipiravir; Foscarnet; Ganciclovir; Idoxuridine; Remdesivir; Sofosbuvir; Stavudine; Telbivudine; Trifluridine; Vidarabine; Valacyclovir; Valganciclovir; Zalcitabine	0	0	1	0	1	1	3
	Taribavirin; Ribavirin; Tenofovir; Zidovudine	0	0	1	0	1	0	2
	Dapivirine; Penciclovir; Rilpivirine	0	0	1	0	0	1	2
VARV	Brincidofovir	1	0	1	0,75	1	1	4,75
	Acyclovir; Brivudine; Cidofovir; Didanosine; Efavirenz; Famciclovir; Favipiravir; Foscarnet; Ganciclovir; Idoxuridine; Remdesivir; Sofosbuvir; Stavudine; Telbivudine; Trifluridine; Vidarabine; Valacyclovir; Valganciclovir; Zalcitabine	0	0	1	0	1	1	3
	Taribavirin; Ribavirin; Tenofovir; Zidovudine	0	0	1	0	1	0	2
	Dapivirine; Penciclovir; Rilpivirine	0	0	1	0	0	1	2

B

BSA Score (+)ssRNA

Virus	BSA name	SAR	Phyl	TR	DDS	RoA	IP	Total
Ast-VA1	Favipiravir	1	1	1	0,25	1	1	5,25
	Ribavirin	1	1	1	0,25	1	0	4,25
DENV	Ivermectin	1	1	1	0,75	1	1	5,75
	Nitroprusside; Prochlorperazine	1	1	1	0,5	1	1	5,5
	ABMA; Posaconazole; Azauridine; Galidesivir; Amiodarone; Amodiaquine; GS-441524; Lanatoside C; Mandipine; Nelfinavir; Raloxifene; Saracatinib; Sofosbuvir;	1	1	1	0,25	1	1	5,25
	Ivermectin; Amantadine; Chloroquine	1	1	1	0,75	1	0	4,75
	Niclosamide; Sunitinib; Bortezomib; Erlotinib; Fenretinide; Lovastatin; Minocycline;	1	1	1	0,5	1	0	4,5
	Quinine; Fluvastatin; Itraconazole; Brequinar; Anisomycin; Betulinic acid; Glycyrrhizin; IFN-a; Minocycline; Ribavirin; IFN-g; Mitoxantrone; Topotecan; Anisomycin; Betulinic Acid; Chlorpromazine; Cyclosporine; Fluoxetine; GSK583; Halofunginone; Hydroxychloroquine; IFN-a; Luteolin; Metformin; Mycophenolic acid; Quinacrine; Ribavirin; Simvastatin; Anisomycin; Betulinic acid; Minocycline; Suramin;	1	1	1	0,25	1	0	4,25
	Labyrinthopeptin A1; Curcurbit[7]uril	1	1	1	0,25	0	1	4,25
	Fenretinide	1	1	1	0,5	0	0	3,5
	GSK717	1	1	1	0,25	0	0	3,25
HCV	Boceprevir; Daclatasvir; Sofosbuvir; Simeprevir	1	1	1	1	1	1	6
	Alisporivir	1	1	1	0,75	1	1	5,75
	IFN-a; Ribavirin	1	1	1	1	1	0	5
	Cyclosporine	1	1	1	0,75	1	0	4,75
	Mycophenolic acid; IFN-l; Suramin	1	1	1	0,25	1	0	4,25
	Tipranavir	0	0	0	0	1	1	2
ZIKV	Rilpivirine; Sofosbuvir	1	1	1	0,5	1	1	5,5
	Favipiravir; Efavirenz; Labyrinthopeptin A1; S416; Simeprevir; Salinphenylhalamide	1	1	1	0,25	1	1	5,25
	Lopinavir; Nitazoxanide; Novobiocin	1	1	1	0,5	1	0	4,5
	Clofazimine; Merimepodib; Niclosamide; Obatoclax; Gemcitabine; IFN-g; Mycophenolic acid; Quinacrine; Ribavirin; Teriflumonide; Brequinar; IFN-a; Anisomycin	1	1	1	0,25	1	0	4,25
	CR-31-B (–)	1	1	1	0,25	0	1	4,25

C

BSA Score ssRNA-RT

Virus	BSA name	SAR	Phyl	TR	DDS	RoA	IP	Total
HIV-1	Amprenavir; Atazanavir; Darunavir; Didanosine; Efavirenz; Emtricitabine; Etravirine; Indinavir; Lamivudine; Rilpivirine; Stavudine; Tipranavir; Zalcitabine; Dapivirine	1	1	1	1	1	1	6
	Telbivudine	1	1	1	0,75	1	1	5,75
	Nelfinavir; Lopinavir; Ritonavir; Saquinavir; Tenofovir; Zidovudine; Maraviroc	1	1	1	1	1	0	5
	Adefovir	1	1	1	0,75	1	0	4,75
	Racivir; Elvucitabine; Enoaxin; Raloxifene	0,5	1	1	0	1	1	4,5
	Lobucavir; Docosanol; Alisporivir; Vesatolimod; Tenatoprazole; Dyphylline; Indomethacin; Ilapraxole; Calanolide A; Lapachone; Emetine; Seliciclib	0	1	1	0	1	1	4
	Famciclovir; Fiacitabine	0,5	0,25	1	0	1	1	3,75
	Navitoclax; Gemcitabine	0,5	1	1	0	1	0	3,5
	Valacyclovir; Penciclovir; Irbesartan	0	0,25	1	0	1	1	3,25
	Memantine; Nitazoxanide; Ivermectin; Pentosan polysulfate; Cenicriviroc	0	1	1	0	1	0	3
	Inosine; Topotecan; Azacitidine; Sirolimus; Azithromycin; Chloroquine; Ezetimibe; Hydroxychloroquine; Tamoxifen; Brequinar; Sunitinib; Cyclosporine; Clozapine; Dasatinib; Lipoic acid; Trametinib; Leronlimab; IFN-a; IL-7; Thymalfasin; Minocycline; IFN-b; Suramin; Captothecin	0	1	1	0	1	0	3
HIV-2	Lamivudine	1	1	1	1	1	1	6
	Emtricitabine; Zalcitabine	1	0,5	1	1	1	1	5,5
	Lopinavir; Tenofovir; Ritonavir	1	1	1	1	1	0	5
	Adefovir	1	0,5	1	0,75	1	0	4,25
	Amprenavir; Darunavir; Didanosine; Indinavir; Elvucitabine	0,5	0,5	1	0	1	1	4
	Stavudine; Tipranavir	0	0,5	1	0	1	1	3,5
	Adefovir diproxil; Nelfinavir; Saquinavir	0,5	0,5	1	0	1	0	3
	Cenicriviroc; Azacitidine	0	1	1	0	1	0	3
HTLV-1	Amprenavir; Atazanavir; Dapivirine; Didanosine; Efavirenz; Emtricitabine; Etravirine; Indinavir; Ritonavir; Stavudine; Tipranavir; Zalcitabine; Racivir; Lamivudine; Elvucitabine; Dyphylline; Darunavir; Calanolide A; Lapachone; Seliciclib; Emetine	0	0,5	1	0	1	1	3,5
	Homoharringtonine	0	0,25	1	0	1	1	3,25
	IFN-b	0	1	1	0	1	0	3
	Lopinavir; Nelfinavir; Saquinavir; Tenofovir; Zidovudine; Inosine; Topotecan; Adefovir; Azacitidine; Leronlimab; Sirolimus; Brequinar; Chloroquine; Gemcitabine; IFN-a; Tamoxifen; Thymalfasin; Cyclosporine; Camptothecin; Dasatinib	0	0,5	1	0	1	0	2,5
	Raloxifene	0	0,5	0	0	1	1	2,5
	Adefovir diproxil; Bexarotene; IFN-l	0	0,25	1	0	1	0	2,25
	Navitoclax	0	0,5	0	0	1	0	1,5

D

BSA Score dsDNA-RT

Virus	BSA name	SAR	Phyl	TR	DDS	RoA	IP	Total
HBV	Lamivudine; Telbivudine; Valacyclovir	1	1	1	1	1	1	6
	Didanosine; Stavudine; Zalcitabine	1	0,25	1	1	1	1	5,25
	IFN-a; Adefovir dipivoxil; Tenofovir; Adefovir	1	1	1	1	1	0	5
	IFN-l	1	1	1	0,75	1	0	4,75
	Famciclovir; Ganciclovir; Elvucitabine; Racivir; Lobucavir	0,5	1	1	0	1	1	4,5
	AVN-944; Nitozoxanide; Foscarnet; Emtricitabine; Fiacitabine; Homoharringtonine	0	1	1	0	1	1	4
	Metformin; Amantadine	0,5	1	1	0	1	0	3,5
	Penciclovir	0,5	1	1	0	0	1	3,5
	Alisporivir	0	0,25	1	0	1	1	3,25
	Irbersartan; Merimepodib; Thymalfasin; Tilorone; Simvastatin; Inosine; Sirolimus; IL-7	0	1	1	0	1	0	3
	Vesatolimod	0	1	0	0	1	1	3
	Navitoclax	0	1	0	0	1	0	2

Table 4: Scoring of (-)ssRNA BC group. Shows results from the six-component BSA scoring system for (-)ssRNA.

BSA Score (-)ssRNA

Virus	BSA	SAR	Phyl	TR	DDS	RoA	IP	Total
LUJV	AVN-944; Benztropine; Favipiravir; Raloxifene; Amiodarone	1	1	1	0,25	1	1	5,25
	Ribavirin	1	1	1	0,75	1	0	4,75
	Brequinar; Mycophenolic acid; Niclosamide; Obatoclax; Tamoxifen; Apilimod; Toremifene	1	1	1	0,25	1	0	4,25
	Merimepodib	0,5	0,75	1	0	1	0	3,25
JUNV	Favipiravir	1	1	1	0,5	1	1	5,5
	Remdesivir	1	1	1	0,25	1	1	5,25
	Ribavirin	1	1	1	0,5	1	0	4,5
	Caffeine; Merimepodib; Sunitinib; Teriflumonide; Umifenovir; Sertraline; Amantadine; Leflumonide; Mycophenolic acid; Obatoclax; Amiloride; Brequinar; IFN-a; IFN-b; IFN-g	1	1	1	0,25	1	0	4,25
LASV	Favipiravir	1	1	1	0,5	1	1	5,5
	Amodiaquine; Tyrphostin AG1478	1	1	1	0,25	1	1	5,25
	Ribavirin	1	1	1	0,75	1	0	4,75
	Silvestrol; Amiloride; Sertraline; Umifenovir; Merimepodib; Mycophenolic acid	1	1	1	0,25	1	0	4,25
	CR-31-B (–); Remdesivir	1	1	1	0,25	0	1	4,25
	Umifenovir; Amantadine; Apilimod; Genistain; Niclosamide	1	1	1	0,25	1	0	4,25
	Obatoclax	1	1	1	0,25	0	0	3,25
MARV	Galidesivir	1	1	1	0,75	1	1	5,75
	Favipiravir	1	1	1	0,5	1	1	5,5
	Remdesivir	1	1	1	0,25	1	1	5,25
	Tilorone	1	1	1	1	1	0	5
	Amiloride; Apilimod	1	1	1	0,25	1	0	4,25
	Amodiaquine; Amiodarone	0	0,5	0	0	1	1	2,5
	Sunitinib	0	0,5	1	0	1	0	2,5
	IFN-b; IFN-g	0	0,5	1	0	0	0	1,5
	ABMA	0	0,5	0	0	0	1	1,5
	Artesunate; Azithromycin; Lovastatin; Merimepodib	0	0,5	0	0	1	0	1,5
RAVV	Galidesivir	1	1	1	0,25	1	1	5,25
	Favipiravir; Remdesivir	0,5	0,5	1	0	1	1	4
	Tilorone; Amiloride; Apilimod	0	0,5	1	0	1	0	2,5
	Amodiaquine	0	0,5	0	0	1	1	2,5
	IFN-b; IFN-g	0	0,5	1	0	0	0	1,5
	ABMA	0	0,5	0	0	0	1	1,5
	Amiodarone	0	0,5	0	0	1	1	2,5
	Sunitinib; Artesunate; Azithromycin; Lovastatin; Merimepodib	0	0,5	0	0	1	0	1,5
EBOV	Amodiaquine; Favipiravir; Amiodarone; Galidesivir; Remdesivir	1	1	1	0,75	1	1	5,75
	N4-Hydroxycytidine	1	1	1	0,5	1	1	5,5
	Clomiphene; Digitoxin; Tyrphostin AG1478; ABMA; DABMA; S416	1	1	1	0,25	1	1	5,25
	Tilorone	1	1	1	1	1	0	5
	Artesunate; IFN-b; Azithromycin; Erlotinib; Sunitinib	1	1	1	0,75	1	0	4,75
	Tamoxifen; Chloroquine	1	1	1	0,5	1	0	4,5
	Toremifene; Sertraline; Merimepodib; Fluvastatin; 25HC; Genistain; Lamivudine; Tetrandrine; Umifenovir; Verapramil; Zidovudine; Amiloride; Apilimod; Clomipramine; IFN-g; Nafamostat; Quinacrine	1	1	1	0,25	1	0	4,25
	Ribavirin	0,5	0,25	1	0	1	0	2,75
ANDV	Favipiravir; Vandetanib	1	1	1	0,25	1	1	5,25
	Baloxavir	0	0,75	1	0	1	1	3,75
HTNV	Baloxavir; Favipiravir	1	1	1	0,25	1	1	5,25
	Zidovudine; Amantadine; Regorafenib; Sorafeni	1	1	1	0,25	1	0	4,25
SNV	Favipiravir	1	1	1	0,25	1	1	5,25
	Ribavirin	1	1	1	0,25	1	0	4,25
	Baloxavir	0	1	1	0	1	1	4
HDV	Bulevirtide	1	1	1	1	1	1	6
	Adefovir; Ezetimibe; IFN-a; Lamivudine; Ritonavir; Ribavirin	1	1	1	0,75	1	0	4,75
	Taribavirin; Etanercept	1	1	1	0,5	1	0	4,5
	Irbesartan; Sirolimus; Suramin	1	1	1	0,25	1	0	4,25
CCHFV	Favipiravir	1	1	1	0,5	1	1	5,5
	CR-31-B (–)	1	1	1	0,25	1	1	5,25
	Ribavirin	1	1	1	0,75	1	0	4,75
	Chloroquine; Chlorpromazine; Silvestrol; Taribavirin; IFN-a; IFN-I	1	1	1	0,25	1	0	4,25
	Baloxavir	0	0,5	1	0	1	1	3,5
FLUAV	Baloxavir; Favipiravir; Oseltamivir; Triazavirin; Zanamivir	1	1	1	1	1	1	6
	Dyphillin; Kasugamycin; Molnupiravir; Saliphenylhalamide	1	1	1	0,5	1	1	5,5
	Camostat; Dapivirine; Esomeprazole; Foscarnet; S416; Selenazofurin	1	1	1	0,25	1	1	5,25
	Amantadine; Umifenovir; Acetylsalicyclic acid; Azithromycin; Ingavirin; Rimantadine	1	1	1	1	1	0	5
	Chloroquine; Clarithromycin; Inosine; IFN-a; IFN-b; Ribavirin; Sirolimus	1	1	1	0,75	1	0	4,75
	Adefovir; Amitriptyline; Diltiazem; Eptifibatide; Etanercept; Flavopridol; Genistain; Itraconazole; Metformin; Monensin; Navitoclax; Reservastrol; Salinomycin; Verdinextor; Eucalyptol; Fenofibrate; PUL-042	1	1	1	0,5	1	0	4,5
	Caffeine; Nafamostat; Obatoclax; Saquinavir; Azacitidine; Berberine; Betulinic acid; Bortezomib; Brequinar; Camptothecin; Cyclosporine; Emodin; Fluvastatin; Gemcitabine; Glycyrrhizin; IFN-l; Luteolin; Memantine; Mycophenolic acid; Nelfinavir; Nitazoxanide; Niclosamide; Pentosan polysulfate; Podofilox; Querectin; Quinine; Regorafenib; Silvestrol; Simvastatin; Sorafenib; Taribavirin; Teicoplanin; Teriflumonide; Thapsigargin; Topotecan; Trametinib; Vemurafenib; Verapamil; Emetine	1	1	1	0,25	1	0	4,25
	Lovastatin	0,5	0,25	0	0	1	0	1,75
HENV	Gossypol; Ivermectin	1	1	1	0,25	1	0	4,25
NiV	Remdesivir; Favipiravir	1	1	1	0,5	1	1	5,5
	25HC; Bortezomib	1	1	1	0,25	1	0	4,25
HPIV	GS-441524	1	1	1	0,5	1	1	5,5
	Zanamivir; AVN-944	1	1	1	0,25	1	1	5,25
	Ingavirin	1	1	1	1	1	0	5
	Inosine	1	1	1	0,75	1	0	4,75
	Suramin; Glycyrrhizin; IFN-b; Lovastatin; Merimepodib; Querectin; Ribavirin	1	1	1	0,25	1	0	4,25
MeV	Inosine	1	1	1	0,75	1	0	4,75
	Amiloride; Navitoclax; Nitazoxanide; Ribavirin	1	1	1	0,25	1	0	4,25
LACV	Baloxavir	1	1	1	0,25	1	1	5,25
	Favipiravir	0	0,25	1	0	1	1	3,25
BUNV	Saliphenylhalamide	1	1	1	0,25	1	1	5,25
	Navitoclax	1	1	1	0,25	1	0	4,25
	Favipiravir	0	0,25	1	0	1	1	3,25
RVFV	Favipiravir	1	1	1	0,5	1	1	5,5
	Selenazofurin; Oritavancin; Galidesivir	1	1	1	0,25	1	1	5,25
	Ribavirin; Sirolimus	1	1	1	0,5	1	0	4,5
	Monensin; Bortezomib; Emetine; Cyclosporine; Minocycline; Ritonavir; Suramin; Azacitidine; Ezetimibe	1	1	1	0,25	1	0	4,25
SFTSV	Favipiravir	1	1	1	0,75	1	1	5,75
	Hexachlorophene; Baloxavir	1	1	1	0,25	1	1	5,25
	Nifedipine	1	1	1	0,75	1	0	4,75
	Regorafenib; Bortezomib; Fludarabine; IFN-a; IFN-b; IFN-g; Ribavirin	1	1	1	0,25	1	0	4,25
PTV	Taribavirin; IFN-a	1	1	1	0,25	1	0	4,25
	Favipiravir; Baloxavir	0	1	1	0	1	1	4
HMPV	Oritavancin; Remdesivir	1	1	1	0,25	1	1	5,25
	Ribavirin; Itraconazole; Lopinavir	1	1	1	0,5	1	0	4,5
	Monensin; Azacitidine; Emetine; Ingavirin; Nitazoxanide; Obatoclax	1	1	1	0,25	1	0	4,25
RSV	4'-Fluorouridine	1	1	1	0,5	1	1	5,5
	AVN-944; Docosanol; Remdesivir	1	1	1	0,25	1	1	5,25
	Ribavirin	1	1	1	1	1	0	5
	Azithromycin; Clarithromycin	1	1	1	0,75	1	0	4,75
	Resveratrol	1	1	1	0,5	1	0	4,5
	Fenretinide; Monensin; Salinomycin; Sunitinib; Thapsigargin; Verdinextor; Berberine; Bortezomib; IFN-a; Lovastatin; Merimepodib; Mycophenolic acid; Niclosamide; Nitazoxanide; Querectin	1	1	1	0,25	1	0	4,25

5 Discussion

Effective BSA therapy elaboration, ready for clinical trials, is an essential step in preparedness once a new emergent strain is introduced. However, the path from discovery to approval is often time-consuming and costly. An attractive solution is drug repositioning, which offers a low-cost and rapid approach to combat emergent viruses. The initial phase, explorative discovery studies, allows the identification of promising antivirals with broad activity against several viruses. For drug repositioning steps to be reachable, accurate and readily available data are crucial.

The BSA landscape and scientific data on antiviral activity have expanded markedly during the past years. A major provocation of this growth is the recent SARS-CoV-2 pandemic. Tools available for summarizing and organizing such viral research are currently underprovided. Therefore, integrative, explorative, and user-friendly bioinformatic tools are urgently needed to handle all this available material. For these reasons, my research group developed the DrugVirus.info database. The database was intended to combine BSA activity to promote discovery and development of novel BSAs.

This initial database was restricted to only a few safe-in-man BSAs. Expansion of the novel Drugvirus.info database allowed the exploration of both BSAs and BSA-containing combinations (BCC). The database further permits analysis of user-provided antivirals, allowing researchers to calculate BSA efficacy and toxicity from raw data. From these measurements, the database calculates the SI and DSS, which is excellent methods for illustrating antiviral activity. These amendments would further provoke the discovery and development of novel BSAs and revealing new insights into BSA-virus interactions and underlying mechanisms that determine the pan-and cross family activities.

There are some limitations associated with the information curated within the database. Both BCCs and BSA database are manually curated by two master students, leading to low coverage of the existing data. The BSA database included manual curation of published scientific papers. A major hurdle when collecting antiviral efficacy and cytotoxicity studies were the lack of available parameters. For instance, some papers did not include cytotoxicity measurements and SI could therefore not be calculated.

EC_{50} measurements alone cannot explain the extent of antiviral activity. Several parameters affect EC_{50} values, such as assay method, number of replicates and the cell line used. Also, papers use different terminologies of cytotoxicity measurements, as for instance, cytotoxicity of cell morphology (MCC) (122), median cytotoxic, lethal or toxic dose (CD_{50}, LD_{50}, TC_{50}) (123, 124). For curation, all relevant cytotoxicity and antiviral efficacy measurements were used to calculate the SI, independent of thermology used to denote the measures. Thus, the correlation might be inconsistently represented for a BSA

against the same virus and cell line. For these reasons, the database is highly reliant on other researchers´ contributions, which would together strengthen the database output and reliability.

Both positive and negative monotherapy results were gathered. However, a relatively low SI was used as cut-off values. Indeed, a higher SI reflect the approaching drug as more accurate and effective in treatment. For instance, a SI on more than 10 have been recommended when evaluating the therapeutic value of medications. If the SI are between 1 and 10, a re-evaluation of the activity is suggested for validation (113, 114). Therefore, several BSAs regarded with positive activities in this thesis would need further confirmations. Also, several papers had contradicting measurements, where the same BSA against a certain virus were reported with both positive and negative antiviral activity. Therefore, new tests should be applied to reconsider the extent of BSA activity (106).

This initial collection of BSA activity was intended to act as a starting point to invite other researchers' contributions. Researchers are encouraged to report new safe-in-man BSAs or novel activity of existing BSAs, which will be updated on request by the website. A suggesting approach would be to invite researchers to incorporate their raw data into the database by request. This would further expand the BSA database, but also increase the reliability from already available information.

Drug repositioning aims to search for BSAs with new indications. Therefore, methods for identifying the most promising BSAs out of thousands is crucial in viral pandemic preparedness. For these reasons, my research group developed a new method for selecting the most promising BSAs within our database. Based on BSA-target relevance, routes of administration, phylogeny- and structure-activity relationship (SAR), and immunomodulatory property evaluation, promising broadly effective antiviral therapies were enlightened.

BSA host and viral targets were evaluated as additional information of BSA-target relevance. A large pool of BSA targets were identified, which could potentially lead to the discovery of new BSA activities. By comparing BSA targets with common virus strategies, new therapeutic alternatives can be applied to a broader range of viruses.

Database searches revealed that most of the BSAs within our database have some specified targets, whereas many showed to be important for viral pathogenesis. This included both host-and viral directed BSAs. Results showed that the pool of host-directed BSAs is remarkably larger than BSAs with viral-directed activity. Thus, underlying larger opportunities for host-directed BSA drug repositioning. Indeed, host-directed BSA repositioning has gained increasing attention following the SARS-CoV-2 pandemic (59, 125). Even though host-directed BSAs are indicated with less appearance of drug

resistance, they generate a higher risk of toxicity. Illustrating this example, most of the approved antivirals´ primary targets are viral factors (Table 1).

Interestingly, the identified overlapping host and viral targets would also be valuable when evaluating BCCs. Drugs with the same mode of action, such as nucleoside or nucleotide analogs, cannot be taken together due to the generation of toxicity. Therefore, BSAs with unique mode of action, which targets same replication strategy, is often given in BCCs. BCC target interactions and mode of action are evaluated in Ianevski et al., Mono- and combinational drug therapies for global viral pandemic preparedness, 2022.

However, many BSAs within our database do not have any defined targets. Several BSAs also appeared with only minor or uncertain target information. Therefore, further research is needed on BSA-directed activities and their targets.

BSAs targeting host-directed factors were commonly associated with immunomodulatory activities of those targets. Examination of immunomodulatory properties revealed several immunostimulatory and immunosuppressive BSAs. Also, many BSAs have major roles in the inflammatory pathways. There is a narrow definition of immunomodulators. Weakly stimulatory or suppressive medications of the immune system are all defined as immunomodulatory. These BSAs can be expected with less severe effects than potent immunomodulators. Also, medications that act directly on the inflammatory pathway (anti- or pro-inflammatory BSAs) and immunomodulators are in some cases used incomprehensibly. Accordingly, further evaluation of immunomodulatory properties is required.

SAR and phylogeny analysis were used as a component within our scoring system. SAR analysis revealed several new BSA candidates with structural similarities to BSAs within our database (Figure 16C). These are compounds yet not explored as BSAs. To exemplify this, the HIV-1 approved BSA, etravirine, where found to be structural similar to alflutinib. Alflutinib are therefore anticipated with antiviral activity against HIV. Furthermore, phylogenetic analysis of drug-virus interactions revealed that several BSAs target viruses within same viral families (Figure 17). Interestingly, several BSAs within our database were only tested against a few viruses from these families. HIV and HTLV-1 are both within *Retroviridae* family of viruses, which both encode reverse transcriptase. Etravirine can therefore be expected with activity against HTLV-1. Accordingly, SAR and phylogenetic analysis exemplify approaches for expanding the BSA activity landscape and would be valuable in further exploration of potential novel BSA activities.

BSA components were used to generate a scoring system, which made it possible to give each inspected BSA activity an individual score. This score reflects BSA potential, whereas a high score mirrors promising BSA candidates. Interestingly, favipiravir has recently been

approved for treating Influenza A, B, and C (Table 1). Favipiravir gained the highest score for (-)ssRNA viruses, including for treating FLUAV (Table 4). Thus, the BSA scoring system illustrates clinical applicability. Similar, baloxavir marboxil is approved for treating FLUAV. Baloxavir Marboxil also gained high scores for several (-)ssRNA viruses, including FLUAV. Furthermore, rilpivirine is currently approved for treating HIV-1 (Table 1). In our scoring system, rilpivirine gained high scores for ZIKV in (+)ssRNA BC group and HIV-1 (Table 3). Indeed, this designate that BSAs with high scores from our scoring system can be interesting treatment strategies.

However, many of the scored BSAs have only been tested *in vitro*, which lowered the overall BSA score. This scoring restriction, together with limited information on immunomodulators and route of administration, has influenced the scoring system´s prediction capacity. For example, most of the BSAs gained full scores for RoA component. This is because many viruses have a complex diseased system, and thus, a variety of RoA could be applied. Further, both the lack of information and the conflicting info on immunomodulators had an impact on the final score.

The most promising BSAs from our six-component BSA scoring system was further investigated in combinations. This resulted in investigation of several promising BSA combinations, which can be retrieved within our first publication, Table 1, Ianevski et al., Mono- and combinational drug therapies for global viral pandemic preparedness, 2022 (46). The proposed BSAs and BCCs would further need to be evaluated *in vitro* and *in vivo* as preparation for entering clinical trials.

In vitro tested monotherapies (Supplementary Table S.2.1 and S.2.3) together with promising BSAs from the scoring system (Table 3 and 4) of already approved BSAs (Table 1) were evaluated for further prediction of promising BSA activities. However, only some BSAs had a SI > 10. This includes, trifluridine and vidarabine against CPXV and simeprevir against ZIKV. BSAs with a SI between one and ten would need further evaluation and testing for justification of BSA activities.

BSA activities stand as a baseline for the development of BCCs. BCCs would increase the overall treatment effectiveness by the generation of synergistic effects, enabling maximal efficacy of the treatment. Also, BCCs reduce the individual drug dosage, which would lower potential toxicity and the likelihood of adverse effects. Therefore, immunomodulatory or host-directed BSAs in BCCs could reduce common adverse effects associated with these BSA features. Further, monotherapies are not always effective against poorly characterized viruses or re-emergent viral strains. For these reasons, BCCs are more frequently observed as a successful treatment strategy.

6 Further perspectives and Conclusions

Drug repositioning remains an efficient and realistic way of developing antivirals. Within my research group, we have developed a scoring system and expanded the available Drugvirus.info database (Drugvirus.info 2.0). The BSA scoring system prioritizes the development of promising BSAs, out of thousands of present BSAs. It familiarizes central BSA activity components, such as drug targets, immunomodulatory properties, route of administration, Phylogeny and structure-activity relationship, and developmental status. The Drugvirus.info 2.0 database provides available BSA and BCC activities and allows interactive analysis of a user own´s measures, for comparison with available published mono- and combinational- therapies. Both projects would assist drug repositioning steps, as preparation for new emergent viral strains by the identification of novel treatment strategies.

Although BCCs have a higher frequency of success due to reduced toxicity and broader antiviral activity, BSA discovery and exploration are crucial for revealing effective BCCs.

Further work includes *in vitro* and *in vivo* examination of high-hits BSAs from the scoring system. Also, regular updates and annotations of the drugvirus.info database are required to remain a comprehensive and up-to-date BSA and BCC database.

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Supplementary

S.1 Virus abbreviations

Table S.1: Virus abbreviations. Table shows virus abbreviations and complete virus name for all viruses mentioned in this master´s thesis.

AHFV	Alkhurma Hemorrhagic Fever virus	HHV	Human herpesvirus
ANDV	Andes virus	HIV	Human immunodeficiency virus
Ast-VA1	Astrovirus VA1	hPiV	Human parainfluenza virus
B19B	Parvovirus B19	HPV	Human papillomavirus
BKPyV	BK polyoma virus	hRhV	Human rhinoviruses
BUNV	Bunyamwera virus	hRoV	Human rotavirus
BVDV	Bovine viral diarrhea virus	HSV	Herpes simplex virus
CCHFV	Crimean-Congo hemorrhagic fever virus	HTLV	Human T-lymphotropic virus
cPIV	Canine parainfluenza virus	HTNV	Hantaan virus
CPXV	Cowpox virus	IBV	Infectious bronchitis virus
CV	Coxackie virus	JCPyV	JC polyoma virus
DENV	Dengue virus	JEV	Japanese encephalitis virus
EBOV	Ebola virus	JUNV	Junín virus
EBV	Epstein-Barr virus	KFDV	Kyasanur Forest Disease virus
EV	Human enterovirus	KSHV	Kaposi´sarcoma-associated herpesvirus
fCoV	Feline coronavirus	LACV	La Crosse encephalitis virus
FLUAV	Influenza A	LASV	Lassa mammarenavirus
FLUBV	Influenza B	LCMV	Lymphocytic choriomeningtitis virus
fLV	Feline leukemia virus	MARV	Marburg virus
FMDV	Foot-and-mouth disease virus	MCMV	Mouse cytomegalovirus
hAdV	Human adenovirus	MERS-CoV	Middle-east respiratory syndrome coronavirus
HBV	Hepatitis B virus	MeV	Measles morbillivirus
HCMV	Human cytomegalovirus	MHV	Murine coronavirus
hCoV-229E	Human coronavirus 229E	MHV-68	Murine gamma herpesvirus-68

hCoV-OC43	Human coronavirus OC43	MPXV	Monkeypox virus
HCV	Hepatitis C virus	MSV	Maize Steak virus
HDV	Hepatitis D virus	MuV	Mumps virus
HeV	Hendra virus	NiV	Nipah virus
OHFV	Omsk Hemorrhagic Fever virus	SARS-CoV	Severe-acute respiratory syndrome coronavirus
ORFV	Orf virus	SFTSV	Severe fever with thrombocytopenia syndrome virus
pCoV	Pangolin coronavirus	SFV	Semliki Forest virus
PICV	Pichinde virus	SINV	Sindbis virus
PoV	Poliovirus	SIV	Simian immunodeficiency virus
POWV	Powassan virus	SNV	Sin Nombre virus
PRRSV	Porcine reproductive and respiratory syndrome virus	SUDV	Sudan ebolavirus
RABV	Rabies virus	TBEV	Tick born encephalitis virus
RAVV	Ravn virus	VEEV	Venezuelan equine encephalitis virus
RRV	Rhadinovirus	WEEV	Wester equine encephalitis virus
RSV	Respiratory syncytial virus	WNV	West Nile virus
RVFV	Rift-walley fever virus	YFV	Yellow fever virus

S.2 DrugVirus.info database

Table S.2.1: Published monotherapies. Table shows all published monotherapies gathered, obtainable with virus target, cell line, antiviral efficacy, cytotoxicity, and selectivity index.

DrugName		Virus	Cell line	Antiviral efficacy	Cytotoxicity	SI or TI	PMID
25HC		hRoV	MA104	0.16uM (0.12-0.2	>150uM	>938	30212801
		hRoV	MA104	0.09uM (0.08-0.1	>150uM	>1667	30212801
		hRoV	MA104	0.12uM (0.09-0.1	>150uM	>1250	30212801
		hRoV	MA104	0.11uM (0.07-0.1	>150uM	>1364	30212801
		hRoV	MA104	0.27uM (0.14-0.5	>150uM	>556	30212801
		hRoV	Caco2	0.19uM (0.14-0.2	>150uM	>789.	30212801
		hRoV	Caco2	0.25uM (0.20-0.3	>150uM	>600.	30212801
		hRoV	Caco2	0.42uM (0.36-0.4	>150uM	>357.	30212801
		hRoV	Caco2	0.21uM (0.16-0.2	>150uM	>714.	30212801
		hRoV	Caco2	0.43uM (0.29-0.6	>150uM	>349.	30212801
		SARS-CoV-2	Vero	3.675uM	>400uM	108.	32811977
		SARS-CoV-2	MA104	1.49uM (+-1.09-1	239uM	160	33239446
		VSV	HEK293T	1uM	10uM	10.	23273844
4'-Fluorouridine		RSV	Hep-2	0.8235uM	1726uM	2,095.	34855509
		RSV	Hep-2	0.8877uM	1726uM	1,944.	34855509
		RSV	Hep-2	0.6616uM	1726uM	2,608.	34855509
		RSV	HAE	1.204uM	169uM	140.4	34855509
		SARS-CoV-2	HAE	0.1624uM	169uM	1,040.	34855509
		SARS-CoV-2	HAE	0.5689uM	169uM	297.1	34855509
		SARS-CoV-2	HAE	0.4579uM	169uM	369.1	34855509
ABMA		EBOV	HeLa	3.3uM	>200uM	60.6.	29138439
		HSV-2	Vero	1.66uM (+-0.14)	34.75uM (+-	20.93	29522484
		RABV	BSR	19.8uM	>150uM	>7.5	33444703
		RABV	BSR	>30uM	>150uM	>5.	33444703
		RABV	HeLa	19.4uM	>200uM	10.3.	29138439
ABT-737		FLUAV	RPE	0.28uM	0.35uM	1.25.	28946654
		LCMV	A549	0.40uM	19.95uM	49.38	34586865
Acetylsalicylic acid		hAdV-5	HEp-2	>1000uM	3,510uM	3.51.	27542891
		CV-9	BGM	980uM	4,380uM	4.5.	27542891
		CV-9	BGM	780uM	4,380uM	5.6.	27542891
		CV-9	BGM	810uM	4,380uM	5.4.	27542891
		FLUAV	MDCK	660uM	6,870uM	10.4.	27542891
		FLUAV	MDCK	720uM	6,870uM	9.54.	27542891
		FLUAV	MDCK	870uM	6,870uM	7.9.	27542891
		hRhV-14	HeLa	210uM	4,060uM	19.3.	27542891
		hRhV-14	HeLa	200uM	4,060uM	20.3.	27542891
		hRhV-14	HeLa	90uM	4,060uM	45.1.	27542891
		hRhV-1A	HeLa	>_1000uM	5,250uM	5.25.	27542891
		hRhV-2	HeLa	690uM	5,250uM	7.6.	27542891
		hRhV-2	HeLa	880uM	5,250uM	6.0	27542891
		hRhV-2	HeLa	660uM	5,250uM	8.0	27542891
		hRhV-39	HeLa	260uM	5,250uM	20.2.	27542891
		hRhV-39	HeLa	100uM	5,250uM	52.5.	27542891
		hRhV-39	HeLa	250uM	5,250uM	21.	27542891
		HSV-1	HEp-2	>1000uM	3,950uM	3.95.	27542891
		RSV	HEp-2	>_1000uM	3,510uM	3.51.	27542891
		SARS-CoV-2	VeroE6	12.16uM	1255uM	103.21	33291642
Acyclovir		CPXV	Vero	>133.2uM	>444uM	3.33.	16530858
		CPXV	Vero	>133.2uM	>444uM	3.33.	16530858
		EBV	HFF	6.6uM (+-2.0)	>444uM	67.3.	15728900
		EBV	HFF	31.97uM	>444uM	13.9.	8147583
		EBV	P3HR-1	6.22uM	>444uM	>70	9875407
		EBV	P3HR-1	4.04uM	>444uM	>70	9875407
		EBV	P3HR-1	4.0uM (+-0.4)	911uM (+-85	228.	25267682
		HCMV	MRC-5	84.4uM	>444uM	5.3.	9661001
		HHV-6A	CBMC	31.1uM	>888uM	28.6.	9864048
		HHV-6A	CBMC	22.2uM	>888uM	40.	9864048
		HHV-6B	CBMC	177.6uM	>888uM	5.	9864048
		HHV-6B	CBMC	35.5uM	>888uM	25.	9864048
		HHV-6B	CBMC	115.5uM	>888uM	7.7.	9864048
		HHV-6B	CBMC	88.8uM	>888uM	10.	9864048
		HHV-7	CBMC	>499uM	>888uM	1.8.	9864048
		HHV-7	CBMC	>499uM	>888uM	1.8.	9864048
		HHV-7	CBMC	>499uM	>888uM	1.8.	9864048
		HSV	MRC-5	315.3uM	>444uM	1.4.	9661001
		HSV	MRC-5	390.7uM	>444uM	1.1.	9661001
		HSV	OMK	182uM (+-80)	>900uM	>5	25267682
		HSV-1	MRC-5	0.143uM	>4440uM	31,048.	7822458
		HSV-1	MRC-5	0.133uM	>4440uM	33,383.	7822458
		HSV-1	HFF	0.89uM	>444uM	498.8.	8147583
		HSV-1	HFF	2.5uM	>444uM	177.6.	8147583
		HSV-1	HFF	0.89uM	>444uM	498.9	8147583
		HSV-1	HFF	146.5uM	>444uM	3.03.	8147583
		HSV-1	HFF	>444uM	>444uM	>1.	8147583
		HSV-1	HFF	284.2uM	>444uM	1.56.	8147583
		HSV-1	HFF	>444uM	>444uM	>1.	8147583
		HSV-1	Vero	8.3uM	1509.7uM	181.9.	8629816
		HSV-1	Vero	117.2uM	1509.7uM	12.9.	8629816
		HSV-1	Vero	11.6uM	1509.7uM	130.1.	8629816
		HSV-1	Vero	>444uM	1509.7uM	3.4.	8629816
		HSV-1	MRC-5	0.27uM	>444uM	1,644.	8707740
		HSV-1	MRC-5	3.1uM	>444uM	143.2.	8707740
		HSV-1	MRC-5	2.66uM	>444uM	166.9.	8707740
		HSV-1	HEL	3.92uM	386.31uM	98.5.	9661001
		HSV-1	MRC-5	1.2uM	>444uM	370.	9661001
		HSV-1	MRC-5	0.98uM	>444uM	453.1.	9661001
		HSV-1	Vero	0.60uM	913.04uM	1521.71	10967475
		HSV-1	Macrophag	0.0025uM	>_20uM	>8000.	11521752
		HSV-1	HFF	2.5uM (+-1.3)	>444uM	177.6.	16127046
		HSV-1	HFF	2.8uM (+-1.2)	>444uM	158.6.	16127046
		HSV-1	HFF	3.8uM (+-0.4)	>444uM	116.8.	16127046
		HSV-1	Vero	1.09uM (+-0.25)	960uM (+-15	880.	16321530
		HSV-1	HFF	1.55uM	>444uM	286.5.	16530858
		HSV-1	HFF	>444uM	>444uM	>1.	16530858
		HSV-1	Vero	0.99uM (+-0.04)	860uM (+-58	868.	17931712
		HSV-1	Vero	5.8uM (+-0.3)	860uM (+-58	149.	17931712
		HSV-1	Vero	11.8uM	509.4uM	61.9.	22921079
		HSV-1	Vero	7.1uM	509.4uM	81.3.	22921079
		HSV-1	Vero	11.54uM (+-0.8)	561.7uM (+-	48.67	29752114
		HSV-1	HEL	0.27uM (+-0.12)	>250uM (M(	925.9.	30497281
		HSV-1	HEL	0.50uM (+-0.14)	>250uM (M(	500.	30497281
		HSV-1	HEL	3.25uM (+-1.77)	>250uM (M(	76.9.	30497281
		HSV-1	HFL1	1.1uM (+-0.7)	1287uM (+-2	1170.	31634495
		HSV-1	HFF	6.9uM (+-1.3)	>444uM	64.3	15728900
		HSV-2	MRC-5	0.423uM	>4,440uM	10,496.	7822458
		HSV-2	MRC-5	0.342uM	>4,440uM	12,982.	7822458
		HSV-2	HFF	2.66uM	>444uM	166.9	8147583
		HSV-2	HFF	1.33uM	>444uM	333.8.	8147583
		HSV-2	HFF	1.78uM	>444uM	249.4.	8147583
		HSV-2	HFF	0.88uM	>444uM	504.5.	8147583
		HSV-2	HFF	1.33uM	>444uM	333.8.	8147583
		HSV-2	HFF	1.78uM	>444uM	249.4.	8147583
		HSV-2	HFF	1.73uM	>444uM	256.6.	8147583
		HSV-2	HFF	57.7uM	>444uM	7.7.	8147583
		HSV-2	HFF	>444uM	>444uM	>1.	8147583
		HSV-2	HFF	>444uM	>444uM	>1.	8147583
		HSV-2	HEL	2.66uM	386.31uM	150.	9661001
		HSV-2	MRC-5	1.11uM	>444uM	400.	9661001
		HSV-2	MRC-5	1.64uM	>444uM	270.7.	9661001
		HSV-2	MRC-5	1.33uM	>444uM	333.8.	9661001
		HSV-2	Vero	0.90uM	914.04uM	1014.49	10967475
		HSV-2	HFF	4.4uM (+-2.8)	>444uM	100.9.	16127046
		HSV-2	HFF	4.4uM (+-0.4)	>444uM	100.9.	16127046
		HSV-2	HFF	4.4uM (+-0.6)	>444uM	100.9.	16127046
		HSV-2	Vero	1.4uM (+-0.1)	860uM (+-58	620.	17931712
		HSV-2	Vero	7.99uM	577.2uM	72.2.	22921079
		HSV-2	Vero cells	0.82uM (+-0.06)	>1,000uM	1219.51	29522484
		HSV-2	Vero	12.88uM (+-0.6)	561.7uM (+-	43.61	29752114
		HSV-2	HEL	0.14uM (+-0.10)	>250uM (M(	1,785.	30497281
		HSV-2	HEL	0.50uM (+-0.14)	>250uM (M(	500.	30497281
		HSV-2	HFF	5.9uM (+-1.3)	>444uM	75.3.	15728900
		KSHV	BCBL-1	137uM (+-44)	533uM (+-18	4.	25267682
		KSHV	BCBL-1	>_75uM	>_690uM	>_9.2	9420052
		KSHV	BCBL-1	31.00uM (+-9.00	533uM (+-18	17.2.	12904413
		MHV-68	NIH3T3	9uM (+-7)	98uM (+-62)	11	25267682
		RRV	RF	809uM (+-116)	560uM (+-28	<1	25267682
		VACV	HEL	>250uM	>250uM (M(	>1.	30497281
		VZV	HEL	1.6uM	424uM (+-21	265	33479570
		VZV	HFF	2.66uM	>444uM	166.92.	8147583
		VZV	HFF	11.98uM	>444uM	37.1.	8147583
		VZV	HFF	3.92uM	>444uM	113.3.	8147583
		VZV	HFF	3.92uM	>444uM	113.3.	8147583
		VZV	HFF	3.55uM	>444uM	125.1.	8147583
		VZV	HFF	32.85uM	>444uM	13.5.	8147583
		VZV	HFF	102.13uM	>444uM	4.4.	8147583
		VZV	HEL	15.1uM	386.31uM	26.	9661001
		VZV	MRC-5	5.33uM	>444uM	83.	9661001
		VZV	HEL	1.33uM	386.31uM	290.5	9661001
		VZV	HFF	3.6uM (+-2)	>444uM	123.3.	16127046
		VZV	HEL	3.42uM (+-2.25)	>440uM	128.7	30497281
		VZV	HEL	115uM (+-68)	>440uM	3.8.	30497281
		VZV	HEL	2.23uM (0-2.16)	>440uM	197.	30497281
		VZV	HEL	98uM (+-61)	>440uM	4.5.	30497281
		VZV	HEL	22.15uM (+-11.6	424uM (+-21	19	33479570
		VZV	HFF	8.6uM (+-5.0)	>444uM	51.6.	15728900
Adefovir		HCMV	HEL	100uM	56uM	<1.	14584956
		HCMV	HEL	270uM	56uM	<1.	14584956
		CPXV	HFF	>300uM	>366uM (+-0	1.22.	12615301
		EBV	P3HR-1	12.1uM	366uM	30.	9875407
		EBV	P3HR-1	4.4uM	366uM	83.	9875407
		HIV-1	MT-2	1.1uM (+-0.6)	157uM (+-54	143.	16630664
		HIV-1	CEM	3.3uM	56uM	16.9.	14584956
		HIV-2	CEM	6.6uM	56uM	8.5.	14584956
		HSV-1	E6SM	24uM	56uM	2.3.	14584956
		HSV-2	E6SM	>170uM	56uM	<1.	14584956
		KSHV	BCBL-1	39uM (+-30)	82uM (+-12)	2.1.	9420052
		MSV	Murine C3H	56uM	56uM	1.	14584956
		VACV	HFF	>300uM	>366uM (+-0	1.22.	12615301
		VACV	E6SM	2.2uM	56uM	25.5.	14584956
		VZV	HEL	30uM	56uM	1.9.	14584956
		VZV	HEL	35uM	56uM	1.6.	14584956
Adefovir dipivoxil		CPXV	HFF	13uM	117uM (+-27	9.	12615301
		CPXV	Vero	150.5uM	>199uM	1.3.	12615299
		CPXV	LLC-MK2	171.5uM	>199uM	1.2.	12615299
		HBV	HepG2.2.2.	3090uM	438,920uM	142.04	31301948
		HBV	HepG2.2.2.	0.517uM	540uM	1044.	17074481
		HBV	HepG2.2.2.	1671uM	1104.10uM	<1.	22127069
		HBV	HepG2.2.2.	1570uM	1104.10uM	<1.	22127069
		HBV	HepG2.2.2.	169uM	1104.10uM	6.5.	22127069
		HBV	HepG2.2.2.	0.96uM	471.1uM	490.74	22305613
		HBV	HepG2.2.2.	30,090uM	1,995,000uM	66.3	22264474
		HBV	HepG2.2.2.	296,000uM	1,995,000uM	6.7.	22264474
		HBV	HepG2.2.2.	266,000uM	1,995,000uM	7.5.	22264474
		HBV	HepG2.2.2.	0.33uM	555uM	1680.	19889538
		HBV	PXB	0.88uM (+-0.15)	71.5uM (+-1	81.	32084506
		HIV-1	PXB	0.66uM (+-0.20)	71.5uM (+-1	108.3.	32084506
		MPXV	Vero	>199uM	>199uM	1.0.	12615299
		MPXV	LLC-MK2	>199uM	>199uM	1.0.	12615299
		VARV	Vero	167.9uM	>199uM	1.2.	12615299
		VARV	LLC-MK2	>199uM	>199uM	1.0.	12615299
		VARV	Vero	>199uM	>199uM	1.0.	12615299
		VARV	LLC-MK2	>199uM	>199uM	1.0.	12615299
		VARV	Vero	179.5uM	>199uM	1.1.	12615299
		VARV	LLC-MK2	169.5uM	>199uM	1.2.	12615299
		VACV	HFF	5.1uM	117uM (+-27	22.9.	12615301
		VACV	Vero	87.7uM	>199uM	2.3.	12615299
		VACV	LLC-MK2	132uM	>199uM	1.5.	12615299

Alisporivir		SARS-CoV-2	VeroE6	0.46uM (+-0.04)	>20uM	>43.	32376613
		hCoV-229E	Huh7	1.37uM	280.1uM	204.5	31634494
Amantadine		EV-5	Vero	6.6uM	>660uM	>100.	21345236
		FLUAV	MDCK	0.7uM	625uM (+-21	892.	12367731
		FLUAV	MDCK	0.5uM	625uM (+-21	1250.	12367731
		FLUAV	MDCK	1.3uM	625uM (+-21	480.	12367731
		FLUAV	MDCK	0.6uM	625uM (+-21	1041.	12367731
		FLUAV	MDCK	1.8uM	625uM (+-21	342.	12367731
		FLUAV	MDCK	3.0uM	625uM (+-21	208.	12367731
		FLUAV	MDCK	1.0uM	625uM (+-21	625.	12367731
		FLUAV	MDCK	0.32uM	1200uM (+-5	3,750.	12367731
		FLUAV	MDCK	0.35uM	700uM (+-34	2,000.	12367731
		FLUAV	MDCK	1.1uM	610uM (+-90	554.5.	12367731
		FLUAV	MDCK	0.6uM	480uM (+-75	800.	12367731
		FLUAV	MDCK	1.0uM	490uM (+-65	490.	12367731
		FLUAV	MDCK	2.0uM	505uM (+-30	252.	12367731
		FLUAV	MDCK	1.0uM	465uM (+-17	465.	12367731
		FLUAV	MDCK	0.82uM	625uM (+-21	762.	12367731
		FLUAV	MDCK	0.63uM	625uM (+-21	992.	12367731
		FLUAV	MDCK	0.38uM	625uM (+-21	1,644.	12367731
		FLUAV	MDCK	0.70uM	625uM (+-21	892.	12367731
		FLUAV	MDCK	0.54uM	625uM (+-21	1,157.	12367731
		FLUAV	MDCK	0.45uM	625uM (+-21	1,388.	12367731
		FLUAV	MDCK	0.83uM	625uM (+-21	753.	12367731
		FLUAV	MDCK	0.27uM	1200uM (+-5	4,444.	12367731
		FLUAV	MDCK	0.48uM	700uM (+-34	1,458.	12367731
		FLUAV	MDCK	0.37uM	610uM (+-90	1,648.	12367731
		FLUAV	MDCK	0.76uM	480uM (+-75	631.	12367731
		FLUAV	MDCK	0.49uM	490uM (+-65	1,000.	12367731
		FLUAV	MDCK	0.58uM	505uM (+-30	870.	12367731
		FLUAV	MDCK	0.78uM	465uM (+-17	596.	12367731
		FLUAV	MDCK	77uM (+-21)	>100 (MCC)	1.2.	18954995
		FLUAV	MDCK	2.7uM(+-1.1)	>100 (MCC)	37.	18954995
		FLUAV	MT-4	0.0041uM (+-0.0	22.431uM (+	5,470.	22057085
		FLUAV	MT-4	0.0081uM (+-0.0	22.431uM (+	2,769.	22057085
		FLUAV	MT-4	0.003uM (+-0.00	28.2uM (+-0	9,400.	22057085
		FLUAV	MT-4	0.003uM (+-0.00	28.2uM (+-0	9,400.	22057085
		FLUAV	MDCK	>660uM	>660uM	>1.	22197247
		FLUAV	MDCK	16.9uM	>660uM	39.	22197247
		FLUAV	MDCK	143.9uM	>660uM	4.6.	22197247
		FLUAV	MDCK	134.5uM	>500uM	3.7.	22870806
		FLUAV	MDCK	149uM	>500uM	3.4.	22870806
		FLUAV	MDCK	2.4uM	>500uM	208.	22870806
		FLUAV	MDCK	3.95uM	>500uM	126.	22870806
		FLUAV	MDCK	34uM	>500uM	14.7.	24237039
		FLUAV	MDCK	38uM	>500uM	13.2.	24237039
		FLUAV	MDCK	0.84uM	>500uM	595.	24237039
		FLUAV	MDCK	0.82uM	>500uM	609.	24237039
		FLUAV	MDCK	30uM	>500uM	16.6.	24941437
		FLUAV	MDCK	34uM	>500uM	14.7.	24941437
		FLUAV	MDCK	1.4uM	>500uM	357.	24941437
		FLUAV	MDCK	1.4uM	>500uM	357.	24941437
		FLUAV	MDCK	>80uM	>80uM	>1.	25147619
		FLUAV	tsaA-201(C	0.6uM (+-0.2)	>100uM	166.	27193582
		FLUAV	MDCK	0.3uM (+-0.1)	27.6uM (+-0	92.	28087313
		FLUAV	MDCK	125uM	>400uM	3.2.	28477572
		FLUAV	MDCK	211uM	>400uM	1.9.	28477572
		FLUAV	MDCK	2.3uM	>400uM	173.	28477572
		FLUAV	MDCK	2.2uM	>400uM	181.	28477572
		FLUAV	Vero	37.3uM (+-0.12)	2019.7uM (+	54.15	31054861
		FLUAV	Vero	37.2uM	2019.7uM (+	54.27.	31054861
		FLUAV	MDCK	0.43uM (+-0.13)	>100.00uM	>235.3	31559005
		FLUAV	Yeast	0.66uM (+-0.20)	>443.0	671.	31559005
		FLUBV	MDCK	>660uM	>660uM	>1.	22197247
		FLUBV	MDCK	>660uM	>660uM	>1.	22197247
		FLUBV	MDCK	>500uM	>500uM	>1.	22870806
		FLUBV	MDCK	>500uM	>500uM	>1.	22870806
		FLUBV	MDCK	>500uM	>500uM	>1.	24237039
		FLUBV	MDCK	>400uM	>400uM	>1.	28477572
		FLUBV	MDCK	>400uM	>400uM	>1.	28477572
		FLUBV	MDCK	>500uM	>500uM	>1.	24237039
Amiloride		fCoV-1	Fcwf-4	>1000uM	2230.9uM (+	<2	25701212
		fCoV-1	Fcwf-4	>1000uM	2230.9uM (+	<2	25701212
		fCoV-1	Fcwf-4	>1000uM	2230.9uM (+	<2	25701212
		FMDV	IRBS-2	304.0uM (+-97.1	>1000uM	3.28.	31326561
		FMDV	IRBS-2	168.8uM (+-98.5	>1000uM	5.92.	31326561
		SARS-CoV-2	Vero	11.28uM	>100uM	8.9.	34003853
Amiodarone		EBOV	Eahy	2.02uM	25.9uM	12.82.	24710028
		EBOV	Vero	4.03uM	54.18uM	13.44.	26585243
		EBOV	Huh7	>25uM	>25uM	>1.	29939303
		EBOV	293T/17	7.8uM	>25uM	>3.2.	29939303
		MARV	Eahy	1.73uM	25.9uM	14.97.	24710028
		MERS-CoV	Huh7	0.74uM (+-0.06)	11.01uM (+-	14.9.	33116243
		SARS-CoV	Huh7	0.60uM (+-0.37)	11.01uM (+-	18.4.	33116243
		SARS-CoV-2	Huh7	0.218M	5.95uM	10.63.	33116243
		SARS-CoV-2	VeroE6	1.69uM (+-0.54)	>20uM	11.8.	33116243
		VSV	Huh7	11.26uM	5.95uM	<1.	33116243
		VSV	Vero	8.18uM	54.18uM	6.62.	26585243
Amodiaquine		DENV-2	BHK-21	10.81uM (+-1.43	80.01uM (+-	7.4.	24680954
		EBOV	Vero	34uM	>50uM	>1.4	27622822
		EBOV	Huh7	2.13uM (+-0.32)	78.95uM	37	30395872
		EBOV	Huh7	11.05uM	>50uM	>4.52.	29939303
		EBOV	293T/17	13uM	231uM	17.8.	29939303
		hCoV-229E	HEL	2.8uM (+-1.8)	>100uM	35.7.	34217752
		hCoV-229E	Huh7	>100uM	>100uM	>1.	34217752
		hCoV-OC43	HEL	1.9uM (+-1.3)	>100uM	52.6.	34217752
		SARS-CoV	VeroE6	7.0uM (+-4.1)	>100uM	14.3.	34217752
		SARS-CoV-2	VeroE6	5.9uM (+-1.2)	>100uM	16.95.	34217752
		SARS-CoV-2	Huh7	2.7uM (+-0.5)	>100uM	37.	34217752
		SFTSV	Vero	19.1uM (+-5.1)	>100uM	5.2.	29096526
		WNV	Vero	14.63uM (+-2.21	24.40uM (+-	1.7.	24680954
		ZIKV	Huh7 or Ve	3.07uM (+-0.36)	41.16uM (+-	13.4.	29315671
		ZIKV	Vero	4.40uM (+-0.51)	41.16uM (+-	9.35.	29315671

Amprenavir		HIV-1	MT-2	0.033uM (+-0.00	84.7uM (+-5	2,590.	23403426
		HIV-1	MT-2	0.033uM (+-0.01	>100uM	>3,000	18955518
		HIV-1	MT-2	0.036uM (+-0.01	>100uM	>2,800.	14506019
		HIV-1	MT-2	0.036uM (+-0.00	>100uM	>2,780	17371811
		HIV-2	MT-2	0.37uM (+-0.11)	84.7uM (+-5	228.9.	23403426
		HIV-2	MT-2	0.57uM (+-0.01)	>100uM	175.4.	17371811
		HIV-2	MT-2	0.023uM (+-0.01	>100uM	4,347.	14506019
		HIV-2	MT-2	0.17uM (+-0.05)	>100uM	588.	14506019
		HIV-2	MT-2	0.25uM (+-0.08)	>100uM	400.	17371811
Anisomycin		DENV-1	Vero	0.0232uM (+-0.0	5.4uM (+-0.1	232.	32081740
		DENV-2	Vero	0.0313uM (+-0.0	5.4uM (+-0.1	172.5.	32081740
		DENV-2	Vero	0.0076uM (+-0.0	5.4uM (+-0.1	710.5.	32081740
		DENV-2	Vero	0.015uM (+-0.01	5.4uM (+-0.1	360.	32081740
		DENV-2	A549	0.032uM (+-0.01	>94uM	2,937.	32081740
		DENV-2	U937	0.0132uM (+-0.0	0.42uM (+-0	31.8.	32081740
		DENV-2	HepG2	0.041uM (+-0.01	>94uM	2,292.	32081740
		DENV-3	Vero	0.025uM (+-0.01	5.4uM (+-0.1	216.	32081740
		DENV-4	Vero	0.062uM (+-0.01	5.4uM (+-0.1	87.1.	32081740
		fCoV	Fcwf-4	0.023uM (+-0.00	0.047uM (+-	2.	32563698
		hCoV-OC43	HCT-8	0.20uM (+-0.03)	22.8uM (+-0	110.	32563698
		ZIKV	Vero	0.016uM (+-0.00	5.4uM (+-0.1	337.5.	32081740
		ZIKV	Vero	0.051uM (+-0.00	5.4uM (+-0.1	105.8.	32081740
		ZIKV	Vero	0.0033uM (+-0.0	5.4uM (+-0.1	1,636.	32081740
		ZIKV	A549	0.008uM (+-0.00	>94uM	11,750.	32081740
		ZIKV	U937	0.031uM (+-0.00	0.42uM (+-0	13.5.	32081740
Apilimod		EBOV	Huh7	0.136uM (+-0.04	0.48uM (+-0	3.5.	28403145
		EBOV	VeroE6	0.025uM (+-0.01	>2.00uM	>80.0	28403145
		EBOV	hMDM	0.009uM (+-0.00	>2.00uM	>222.0	28403145
		EBOV	Huh7	1.35uM	1.63uM	1.21.	29939303
		EBOV	293T/17	0.2uM	>2uM	>10uM	29939303
		MARV	Huh7	0.140uM (+-0.05	0.50uM (+-0	3.6.	28403145
		MARV	VeroE6	0.015uM (+-0.00	>2.00uM	>133.0	28403145
		MARV	hMDM	0.010uM (+-0.00	>2.00uM	>200.0	28403145
Aprotinin		FLAUV	MDCK	0.011uM	<_0.2uM	18.2.	33941825
		FLUAV	MDCK	0.014uM	<_0.2uM	14.3.	33941825
		FLUAV	MDCK	0.021uM	<_0.2uM	9.5.	33941825
		FLUAV	MDCK	0.087uM	<_0.2uM	2.3.	33941825
		FLUAV	MDCK	0.057uM	<_0.2uM	3.5.	33941825
		FLUAV	MDCK	0.11uM	<_0.2uM	18.2.	33941825
		FLUBV	MDCK	0.039uM	<_0.2uM	5.1.	33941825
		SARS-CoV-2	Caco2	1.03uM (+-0.07)	>20uM	19.4.	33143316
		SARS-CoV-2	Caco2	0.81uM (+-0.07)	>20uM	24.7.	33143316
		SARS-CoV-2	Caco2	0.92uM (+-0.03)	>20uM	21.7.	33143316
Artesunate		EBOV	Huh7	17.2uM (+-1.2)	>40uM	>5.1	31882748
		HCMV	HFFs	3.9uM (+-0.6)	>10uM	>1.8.	26546752
Atazanavir		HIV-1	MT-2	0.0048uM (+-0.0	27.6uM (+-2	5,520.	23403426
		HIV-1	MT-2	0.0048uM (+-0.0	27.6uM	5,750.	17371811
		HIV-2	MT-2	0.0077uM (+-0.0	27.6uM (+-2	3,584.	23403426
		HIV-2	MT-2	0.013uM (+-0.00	27.6uM	2,123.	17371811
		HIV-2	MT-2	0.005uM (+-0.00	27.6uM	5,520.	17371811
Atovaquone		fCoV	Fcwf-4	4.78uM (+-0.51)	>100uM	20.92.	32563698
		hCoV-OC43	HCT-8	6.78uM (+-0.73)	>50uM	>7.37.	32563698
		MERS-CoV	Vero	0.72uM (+-0.058	>25uM	>34.7	33918958
AVN-944		BIRFLU	MDCK	0.21uM	29.61uM	141.	31941776
		BIRFLU	MDCK	0.21uM	>50uM	>238.10	31941776
		BIRFLU	A549	0.77uM	48.48uM	62.96.	31941776
		BIRFLU	A549	0.77uM	>50uM	64.93.	31941776
		FLUAV	MDCK	0.15uM	29.61uM	197.4.	31941776
		FLUAV	MDCK	0.15uM	>50uM	>333.33	31941776
		FLUAV	MDCK	0.99uM	29.61uM	29.91.	31941776
		FLUAV	MDCK	0.99uM	>50uM	>50.51	31941776
		FLUAV	16HBE	0.18uM	>50uM	>277.78	31941776
		FLUAV	16HBE	0.18uM	>50uM	>277.78	31941776
		FLUBV	MDCK	0.11uM	29.61uM	269.18	31941776
		FLUBV	MDCK	0.11uM	>50uM	>454.54	31941776
		ZIKV	Vero	0.98uM	272.60uM	278.16.	32961956
		ZIKV	Vero	0.98uM	>1350.00uM	>1377.55	32961956
		ZIKV	Vero	0.33uM	272.60uM	826.06	32961956
		ZIKV	Vero	0.33uM	>1350.00uM	>4090.91	32961956
		ZIKV	Vero	0.38uM	272.60uM	717.37	32961956
		ZIKV	Vero	0.38uM	>1350.00uM	>3552.63	32961956
		ZIKV	A549	0.05uM	>50uM	>1000.00	32961956
		ZIKV	A549	0.05uM	>50uM	>1000.00	32961956
Azacitidine		RVFV	A549	11.42uM	>100uM	>9	29698664
Azaribine		BIRFLU	MDCK	0.29uM	19.66uM	67.79.	31941776
		BIRFLU	MDCK	0.29uM	>50uM	>172.41	31941776
		BIRFLU	A549	0.55uM	>50uM	>90.91	31941776
		BIRFLU	A549	0.55uM	>50uM	>90-91	31941776
		FLUAV	MDCK	0.60uM	19.66uM	32.77.	31941776
		FLUAV	MDCK	0.60uM	>50uM	>83.33	31941776
		FLUAV	MDCK	0.77uM	19.66uM	25.53.	31941776
		FLUAV	MDCK	0.77uM	>50uM	>64.94	31941776
		FLUAV	16HBE	1.58uM	>50uM	>31.65	31941776
		FLUAV	16HBE	1.58uM	>50uM	>31.65	31941776
		FLUBV	MDCK	0.80uM	19.66uM	24.57.	31941776
		FLUBV	MDCK	0.80uM	>50uM	>62.50.	31941776
		ZIKV	Vero	1.62uM	237.00uM	146.29	32961956
		ZIKV	Vero	1.62uM	>1350.00uM	>833.33	32961956
		ZIKV	Vero	2.43uM	237.00uM	97.53	32961956
		ZIKV	Vero	2.43uM	>1350.00uM	>555.56	32961956
		ZIKV	Vero	1.12uM	237.00uM	211.61	32961956
		ZIKV	Vero	1.12uM	>1350.00uM	>1205.36	32961956
		ZIKV	A549	0.68uM	>50uM	>73.53	32961956
		ZIKV	A549	0.68uM	>50uM	>73.53	32961956
Azauridine		EBOV	Huh7	50*26uM (+-38*	>50uM	1	31300330
		EBOV	Huh7	34*13uM (+-21*	>50uM	2	31300330
		SARS-CoV	Vero	68.5uM	424.2uM	6	12814717
		ZIKV	Vero	4.29uM	155.80uM	36.32	32961956
		ZIKV	Vero	4.29uM	>1350.00uM	>314.69	32961956
		ZIKV	Vero	0.76uM	155.80uM	205.00	32961956
		ZIKV	Vero	0.76uM	>1350.00uM	>1776.32	32961956
		ZIKV	Vero	1.46uM	155.80uM	106.71	32961956
		ZIKV	Vero	1.46uM	>1350.00uM	>924.66	32961956
		ZIKV	A549	0.44uM	>50uM	>113.64	32961956
		ZIKV	A549	0.44uM	>50uM	>113.64	32961956

Azithromycin		DENV-2	Vero	3.71uM	810uM	218.	31527024
		EBOV	HeLa	5.1uM	>130uM	>25.	27622822
		EBOV	Huh7	14.74uM	>25uM	>1.70.	29939303
		EBOV	293T/17	>50uM	>50uM	>1.	29939303
		FLUAV	A549	68uM	>600uM	>8.8	31300721
		SARS-CoV-2	VeroE6	21.1uM (+-4.5)	>100uM	>5.	33075512
		SARS-CoV-2	VeroE6	0.32uM	793uM	2478.13	33291642
		SARS-CoV-2	Vero	9.453uM	>100uM	>10.579	33382685
		SARS-CoV-2	Vero	2.12uM	>40uM	>19.	32753646
		ZIKV	Huh7	4.97uM	1360uM	273.6.	31527024
		ZIKV	Huh7	1.23uM	1360uM	1,105.	31527024
		ZIKV	U87	2.1uM	53uM	25.	27911847
		ZIKV	U87	2.9uM	53uM	18.	27911847
		ZIKV	U87	5.1uM	53uM	10	27911847
		ZIKV	Astrocytes	15uM	44uM	2.9.	27911847
Baloxavir marboxil		FLUAV	MDCK-SIAT	0.0006uM (+-0.0	34.1uM (+-1	56,833.	30771405
		FLUAV	MDCK-SIAT	0.0003uM (+-0.0	34.1uM (+-1	113,666.	30771405
		FLUAV	MDCK-SIAT	0.037uM (+-0.01	34.1uM (+-1	921.	30771405
		FLUAV	MDCK-SIAT	0.0221uM (+-0.0	34.1uM (+-1	1,542.	30771405
		FLUAV	MDCK-SIAT	0.0133nM (+-0.0	34.1uM (+-1	2,563.	30771405
		FLUAV	MDCK-SIAT	0.0021uM (+-0.0	34.1uM (+-1	16,238.	30771405
		FLUAV	MDCK-SIAT	0.00091uM (+-0.	34.1uM (+-1	37,472.	30771405
		FLUAV	MDCK-SIAT	0.0006uM (+-0.0	34.1uM (+-1	56,833.	30771405
		FLUBV	MDCK-SIAT	0.0012uM (+-0.0	34.1uM (+-1	28,426.	30771405
		FLUBV	MDCK-SIAT	0.0017uM (+-0.0	34.1uM (+-1	20,058.	30771405
		FLUBV	MDCK-SIAT	0.0013uM (+-0.0	34.1uM (+-1	26,230.	30771405
		FLUBV	MDCK-SIAT	0.0041uM (+-0.0	34.1uM (+-1	8,317.	30771405
		FLUBV	MDCK-SIAT	0.0019uM (+-0.0	34.1uM (+-1	17,947.	30771405
		FLUBV	MDCK-SIAT	0.002uM (+-0.00	34.1uM (+-1	17,050.	30771405
Beclabuvir		BVDV	Huh7	>14uM	20.26uM	1.5.	24733465
		BVDV	MDBK	11uM	30.43uM	2.8.	24733465
		CV	MRC5	>16uM	16.18uM	>1.	24733465
		cPIV	Vero	>32uM	29.32uM	<1.	24733465
		FLUAV	MDBK	>29uM	30.43uM	>1.	24733465
		hCoV-OC43	MRC5	>16uM	16.18uM	>1.	24733465
		HCV	Huh7	0.003uM (+-0.00	20.26uM	6,753.	24733465
		HDV	Huh7	0.006uM (+-0.00	20.26uM	3,376.	24733465
		HIV	MT-2	>14uM	14.14uM	>1.	24733465
		hRrV-2	MRC5	>16uM	16.18uM	>1.	24733465
		HSV-1/-2	Vero	>4uM	29.32uM	7.3.	24733465
		PoV	MRC5	>16uM	16.18uM	>1.	24733465
Benztropine		EBOV	Vero	9.2uM	>50uM	>2.1	27622822
		EBOV	VeroE6	3.7uM	68uM	18.4.	26202243
		HCV	Huh7.5.1 c	0.67uM (+-0.29)	26.25uM (+-	39.	24709263
		MARV	VeroE6	13.2uM	68uM	5.2.	26202243
Bepridil		EBOV	Vero	4.9uM	>50uM	>10.	27622822
		EBOV	Huh7	>50uM	>50uM	>1.	29939303
		EBOV	293T/17	>50uM	>50uM	>1.	29939303
Berberine		CV-B1	Vero	6.41uM (+-1.05)	120uM	18.7.	31855821
		CV-B1	Vero	5.85uM (+-0.61)	120uM	20.5.	31855821
		CV-B1	Vero	13.8uM (+-1.40)	120uM	8.7.	31855821
		CV-B1	Vero	9.45uM (+-1.20)	120uM	12.7.	31855821
		CV-B1	Vero	7.36uM (+-0.73)	120uM	16.3.	31855821
		CV-B2	Vero	7.36uM (+-0.73)	120uM	16.3.	31855821
		CHIKV	Huh7	1.9uM (+-0.9)	>100uM	>52.6.	26752081
		CHIKV	BHK-21	1.8uM (+-0.5)	>100uM	>55.6.	26752081
		FLUAV	MDCK	74.3uM	719.4uM	9.69.	21660679
		FLUAV	MDCK	107.4uM	194.2uM	1.808.	33673431
		FLUAV	MDCK	123.6uM	194.2uM	1.571.	33673431
		FLUBV	MDCK	180.8uM	194.2uM	1.07.	33673431
		FLUBV	MDCK	162.4uM	194.2uM	1.196	33673431
		HCMV	MRC-5	0.68uM	74uM	110.	17239594
		HIV-1	HeLa	17.2uM	318uM	18.5.	32897426
		HIV-1	293T	18.9uM	318uM	16.8.	32897426
		HIV-1	293T	16.6uM	318uM	19.1.	32897426
		HIV-1	293T	16.6uM	318uM	19.1.	32897426
		HIV-1	293T	30.5uM	318uM	10.4.	32897426
		HIV-1	293T	22.5uM	318uM	14.1.	32897426
		HIV-1	293T	22.4uM	318uM	14.2.	32897426
		SARS-CoV-2	VeroE6	9.1uM	>150uM	16.5.	33670363
		SARS-CoV-2	VeroE6	10.577uM	>400uM	>37.84.	32679055
Betulinic Acid		HIV-1	RC-37	0.7uM	10.9uM	15.6.	25172789
Bleomycin		SFTSV	293T	290nM	>300uM	>1034.	34205062
Boceprevir		SARS-CoV-2	VeroE6	44uM	>1,214uM	>28.	34097489
		SARS-CoV-2	Huh7.5	42uM	701uM	17.	34097489
		SARS-CoV-2	A549-hACE	20uM	>1,213uM	>61.	34097489
		SARS-CoV-2	VeroE6	19.6uM	>50uM	2.6.	33984267
		SARS-CoV-2	HEK293T	5.4uM	>50uM	9.3.	33984267
Bortezomib		FLUAV	RPE	0.098uM (+-0.03	>10uM	>102	22910914
		RVFV	A549	<0.39uM	> 100	>256	29698664
Brequinar		BIRFLU	MDCK	0.58uM	>50uM	>86.21	31941776
		BIRFLU	MDCK	0.58uM	>50uM	>86.21	31941776
		BIRFLU	A549	20.24uM	>50uM	>2.47	31941776
		BIRFLU	A549	20.24uM	>50uM	>2.47	31941776
		FLUAV	MDCK	0.78uM	>50uM	>64.10	31941776
		FLUAV	MDCK	0.78uM	>50uM	>64.10	31941776
		FLUAV	MDCK	0.62uM	>50uM	>80.65	31941776
		FLUAV	MDCK	0.62uM	>50uM	>80.65	31941776
		FLUAV	16HBE	0.14uM	>13.66uM	>97.57	31941776
		FLUAV	16HBE	0.14uM	>50uM	>357.14	31941776
		FLUBV	MDCK	0.25uM	>50uM	>200.00	31941776
		FLUBV	MDCK	0.25uM	>50uM	>200.00	31941776
		JEV	Vero76	0.09uM	>50uM	>555.	27919709
		WNV	Vero76	0.11uM	>50uM	>454.	27919709
		ZIKV	Vero76	0.08uM	>50uM	>625	27919709
		ZIKV	Vero76	0.08uM	>50uM	>625	27919709
		ZIKV	Vero	25.00uM	>1350.00uM	157.42	32961956
		ZIKV	Vero	25.00uM	>1350.00uM	>894.04	32961956
		ZIKV	Vero	0.05uM	237.70uM	4754.00	32961956
		ZIKV	Vero	0.05uM	>1350.00uM	>27,000.0(	32961956
		ZIKV	Vero	0.08uM	237.70uM	2971.25	32961956
		ZIKV	Vero	0.08uM	>1350.00uM	>16,875.0(	32961956
		ZIKV	A549	0.02uM	>50uM	>2500.00	32961956
		ZIKV	A549	0.02uM	>50uM	>2500.00	32961956

Brincidofovir		B19B	EPCs (from	14.3uM	93.4uM	6.5.	30529090
		B19B	UT7	0.63uM	59.9uM	95.1	30529090
		B19B	EPCs (from	93.0uM	146.2uM	1.6.	30529090
		B19B	UT7	54.7uM	72.1uM	1.3.	30529090
Brivudine		CPXV	Vero	>90uM	>300uM	3.3.	16530858
		CPXV	Vero	>90uM	>300uM	3.3.	16530858
		EBV	P3HR-1	2.4uM (+-1.4)	495uM (+-6(	206	25267682
		HSV	OMK	5.7uM (+-4.5)	>900uM	>158	25267682
		HSV-1	HEL	0.031uM (+-0.02	>250uM (M(	8,064.	30497281
		HSV-1	HEL	32.4uM (+-24.1)	>250uM (M(	7.72.	30497281
		HSV-1	HEL	0.05uM (+-0.05)	>250uM (M(	5,000.	30497281
		HSV-1	HEL	50uM	>250uM (M(	5.	30497281
		HSV-1	MRC-5	0.0174uM	1450uM	83,333.	7822458
		HSV-1	MRC-5	0.0177uM	1450uM	81,920.	7822458
		HSV-1	HFF	0.27uM	>300uM	1,111.	16530858
		HSV-1	HFF	300uM	>300uM	>1.	16530858
		HSV-2	HEL	112uM (+-37)	>250uM (M(	2.2.	30497281
		HSV-2	HEL	>_250uM (+-0.0(	>250uM (M(	>1.	30497281
		HSV-2	MRC-5	4.38uM	1450.	331.	7822458
		HSV-2	MRC-5	4.20uM	1450.	345.	7822458
		KSHV	BCBL-1	0.6uM (+-0.3)	138uM (+-72	230	25267682
		KSHV	BCBL-1	24uM (+-12)	342uM (+-1(	>_13	9420052
		MHV-68	NIH3T3	0.09uM (+-0.06)	18uM (+-6)	200	25267682
		RRV	RF	0.3uM (+-0.2)	411uM (+-19	1370	25267682
		VACV	HEL	8.26uM (+-9.62)	>250uM (M(	30.3.	30497281
		VACV	HEL	16.4uM (+-17.8)	>250uM (M(	15.2.	30497281
		VZV	HEL	0.036uM (+-0.00	> 300	> 8333	33479570
		VZV	HEL	6.04uM	> 300	> 49	33479570
		VZV	HEL	0.019uM (+-0.01	309uM (+-21	16,265.	30497281
		VZV	HEL	116uM (+-57)	309uM (+-21	2.7.	30497281
		VZV	HEL	0.019uM (+-0.01	168uM (+-41	8,842.	30497281
		VZV	HEL	19.6uM (+-23.0)	168uM (+-41	8.6.	30497281
Bromocriptine		CHIKV	Huh7	1.4uM (+-0.3)	>100uM	>71.4.	26752081
		CHIKV	BHK-21	3.7uM (+-0.4)	>100uM	>27.	26752081
		DENV-1	Vero	1.6uM	53.6uM	33.5.	27181378
		DENV-2	Vero	1.2uM	53.6uM	44.6.	27181378
		DENV-3	Vero	0.8uM	53.6uM	67.	27181378
		DENV-4	Vero	0.8uM	53.6uM	67.	27181378
		TBEV	BHK-21	11.3uM	53.6uM	4.7.	27181378
		ZIKV	Vero	13.04uM (+-2.00	>40uM	>3.07	28185815
Calanolide A		HCMV	HFF	>54uM	233uM	>4.3.	10693651
		HIV-1	CEM-SS	0.08uM	10-20uM	125-250	10428899
		HIV-1	CEM-SS	0.1uM	10-20uM	100-200	10428899
		HIV-1	CEM-SS	0.09uM	10-20uM	111-222	10428899
		HIV-1	174xCEM	0.5uM	10-20uM	20-40	10428899
		HIV-1	MT-2	0.4uM	10-20uM	25-50	10428899
		HIV-1	U937	0.2uM	10-20uM	50-100	10428899
		HIV-1	AA5	0.2uM	10-20uM	50-100	10428899
		HIV-1	PBMC	0.03uM	10-20uM	333-666	10428899
		HIV-1	CEM-SS	0.08uM	9.3uM	116.	10693651
		HIV-2	CEM-SS	>10uM	10-20uM	>1-2	10428899
		SIV	174xCEM	>10uM	10-20uM	>1-2	10428899
Camostat		FLUAV	MDCK	5.5uM	>1,255uM	228.	1510439
		FLUBV	MDCK	14.6uM	>1,255uM	85.	1510439
		hPIV-3	Vero	>1,255uM	>1,255uM	>1.	1510439
		MeV	Vero	>1,255uM	>1,255uM	>1.	1510439
		RSV	HeLa	>1,255uM	>1,255uM	>1.	1510439
Camptothecin		HIV-1	C8166	0.016uM	0.39uM	24.4.	20110878
		HIV-1	PBMC	0.021uM	0.22uM	10.5.	20110878
		HIV-2	C8166	0.012uM	0.39uM	32.5.	20110878
		HIV-2	C8166	0.019uM	0.39uM	20.5.	20110878
		KSHV	BCBL-1	0.1163uM	0.233uM	2.0.	22106228
Cepharanthine		hCoV-OC43	MRC-5	0.83uM (+-0.07)	11.26uM (+-	13.63.	31690059
		hCoV-OC43	LLC-MK2	1.26uM	9.1uM	7.22.	33324406
		pCoV	Vero	980uM	39,300uM	40.	32149769
		SARS-CoV-2	VeroE6	1.0uM	20.00uM	20.	33917313
Chicoric acid		HIV-1	MT-4	5.3uM (+-0.2)	45.0uM (+-1	8.4.	10212126
		HIV-1	MT-4	1.7uM (+-0.1)	39.7uM (+-5	23.4.	10212126
		HIV-2	MT-4	21.2uM	45.0uM (+-1	2.1.	10212126
		HIV-2	MT-4	8.6uM (+-3.2)	39.7uM (+-5	4.6.	10212126
Chloroquine		CHIKV	RPE	9.15uM	>30uM	>2	29698664
		CHIKV	RPE	12.81uM	>30uM	>2	29698664
		CHIKV	RPE	16.84uM	>30uM	>2	29698664
		EBOV	Vero	16uM	>50uM	>3.1	27622822
		EBOV	HeLa	4.0uM (1.0-15)	250uM	62.5.	26834994
		EBOV	Huh7	>25uM	>25uM	>1.	29939303
		EBOV	293T/17	6.5uM	>25uM	>3.8.	29939303
		fCoV	CRFK	16.63uM	82.21uM	4.95.	25465182
		fCoV	CRFK	0.38uM	82.21uM	217.60	25465182
		fCoV	CRFK	28.87uM	82.21uM	2.85.	25465182
		hCoV-229E	HEL	1.4uM (+-1.0)	20uM (+-0)	14.3.	34217752
		hCoV-229E	Huh7	8.6uM (+-0.5)	14uM (+-2)	1.6.	34217752
		hCoV-229E-C	Huh7	3.3uM (+-1.2)	< 50uM	<15	24841269
		hCoV-OC43	HEL	0.12uM (+-0.00)	20uM (+-0)	166.6.	34217752
		HSV-2	Vero cells	1.86uM (+-0.20)	15.67uM (+-	8.42.	29522484
		JEV	Vero76	>50uM	>50uM	>1.	27919709
		MERS-CoV	Huh7	3.0uM (+-1.1)	58.1uM (+-1	19.4.	24841269
		MHV	RAW264	14.92uM	48.79uM	3.27.	34395311
		SARS-CoV	VeroE6	4.1uM (+-1.0)	< 128uM	< 31	24841269
		SARS-CoV	VeroE6	3.8uM (+-0.1)	71uM (+-10)	18.7.	34217752
		SARS-CoV-2	VeroE6	1.36uM	> 40uM	> 30	32432977
		SARS-CoV-2	VeroE6	1.13uM	>100uM	>88.50	32020029
		SARS-CoV-2	VeroE6	2.71uM	273.20uM	100.81	32194981
		SARS-CoV-2	VeroE6	3.81uM	273.20uM	71.71	32194981
		SARS-CoV-2	VeroE6	7.17uM	273.20uM	38.26	32194981
		SARS-CoV-2	VeroE6	7.36uM	273.20uM	37.12	32194981
		SARS-CoV-2	VeroE6	0.35uM (+-0.02)	>20uM	>57.	32376613
		SARS-CoV-2	VeroE6	11uM (+-1)	71uM (+-10)	6.5.	34217752
		SARS-CoV-2	Huh7	2.0uM (+-1.0)	14uM (+-2)	7.	34217752
		SARS-CoV-2	VeroE6	2.1uM (+-0.7)	>100uM	>47	32916297
		SARS-CoV-2	VeroE6	1.38uM	238uM	172.46.	32679055
		SARS-CoV-2	VeroE6	3.2uM (+-1.8)	>100uM	31.3.	33142770
		SARS-CoV-2	VeroE5	3.86uM	>25uM	6.5.	33841165
		WNV	Vero76	>50uM	>50uM	>1.	27919709
		ZIKV	RPE	7.25uM	>30uM	>4	29698664
		ZIKV	Vero76	>3.125uM	>50uM	>16.	27919709
		ZIKV	Vero76	>6.25uM	>50uM	>8.	27919709
		ZIKV	Vero	5.31uM (+-0.64)	>100uM	>18.8	30801742
		ZIKV	Vero	5.12uM (+-0.66)	>100uM	>19.	30801742
		ZIKV	Vero	6.74uM (+-0.77)	>100uM	>14.	30801742
		ZIKV	Vero	9.97uM (+-1.06)	>100uM	>10.	30801742

Chlorpromazine		hCoV-OC43	LLC-MK2	2.61uM	>10uM	>3.83.	33324406
		hCoV-229E-G	Huh7	2.5uM (+-1.0)	23.5uM (+-1	9.4.	24841269
		MERS-CoV	Huh7	4.9uM (+-1.2)	21.3uM (+-1	4.3.	24841269
		SARS-CoV	VeroE6	8.8uM (+-1.0)	24.3uM (+-1	2.8.	24841269
Ciclesonide		MERS-CoV	Vero	4.07uM (+-0.490	>25uM	>6.1	33918958
		SARS-CoV-2	VeroE6	4.2uM	119.5uM	28.73.	33291642
Cidofovir		hAdV-19/-64	A549	4.09uM (+-3.71)	>100uM	>24	33810229
		hAdV-3	HFF	2uM	>317uM	>158	15633099
		hAdV-3	A549	5.78uM (+-1.70)	>100uM	>17	33810229
		hAdV-31	HFF	1.4uM	>317uM	>226	15633099
		hAdV-37	A549	3.96uM (+-6.22)	>100uM	>25	33810229
		hAdV-4	HFF	1.9uM	>150uM	>78	32816736
		hAdV-4	A549	8.71uM (+-1.40)	>100uM	>11	33810229
		hAdV-5	HFF	0.5uM	>317uM	>630	15633099
		hAdV-5	HFF	4uM	>100uM	>25	32816736
		hAdV-5	A549	30.3uM (+-22.0)	>100uM	>3	33810229
		hAdV-6	A549	28.46uM	>100uM	>3.5	32816736
		hAdV-7	HFF	1.3uM	>317uM	>243	15633099
		hAdV-7	HFF	2.1uM	>150uM	>70	32816736
		hAdV-7a	A549	1.81uM (+-2.33)	>100uM	>55	33810229
		hAdV-8	HFF	1uM	>317uM	>317	15633099
		hAdV-8	HFF	3.8uM	>150uM	>39	32816736
		hAdV-8	A549	0.49uM (+-0.03)	>100uM	>204	33810229
		BKPyV	HSG	18uM	28uM	1.6.	25790744
		BKPyV	WI-38	115.1uM (+-37.1	299.9uM (+-	2.6.	16569886
		BKPyV	WI-38	115.1uM (+-37.1	202.6uM (+-	1.8.	16569886
		CPXV	HFF	23uM (+-4.1)	278.4uM (+-	12.1.	11897580
		CPXV	HFF	44.7uM (+-6.3)	278uM (+-9.	6.2.	11897580
		CPXV	HFF	43uM (+-2.5)	278uM (+-9.	6.5.	12615301
		CPXV	Vero	26.9uM	>358uM	>13	12615299
		CPXV	LLC-MK2	4.3uM	>358uM	>80	12615299
		CPXV	NHEK	1,69uM	>1,000uM	>590	33198108
		CPXV	NHEK	5,82uM	>1,000uM	>170	33198108
		CPXV	Vero	21.8uM	>358uM	>16.	16530858
		CPXV	Vero	11.8uM	>358uM	>30.	16530858
		CPXV	HFF	42uM (+-5.4)	>317uM (+-0	>7.5.	15105146
		EBV	P3HR-1	1.4uM	64.5uM	45.	9875407
		EBV	P3HR-1	1.8uM	64.5uM	45.	9875407
		HCMV	HEL	0.65uM (+-0.38)	150.02uM (+	230.7.	33479570
		HCMV	HEL	0.34uM (+-0.056	150.02uM (+	441.2.	33479570
		HCMV	HFF	0.4uM (+-0.1)	>100uM	>250	16127046
		HCMV	HFF	0.5uM (+-0.3)	>100uM	>200	16127046
		HCMV	HFF	0.5uM (+-0.4)	>100uM	>200	16127046
		HCMV	HFF	3.8uM (+-2.8)	>100uM	>26	16127046
		HCMV	HFF	1.9uM (+-1.3)	>100uM	>52	16127046
		HCMV	HFF	0.8uM (+-0.2)	>100uM	>125	16127046
		HCMV	HFF	1.4uM (+-0.06)	>100uM	>71	16127046
		HCMV	HFF	2.0uM (+-0.56)	>100uM	>50	16127046
		HCMV	HFF	15.7uM (+-14.1)	>100uM	>6.3.	16127046
		HCMV	HFF	0.4uM(+-0.07)	>100uM	>250	16127046
		HCMV	HFF	3.2uM (+-3.5)	>100uM	>30	16127046
		HCMV	HFF	0.4uM (+-0.3)	>100uM	>250	16127046
		HCMV	HFF	0.3uM (+-0.05)	>100uM	>333	16127046
		HCMV	MRC-5	0.46uM (+-0.08)	>1,000	>303	12121908
		HCMV	HEL	0.86uM (+-0.37)	263uM (+-17	305.8	30497281
		HCMV	HEL	0.92uM (+-0.34)	263uM (+-17	285.9	30497281
		HHV-6A	CBMC	0.45uM	228.8uM	641.7.	9864048
		HHV-6A	CBMC	1.54uM	228.8uM	187.5.	9864048
		HHV-6B	CBMC	6.1uM	228.8uM	47.	9864048
		HHV-6B	CBMC	1.43uM	228.8uM	201.9	9864048
		HHV-6B	CBMC	5.4uM	228.8uM	53.5.	9864048
		HHV-6B	CBMC	4.3uM	228.8uM	67.2.	9864048
		HHV-7	CBMC	5.4uM	228.8uM	53.5.	9864048
		HHV-7	CBMC	17.9uM	228.8uM	16.1.	9864048
		HHV-7	CBMC	6.45uM	228.8uM	44.8.	9864048
		KSHV	BCBL-1	6.3uM (+-1.8)	340uM (+-11	54.	9420052
		HSV-1	HFF	5.5uM (+-6.0)	>100uM	>18	16127046
		HSV-1	HFF	5.7uM (+-7.4)	>100uM	>17	16127046
		HSV-1	HFF	3.0uM (+-1.5)	>100uM	>33	16127046
		HSV-1	MRC-5	3.3uM (+-3.7)	>1,000	>2,174	12121908
		HSV-1	HEL	1.50uM (+-0.50)	>250uM (M(	>166.	30497281
		HSV-1	HEL	1.92uM (+-1.31)	>250uM (M(	>130	30497281
		HSV-1	HFF	5.4uM	>358uM	66.3.	16530858
		HSV-1	HFF	5.4uM	>358uM	66.3.	16530858
		HSV-2	HFF	5.1uM (+-5.4)	>100uM	19.6.	16127046
		HSV-2	HFF	5.3uM (+-3.0)	>100uM	18.8.	16127046
		HSV-2	HFF	6.5uM (+-1.9)	>100uM	15.4.	16127046
		HSV-2	HEL	1.54uM (+-1.46)	>250uM (M(	162.3.	30497281
		MPXV	Vero	23.9uM	>358uM	14.9.	12615299
		MPXV	LLC-MK2	9.7uM	>358uM	27.0.	12615299
		ORFV	HEL	1.33uM	135.7uM	102.	17184854
		ORFV	HEL	0.61uM	135.7uM	223.	17184854
		ORFV	HEL	1.25uM	135.7uM	108.	17184854
		ORFV	HEL	1.47uM	135.7uM	92.	17184854
		ORFV	HEL	0.86uM	135.7uM	158.	17184854
		ORFV	PLK	0.86uM	>179uM	>53	17184854
		ORFV	PLK	9.3uM	>179uM	58.	17184854
		ORFV	PLK	1.79uM	>179uM	195.	17184854
		ORFV	PLK	4.5uM	>179uM	91.	17184854
		ORFV	PLK	26.9uM	>179uM	46.	17184854
		VARV	Vero	21.5uM	>358uM	16.7.	12615299
		VARV	Vero	25.1uM	>358uM	14.3.	12615299
		VARV	Vero	17.9uM	>358uM	20.	12615299
		VARV	Vero	46.6uM	>358uM	7.7.	12615299
		VARV	Vero	82.4uM	>358uM	4.3.	12615299
		VARV	Vero	71.6uM	>358uM	5.	12615299
		VARV	Vero	42.9uM	>358uM	8.3.	12615299
		VARV	Vero	60.9uM	>358uM	5.9.	12615299
		VARV	Vero	39.4uM	>358uM	9.1.	12615299
		VARV	Vero	100.2uM	>358uM	3.6.	12615299
		VARV	Vero	53.7uM	>358uM	6.7.	12615299
		VARV	Vero	50.2uM	>358uM	7.1.	12615299
		VARV	Vero	35.8uM	>358uM	10.	12615299
		VARV	Vero	39.4uM	>358uM	9.1.	12615299
		VARV	Vero	28.7uM	>358uM	12.5.	12615299
		VARV	Vero	50.2uM	>358uM	7.1.	12615299
		VARV	Vero	60.9uM	>358uM	5.9.	12615299
		VARV	Vero	39.4uM	>358uM	9.1.	12615299
		VARV	Vero	35.8uM	>358uM	10.	12615299
		VARV	Vero	42.9uM	>358uM	8.3.	12615299
		VARV	Vero	35.8uM	>358uM	10.	12615299
		VARV	Vero	39.4uM	>358uM	9.1.	12615299
		VARV	Vero	25.1uM	>358uM	14.3.	12615299
		VARV	Vero	25.1uM	>358uM	14.3.	12615299
		VARV	Vero	42.9uM	>358uM	8.3.	12615299
		VARV	Vero	35.8uM	>358uM	10.	12615299
		VARV	Vero	42.9uM	>358uM	8.3.	12615299
		VARV	Vero	17.9uM	>358uM	20.	12615299
		VARV	Vero	35.8uM	>358uM	10.	12615299
		VARV	Vero	68.1uM	>358uM	5.3.	12615299
		VARV	Vero	46.6uM	>358uM	7.7.	12615299
		VARV	Vero	34uM	>358uM	10.5.	12615299
		VARV	LLC-MK2	11.5uM	>358uM	31.3.	12615299
		VARV	Vero	43.3uM	>358uM	8.3.	12615299
		VARV	LLC-MK2	9.67uM	>358uM	37.0	12615299
		VARV	Vero	16.12uM	>358uM	22.2.	12615299
		VARV	LLC-MK2	8.9uM	>358uM	40.0.	12615299
		VACV	HFF	48uM (+-1.8)	278.4uM (+-	5.8.	11897580
		VACV	HFF	46.2uM (+-11.9)	278uM (+-9.	6.	11897580
		VACV	HFF	45.8uM (+-16.6)	278uM (+-9.	6.1.	11897580
		VACV	HFF	41.6uM (+-22.4)	278uM (+-9.	6.7.	11897580
		VACV	HFF	13.4uM (+-5.6)	278uM (+-9.	20.8.	11897580
		VACV	HFF	10.1uM (+-1.3)	278uM (+-9.	27.5.	11897580
		VACV	HFF	33uM (+-9.1)	278uM (+-9.	8.4.	12615301
		VACV	Vero	29uM	>358uM	12.3.	12615299
		VACV	LLC-MK2	15.4uM	>358uM	23.3.	12615299
		VACV	HEL	22.0uM (+-19.9)	>250uM (M(	>11.4	30497281
		VACV	HFF	31uM (+-5.4)	>317uM (+-0	>10.	15105146
		VZV	HFF	0.5uM (+-0.7)	>100uM	>200	16127046
		VZV	HEL	0.92uM (+-0.38)	170uM (+-61	184.8.	30497281
		VZV	HEL	0.78uM (+-0.32)	170uM (+-61	217.9.	30497281
Clofarabine		HIV-1	Human act	0.0602uM (0.024	0.854uM (0.	14.2.	27009333
		HIV-1	monocyte	0.026uM (0.017-	6.8uM (3.2-9	261.5.	27009333
		SFTSV	293T	0.580uM	>600uM	1,034.	34205062
Clofazimine		hCoV-OC43	LLC-MK2	0.35uM	10uM	28.57.	33324406
		LCMV	Vero	1.704uM	55.05uM	32.3.	33183004
		LCMV	BHK-21	0.9338uM	35.03uM	37.5.	33183004
		RABV	293T	2.28uM	>200uM	>87.9	33815101
		RABV	293T	1.7uM	>200uM	>120.	33815101
		VSV	293T	10.5uM	>200uM	>19	33815101
		RABV	PG-4	4.243uM	143.8uM	33.9.	33815101
		SARS-CoV-2	VeroE6	2.8uM	>100uM	35.7.	33917313
		SARS-CoV-2	Vero	0.01uM	>30uM	>3000.	33324406
Clomipramine		EBOV	Vero	1.83uM	15.30uM	8.36.	26585243
		VSV	Vero	8.17uM	15.30uM	1.87.	26585243
Clomiphene		EBOV	Vero	11uM	>50uM	>4.5.	27622822
		EBOV	Huh7	1.96uM	22.4uM	11.43.	29939303
		EBOV	293T/17	8.5uM	>25uM	>2.9.	29939303
CR-31-B (–)		CCHFV	Murine he	0.02uM	>5uM	>250	31931103
		hCoV-229E	MRC-5	0.00288uM	>5uM	>1736.	31931103
		LASV	Murine he	0.03611uM	>5uM	>139.	31931103
		MERS-CoV	MRC-5	0.00187uM	>5uM	>2673	31931103
		SARS-CoV-2	Vero	0.00182uM	>0.1uM	>50.	33422611
		ZIKV	A549	0.00113uM	0.01934uM	17.1.	31931103
Cucurbit[7]uril		CV-A16	RD cells	433.3uM (+-36.0	>2,500uM	5.8.	34037947
		DENV-2	Aag2	420.2uM (+-67.8	>2,500uM	5.9.	34037947
		DENV-2	C6/36	379.3uM (+-57.4	>2,500uM	6.6.	34037947
		EV-A71	RD cells	344uM (+-24.24)	>2,500uM	7.3.	34037947
		EV-A71	RD cells	346.6uM (+-17.9	>2,500uM	7.2.	34037947
		SFV-4	293T	603.4uM (+-64.6	>2,500uM	4.1.	34037947
		ZIKV	A549	285.6uM (+-19.4	>2,500uM	8.8.	34037947
		ZIKV	Aag2	426.5uM (+-98.6	>2,500uM	5.9.	34037947
		ZIKV	C6/36	560.1uM (+-80.7	>2,500uM	4.5.	34037947
Cyclosporine A		hCoV-OC43	LLC-MK2	0.37uM	10uM	27.03.	33324406
		RVFV	A549	5.78uM	13.45uM	>2	29698664
		SARS-CoV-2	VeroE6	3.048uM	>90uM	>29.53.	32679055
DABMA		RABV	BSR	7.8uM	41uM	5.4.	33444703
		RABV	BSR	20uM	41uM	2.1.	33444703
Dalbavancin		EV1	RPE	18.73uM	>30uM	>2	29698664
		EV1	RPE	3.23uM	>30uM	>2	29698664
		EV1	RPE	9.72uM	>30uM	>2	29698664
		SARS-CoV-2	VeroE6	0.01207uM	>3.2uM	>265	33262453
Dapivirine		FLUAV	MDCK	1.3uM (+-0.2)	14.3uM (+-0	11.0.	28778830
		FLUAV	MDCK	1.8uM (+-0.3)	14.3uM (+-0	7.9.	28778830
		FLUAV	MDCK	1.1uM (+-0.1)	14.3uM (+-0	13.0	28778830
		FLUAV	MDCK	1.2uM (+-0.2)	14.3uM (+-0	11.9.	28778830
		FLUAV	MDCK	1.8uM (+-0.2)	14.3uM (+-0	7.9.	28778830
		FLUAV	MDCK	1.2uM (+-0.1)	14.3uM (+-0	11.9.	28778830
		FLUAV	MDCK	1.4uM (+-0.1)	14.3uM (+-0	10.2.	28778830
		FLUAV	MDCK	1.4uM (+-0.2)	14.3uM (+-0	10.2.	28778830
		FLUAV	MDCK	1.1uM (+-0.3)	14.3uM (+-0	13.0.	28778830
		FLUAV	MDCK	1.4uM (+-0.2)	14.3uM (+-0	10.2.	28778830
		FLUAV	MDCK	2.2uM (+-0.3)	14.3uM (+-0	6.5.	28778830
		FLUAV	MDCK	1.3uM (+-0.4)	14.3uM (+-0	11.0.	28778830
		FLUAV	MDCK	1.5uM (+-0.2)	14.3uM (+-0	9.5.	28778830
		FLUBV	MDCK	1.2uM (+-0.3)	14.3uM (+-0	11.9.	28778830
		FLUBV	MDCK	1.1uM (+-0.1)	14.3uM (+-0	13.0.	28778830
Darunavir		HIV-1	MT-2	0.0042uM (+-0.0	152.7uM (+-	36,357.	23403426
		HIV-1	MT-2	0.0039uM (+-0.0	83.1uM	21,310.	17371811
		HIV-2	MT-2	0.0088uM (+-0.0	19.8uM (+-2	2,250.	23403426
		HIV-2	MT-2	0.0068uM (+-0.0	83.1uM	12,220.	17371811
		HIV-2	MT-2	0.0080uM (+-0.0	83.1uM	10,387	17371811
Dibucaine		EV1	RPE	2.05uM	>30uM	>14	29698664
		EV1	RPE	0.96uM	>30uM	>31	29698664
Didanosine		HIV-1	MT-4	8.86uM (+-2.89)	>211uM	>24	22870806
		HIV-2	MT-4	16uM (+-5.16)	>211uM	>13	22870806
Digitoxin		HSV-1	Vero	0.05uM	10.66uM	213.	18353452
		HSV-1	Vero	0.05uM	10.66uM	213.	18353452
		HSV-2	Vero	0.05uM	10.66uM	213.	18353452
		MERS-CoV	Vero	0.16uM (+-0.000	>25uM	>156.3	33918958
		SARS-CoV-2	VeroE6	0.6uM	55.00uM	91.7.	33917313
		SARS-CoV-2	hA549	<0.03uM	0.3uM	10.	34773067

Diltiazem		SARS-CoV-2	VeroE6	>45uM	424uM	>9.42.	32679055
Diphenhydramine		EBOV	A549	2.6uM (+-0.6)	52.6uM (+-9	20.	29981374
		MARV	A549	7.6uM (+-1.6)	52.6uM (+-9	7.	29981374
Doxycycline		DENV	Vero	40uM (+-3)	125uM (+-4)	3.1.	24522138
		DENV-2	Vero	52.3uM (+-6.2.)	100uM	1.9.	24142271
		fCoV	CRFK	9.2uM	22.5uM	2.5.	33799985
		JEV	BHK-21	49.5uM	213.7uM	4.3.	26972394
		MHV	RAW264	9.60uM	72.07uM	7.50.	34395311
		PRRSV	MARC-145	0.56uM	4.34uM	7.6.	28903466
		SARS-CoV-2	VeroE6	5.1uM	636.1uM	124.73	33291642
		SARS-CoV-2	VeroE6	4.5uM (+-2.9)	>100uM	22.2.	33142770
		VSV	H1229	0.41uM	19uM	46.	26459887
Diphyllin		ZIKV	HT1080	0.06uM	46.11uM	768.	31501074
		ZIKV	CHME3	0.021uM	17.6uM	83.	31501074
Efavirenz		HIV-1	MT-4	0.007uM (+-0.00	>6.34uM	>938	25600073
		HIV-1	MT-4	0.235uM (+-0.16	>6.34uM	>27	25600073
		HIV-1	CEM-SS	0.0092uM	5.55uM	603.	22057085
		HIV-1	MT-4	0.098uM	3.22uM	32.8.	22057085
		HIV-1	MT-4	0.77uM	3.22uM	4.2.	22057085
Emetine		EBOV	Huh7	0.25uM	>0.5.	>2.	29939303
		EBOV	293T/17	0.2uM	>0.5uM	>2.5.	29939303
		fCoV	Fcwf-4	0.011uM (+-0.00	0.03uM (+-0	2.7.	32563698
		FLUAV	MDCK	14.7uM		1.5.	24096239
		hCoV-OC43	HCT-8	0.21uM (+-0.07)	>50uM	>238	32563698
Emodin		CV-B4	Hep-2	14.10uM (+-0.74	61.35uM (+-	4.35 (+-0.6	1310583
		CV-B4	Hep-2	12.06uM (+-1.85	61.35uM (+-	5.09 (+-0.3	1310583
		HCMV	MRC-5	4.9uM (+-0.38)	9.2uM (+-1.3	1.9.	25499125
		HCMV	MRC-5	3.7uM	12.6uM	3.4.	1310583
		JEV	BHK-21	17.39uM (+-0.58	20.18uM (+-	1.2.	24395532
Enoxacin		MERS-CoV-2	Vero	342.9uM (324.0-	>600uM	>1.8	33374514
		SARS-CoV-2	Vero	126.4uM (88.325	>600uM	>4.7	33374514
		SARS-CoV-2	A549/ACE2	226.8uM (210.1-	>600uM	>2.7	33374514
Eptifibatide		CHIKV	Vero	4.01uM (+-1.96)	1,657uM	413.	32380148
Erlotinib		CHIKV	Vero	0.7uM	>30uM	42.9.	28240606
		CPXV	NHEK	176nM	>50,000nM	>284	33198108
		CPXV	NHEK	1239nM	15,100nM	1.2.	33198108
		DENV	MDDC	4.07uM	>50uM	12.3.	29753658
		DENV-1	BHK-21	1.9uM	>20uM	10.5.	28240606
		DENV-2	Huh7	2.5uM	>50uM	8.	28240606
		DENV-2	BHK-21	>13	>50uM	3.8.	28240606
		DENV-3	BHK-21	1.3uM	>20uM	15.4.	28240606
		DENV-4	BHK-21	3.9uM	>20uM	5.1.	28240606
		EBOV	Huh7	12.9uM	>30uM	2.3.	28240606
		EBOV	Vero	2.88uM	15uM	5.2.	28240606
		EBOV	Huh7	>40uM	>40uM	>1.	29939303
		EBOV	293T/17	>10uM	>10uM	>1.	29939303
		HCV	Huh7.5	0.6uM	>15uM	25.	28240606
		HIV-1	HeLa/TZM-	2uM	>20uM	>10	28240606
		JUNV	Vero	1.7uM	>20uM	>11.7	28240606
		RSV	Hep2	<0.12uM	>30uM	>250	28240606
		ZIKV	Huh7	6.28uM	>30uM	>4.7	28240606
Esomeprazole		HIV-1	293T	75uM	75uM	1.0	32132561
Etravirine		HIV-1	MT-4	0.0095uM (+-0.0	>4.59uM	>485	25600073
		HIV-1	MT-4	0.025uM (+-0.00	>4.59uM	>184	25600073
		HIV-2	MT-4	>4.5947uM	>4.59uM	<1.	25600073
Ezetimibe		HIV-1	TZM-bl	13.19uM	>30uM	>2	29698664
		ZIKV	RPE	0.09uM	>30uM	>333	29698664
Favipiravir		EBOV	VeroE6	68.8uM	>1000uM	14.5.	24583123
		EBOV	Huh7	>20uM	>20uM	>1.	29939303
		EBOV	293T/17	>20uM	>20uM	>1.	29939303
		FLUAV	MDCK	1.0uM (+-0.9)	>6.370uM	6.37.	15728892
		SARS-CoV-2	VeroE6	61.88uM	>400uM	>6.46	32020029
		SARS-CoV-2	VeroE6	>100uM	631uM	>6.31	32679055
		SARS-CoV-2 (	HEK293T	67.61uM	> 300uM	4.4.	33894278
		SFTSV	Vero	25.0uM (+-9.3)	>100uM	4.	29096526
Fenofibrate		SARS-CoV-2	VeroE5	19.8uM (+-8)	>100uM	5.1.	33841165
Fenretinide		CHIKV	Huh7	0.5uM (+-0.01)	15.6uM (+-0	29.9.	26752081
		CHIKV	BHK-21	3.1uM (+-0.5)	31.5uM (+-0	10.3.	26752081
Fiacitabine		CPXV	Vero	48.5uM	>269uM	5.5.	16530858
		CPXV	Vero	24.8uM	>269uM	10.8.	16530858
		EBV	P3HR-1	0.4uM (+-0.3)	22uM (+-8)	55.	25267682
		HSV	OMK	2.4uM (+-1.1)	>_49uM	<_20.	25267682
		HSV-1	HFF	0.16uM	>269uM	1,681.	16530858
		HSV-1	HFF	21.6uM	>269uM	12.5.	16530858
		KSHV	BCBL-1	1.1uM (+-0.8)	49uM (+-13)	45.	25267682
		MHV-68	NIH3T3	1.1uM (+-0.5)	30uM (+-30)	27.	25267682
		RRV	RF	<1.3.	>_383uM	>294	25267682
Filociclovir		hAdV-19/-64	A549	1.86uM (+-2.58)	>100uM	>53	33810229
		hAdV-3	A549	0.78uM (+-0.21)	>100uM	>128	33810229
		hAdV-37	A549	3.56uM (+-2.67)	>100uM	>28	33810229
		hAdV-4	HFF	2.34uM (+-0.16)	>150uM	>64	32816736
		hAdV-4	A549	4.31uM (+-0.28)	>100uM	>23	33810229
		hAdV-5	HFF	2.2uM (+-0.4)	>100uM	>45	32816736
		hAdV-5	A549	4.68uM (+-0.29)	>100uM	>21	33810229
		hAdV-6	A549	3.6uM (+-0.17)	>100uM	>27	32816736
		hAdV-7	HFF	1.24uM (+-0.38)	>150uM	>120	32816736
		hAdV-7a	A549	2.12uM (+-2.59)	>100uM	>47	33810229
		hAdV-8	HFF	2.49uM (+-0.83)	>150uM	>60	32816736
		hAdV-8	A549	0.50uM (+-0.08)	>100uM	>200	33810229
		HCMV	HFF	1.4uM	>100uM	>70	23669381
		HSV-1	HFF	47uM (+-19)	>100uM	>2.	23669381
		HSV-1	Vero	>100uM	>1000uM	>10	23669381
		MCMV	HFF	0.3uM	>100uM	>333	23669381
		VZV	HFF	24.0uM	>100uM	>4	23669381
Fluoxetine		EV-1	RPE	0.72uM	7.33uM	2	29698664
		EV-1	RPE	0.34uM	4.02uM	2	29698664
		EV-1	RPE	2.16uM	4.02uM-7.33	2	29698664
		hCoV-OC43	LLC-MK2	3.16uM	>10uM	>3.16	33324406
		HCV	Huh7.5.1 c	0.45uM (+-0.27)	10.25uM (+-	23.	24709263
Fluphenazine		EBOV	Vero	12uM	34uM	2.8.	27622822
Fluvastatin		HCMV	HAEC	0.03uM (+-0.03)	0.3uM (+-0.0	10.	24976258
		HCMV	MRC-5	0.68uM (+-0.37)	1uM (+-0.01	1.5.	24976258
Foscarnet		KSHV	BCBL-1	177uM (+-57)	>_702uM	>_3.9	9420052

Galidesivir		CHIKV	HeLa	>100uM	>100uM	>1.	24590073
		DENV2	HeLa	32.8uM	>296uM	>9	24590073
		EBOV	HeLa	11.8uM	>100uM	>8.5	24590073
		EEEV	HeLa	43.2uM	>100uM	>2.	24590073
		FLUAV	HeLa	10.7uM	>296uM	>27.	24590073
		hRhV-2	HeLa	3.4uM	>296uM	>87.	24590073
		JEV	HeLa	43.6uM	>100uM	>2.	24590073
		JUNV	HeLa	42.2uM	>100uM	>2.	24590073
		LACV	HeLa	13.4uM	>100uM	>7.5	24590073
		LASV	HeLa	43.0uM	>100uM	>2.	24590073
		MARV	HeLa	4.4uM	242uM	55.	24590073
		MARV	HeLa	6.7uM	255uM	38.1	24590073
		MARV	HeLa	5.0uM	242uM	48.4	24590073
		MERS-CoV	HeLa	68.4uM	>100uM	>1.5	24590073
		MeV	HeLa	6.19uM	>296uM	>47.8	24590073
		NiV	HeLa	41.9uM	>100uM	>2	24590073
		RSV	HeLa	11.0uM	>89uM	>8	24590073
		RVFV	HeLa	41.6uM	>100uM	>2	24590073
		SARS-CoV	HeLa	57.7uM	>296uM	>5.	24590073
		SUDV	HeLa	3.4uM	>100uM	>29	24590073
		VEEV	HeLa	>100uM	>100uM	>1	24590073
		WEEV	HeLa	21.3uM	>100uM	>4.7.	24590073
		YFV	HeLa	14.1uM	>100uM	>7.	24590073
Ganciclovir		EBV	P3HR-1	1.6uM	43.1uM	26.8.	9875407
		EBV	P3HR-1	1.18uM	43.1uM	36.5.	9875407
		EBV	P3HR-1	4.3uM (+-3.5)	>700uM	>163.	25267682
		HCMV	HEL	2.77uM (+-0.53)	231.22uM (+	83.5.	33479570
		HCMV	HEL	1.67uM (+-0.48)	231.22uM (+	138.5.	33479570
		HCMV	HEL	6.13uM (+-2.38)	>_445uM (+-	72.6.	30497281
		HCMV	HEL	4.83uM (+-1.88)	>_445uM (+-	92.	30497281
		HCMV	HEL	10.0uM (+-10.2)	>_317uM (+-	31.7.	30497281
		HCMV	HEL	5.5uM (+-4.4)	>_317uM (+-	57.6.	30497281
		HCMV	HEL	0.63uM	1,759uM	2,792.	8629816
		HCMV	MRC-5	0.91uM	979uM	1100.	17239594
		HCMV	HFF	3.6uM (+-1.4)	>392uM	>108	15728900
		HHV-6A	CBMC	2.7uM	>783uM	>290	9864048
		HHV-6A	CBMC	2.4uM	>783uM	>326	9864048
		HHV-6B	CBMC	4.9uM	>783uM	>159	9864048
		HHV-6B	CBMC	2.7uM	>783uM	>290	9864048
		HHV-6B	CBMC	6.3uM	>783uM	>124	9864048
		HHV-6B	CBMC	6.9uM	>783uM	>113	9864048
		HHV-7	CBMC	21.5uM	>783uM	>36	9864048
		HHV-7	CBMC	>31uM	>783uM	>25	9864048
		HHV-7	CBMC	29.4uM	>783uM	>26	9864048
		HSV	OMK	82uM (+-35)	>900uM	>11.	25267682
		HSV-1	HEL	0.028uM (+-0.01	>100uM (MC	>3,571	30497281
		HSV-1	HEL	1.47uM (+-1.60)	>100uM (MC	>68	30497281
		HSV-1	HEL	0.020uM (+-0.01	>100uM (MC	>5,000	30497281
		HSV-1	HEL	0.90uM (+-0.14)	>100uM (MC	>111	30497281
		HSV-1	MRC-5	0.0118uM	>3920uM	>332,203	7822458
		HSV-1	MRC-5	0.0192uM	>3920uM	>204,166	7822458
		HSV-2	HEL	0.032uM (+-0.00	>100uM (MC	>3,125	30497281
		HSV-2	HEL	0.045uM (+-0.04	>100uM (MC	>2,222	30497281
		HSV-2	MRC-5	0.103uM	>3920uM	>38,058	7822458
		HSV-2	MRC-5	0.0204uM	>3920uM	>192,156	7822458
		KSHV	BCBL-1	11uM (+-9)	239uM (+-86	27.1.	25267682
		KSHV	BCBL-1	8.9uM (+-3.5)	354uM (+-17	39.	9420052
		KSHV	HFF	0.4uM (+-0.5)	>392uM	>980	15728900
		MCMV	MEF	6.5uM	1,629uM	250.6	8629816
		MCMV	HFF	5.7uM (+-0.7)	>392uM	>68.8	15728900
		MHV-68	NIH3T3	18uM (+-4)	137uM (+-35	8.	25267682
		RRV	RF	31uM (+-5.1)	>900uM	>29	25267682
		VACV	HEL	>100uM	>100uM (MC	>1.	30497281
		VACV	HEL	>100uM (+-0.0)	>100uM (MC	>1.	30497281
Gefitinib		hCoV-OC43	LLC-MK2	3.29uM	>10uM	>3.34.	33324406
		SARS-CoV-2	Huh7	2.21uM	>20uM	>9.06	33116243
		VSV	Huh7	>20uM	>20uM	>1.	33116243
Gemcitabine		EV-1	RPE	0.08uM	>30uM	>4	29698664
		EV-1	RPE	6.96uM	>30uM	>4	29698664
		fLV	CRFK	25nM	0.23uM	9.2.	22258856
		FLUAV	RPE	0.068uM (+-0.00	>10uM	> 147	22910914
		FLUAV	RPE	0.25uM	>30uM	>29	29698664
		FLUAV	RPE	1.02uM	>30uM	>30	29698664
		FLUAV	RPE	0.89uM	>30uM	>32	29698664
		HCMV	HEL	0.074uM (+-0.00	0.0036uM (+	<0.1	33479570
		HCMV	HEL	0.053uM (+-0.04	0.0036uM (+	<0.1	33479570
		hRhV	HeLa	0.81uM (+.0.15)	< 50uM	61.72	28705625
		hRhV	HeLa	0.51uM (+-0.06)	< 50uM	98.04	28705625
		hRhV	HeLa	1.92uM (+-0.13)	< 50uM	26.04.	28705625
		HSV-1	RPE	0.05uM	>30uM	>500	29698664
		PoV	HeLa	0.3uM	100uM	333.	27733043
		SARS-CoV-2	Vero	>0.0032uM (+-0)	0.0043uM (+	<1.3	33479570
		SARS-CoV-2	Vero	>0.0016uM (+-0)	0.0043uM (+	<2	33479570
		SARS-CoV-2	VeroE6	1.24uM	>40uM	> 33	32432977
		VZV	HEL	0.028uM (+-0.02	0.0036uM (+	< 1	33479570
		VZV	HEL	0.054uM (+-0.01	0.0036uM (+	< 1	33479570
		ZIKV	RPE	0.01uM (+-0,00)	> 10,0uM	> 1000	28049006
		ZIKV	RPE	0.07uM	21.78uM	23	29698664
		ZIKV	RPE	0.92uM	>30uM	23	29698664
Glycyrrhizin		SARS-CoV	Vero	729uM	>24,304uM	>33	12814717
		SARS-CoV	Vero	364.5uM	>24,304uM	>67	12814717
		SARS-CoV	Vero	2,916uM	>24,304uM	>8.3	12814717
		SARS-CoV	fRhK4	>486uM	>486uM	>1.	15288617
		SARS-CoV	fRhK4	>486uM	>486uM	>1.	15288617
		SARS-CoV	VeroE6	121.5uM	>24,304uM	>200	15288617
GS-441524		fCoV	Fcwf-4	3.5uM (+-0.0)	>100uM	28.6.	32563698
		hCoV-OC43	HCT-8	6.77uM (+-0.71)	>50uM	7.4.	32563698
		hCoV-229E	HEL	0.89uM (+-0.10)	>100uM	112.4	34217752
		hCoV-OC43	HEL	1.3uM (+-0.1)	>100uM	76.9.	34217752
		SARS-CoV-1	VeroE6	1.3uM (+-0.4)	>100uM	76.9.	34217752
		SARS-CoV-2	VeroE6	0.89uM (+-0.60)	>100uM	112.	34217752
		SARS-CoV-2	Huh7	1.6uM (+-0.6)	>100uM	62.5.	34217752
Hexachlorophene		SFTSV	Vero	1.3uM (+-0.3)	24.3uM (+-3	18.7.	31027241
Homoharringtonine		fCoV	Fcwf-4	0.031uM (+-0.00	0.049uM (+-	1.6.	32563698
		hCoV-OC43	HCT-8	0.29uM (+-0.03)	7.61uM (+-0	26.2.	32563698

Hydroxychloroquine		EBOV	Vero	22uM	>50uM	>2.2.	27622822
		hCoV-OC43	LLC-MK2	5.7uM	>30uM	>5.26.	33324406
		hCoV-229E	HEL	3.9uM (+-4.3)	61uM (+-1)	15.6.	34217752
		hCoV-229E	Huh7	12uM (+-1)	30uM (+-7)	2.5.	34217752
		hCoV-OC43	HEL	1.2uM (+-1.1)	61uM (+-1)	50.8.	34217752
		SARS-CoV-1	VeroE6	7.9uM (+-5.4)	<100uM	12.7.	34217752
		SARS-CoV-2	VeroE6	4.51uM	249.5uM	55.32	32194981
		SARS-CoV-2	VeroE6	4.06uM	249.5uM	61.45	32194981
		SARS-CoV-2	VeroE6	17.31uM	249.5uM	14.41	32194981
		SARS-CoV-2	VeroE6	12.96uM	249.5uM	19.25	32194981
		SARS-CoV-2	Vero	8.1uM (+-2.4)	36.9uM (+-7	4.5.	33479570
		SARS-CoV-2	Vero	1.74uM (+-0.68)	36.9uM (+-7	21.2.	33479570
		SARS-CoV-2	VeroE6	4.3uM (+-1.4)	<100uM	23.3.	34217752
		SARS-CoV-2	Huh7	1.1uM (+-1.2)	30uM (+-7)	27.3.	34217752
		SARS-CoV-2	VeroE6	1.5uM (+-0.3)	20.4uM (+-1	11.	32916297
		SARS-CoV-2	VeroE6	1.5uM (+-0.3)	20.4uM (+-1	13.6.	33075512
		SARS-CoV-2	VeroE5	0.0109uM	>0.096uM	8.8.	33841165
		SARS-CoV-2	Vero	1.33uM	>30uM	>22.56.	33324406
		ZIKV	RPE	22.99uM	>30uM	>1	29698664
		ZIKV	RPE	0.06uM	>30uM	>1	29698664
Hydroxyzine		EBOV	A549	3.4uM (+-2.2)	74.1uM (+-2	21.	29981374
		HCV	Huh7.5.1 c	0.26uM (+-0.13)	46.25uM (+-	178.	24709263
		MARV	A549	6.1uM (+-2.8)	74.1uM (+-2	12.	29981374
Imatinib		hCoV-OC43	LLC-MK2	6.09uM	>30uM	>4.93.	33324406
		SARS-CoV-2	VeroE6	2.5uM (+-1.0)	> 40uM	>16.2	34265358
		SARS-CoV-2	VeroE6	5.0uM	91.00uM	18.2.	33917313
Indinavir		HIV-1	MT-2	0.044uM (+-0.00	69.8uM (+-3	1,600.	18955518
		HIV-1	MT-2	0.047uM (+-0.00	70.3uM (+-4	1,500.	14506019
		HIV-1	MT-2	0.048uM (+-0.00	69.8uM	1,450.	17371811
		HIV-2	MT-2	0.054uM (+-0.00	69.8uM	1,292.	17371811
		HIV-2	MT-2	0.014uM (+-0.00	70.3uM (+-4	5,021.	14506019
		HIV-2	MT-2	0.011uM (+-0.00	70.3uM (+-4	6,390.	14506019
		HIV-2	MT-2	0.024uM (+-0.00	69.8uM	2,908.	17371811
Indomethacin		SARS-CoV-2	VeroE6	8.51uM	671.7uM	78.93	33291642
INF-a	IFN-a B2	HCV	AVA5	2.5IU/mL (+-0.2)	>10000IU/m	>4000	15652968
	IFN-a A	HCV	AVA5	7.2IU/mL (+-1.8)	>1000IU/mL	>138	15652968
	IFN-a C	HCV	AVA5	>1000IU/mL	>1000IU/mL	>1.	15652968
	IFN-a D	HCV	AVA5	>1000IU/mL	>1000IU/mL	>1.	15652968
	IFN-a F	HCV	AVA5	>1000IU/mL	>1000IU/mL	>1.	15652968
	IFN-a G	HCV	AVA5	530IU/mL (+-97)	>1000IU/mL	>1.9	15652968
	IFN-a H2	HCV	AVA5	127IU/mL (+-16)	>1000IU/mL	>7.9	15652968
	IFN-a I	HCV	AVA5	124IU/mL (+-25)	>1000IU/mL	>8.1	15652968
	IFN-a J1	HCV	AVA5	545IU/mL (+-32)	>1000IU/mL	>1.8	15652968
	IFN-a K	HCV	AVA5	456IU/mL (+-91)	>1000IU/mL	>2.2	15652968
	IFN-a WA	HCV	AVA5	>1000IU/mL	>1000IU/mL	>1.	15652968
	IFN-a 4b	HCV	AVA5	615IU/mL (+-105	>1000IU/mL	>1.6	15652968
		JEV	Vero76	706.94KU/mL	>5000KU/mL	>7.1.	27919709
		SARS-CoV	fRhK4	5000IU/mL	>10,000IU/m	>2	15288617
		SARS-CoV	fRhK4	5000IU/mL	>10,000IU/m	>2	15288617
		SARS-CoV	fRhK4	39IU/mL	>10,000IU/m	>250	15288617
	IFN-2a	SARS-CoV-2	VeroE5	8.1IU/mL (+-0.7x	10,000IU/mL	>1,234.	33841165
		WNV	Vero76	1170.03kU/mL	>5000kU/mL	>4.3.	27919709
		ZIKV	Vero76	999.50kU/mL	>5000kU/mL	>5	27919709
		ZIKV	Vero76	532.58kU/mL	>5000kU/mL	>9.4	27919709
	IFN-a2b	ZIKV	Vero	12.78IU/mL (+-1	>75,000IU/m	>5868.59	28185815
IFN-b		HCV	AVA5	2.7IU/mL (+-0.2)	>10000IU/m	>3703	15652968
		JEV	Vero76	102.42kU/mL	>5000kU/mL	>48.8.	27919709
		MERS-CoV	Calu-3	175IU/mL	>2800IU/mL	>16.	31924756
	IFN-b 1a	SARS-CoV	fRhK4	2500-10,000IU/m	>10,000IU/m	>4	15288617
	IFN-b 1a	SARS-CoV	fRhK4	2000IU/mL	>10,000IU/m	>5.	15288617
	IFN-b 1a	SARS-CoV	fRhK4	625IU/mL	>10,000IU/m	>16	15288617
	IFN-b 1a	SARS-CoV	fRhK4	625IU/mL	>10,000IU/m	>16.	15288617
		WNV	Vero76	334.01kU/mL	>5000kU/mL	>15	27919709
		ZIKV	Vero76	139.14kU/mL	>5000kU/mL	>35	27919709
		ZIKV	Vero76	51.97kU/mL	>5000kU/mL	>96	27919709
	IFN-B1a	ZIKV	Vero	0.58IU/mL (+-0.1	>75,000IU/m	>32,327.59	28185815
	IFN-B1a	ZIKV	Vero	8.00IU/mL (+-2.5	>75,000IU/m	>1953.13	28185815
	IFN-B1b	ZIKV	Vero	1.14IU/mL (+-0.3	>15,625IU/m	>2741.23	28185815
IFN-g		HCV	AVA5	0.194IU/mL (+-0.	>10000IU/m	>51546	15652968
		SARS-CoV-2	VeroE5	1,120IU/mL	>10,000IU/m	>9	33841165
	IFN-y1b	ZIKV	Vero	13.39IU/mL (+-5.	>50,000IU/m	>3734.13	28185815
IL7		HCV	AVA5	100IU/mL	>100IU/mL	>1.	15652968
Ivermectin		CHIKV	Huh7	1.9uM (+-0.8)	8uM (+-0.2)	4.1.	26752081
		CHIKV	BHK-21	0.6uM (+-0.1)	37.9uM (+-7	62.4.	26752081
		MHV	RAW264	1.26uM	37.38uM	29.64.	34395311
Lamivudine		EBOV	Huh7	>50uM	>50uM	>1.	29939303
		EBOV	293T/17	1.6uM	>50uM	31.2.	29939303
		HBV	HepG2.2.2.	0.0807uM	230uM	2850.	17074481
		HBV	PXB	0.05uM (+-0.01)	>100uM	>2000	32084506
		HIV-1	PXB	0.66uM (+-0.15)	>100uM	>2000	32084506
		HIV-1	MT-4	3.12uM (+-0.76)	>87.24uM	>28	25600073
		HIV-2	MT-4	0.29uM (+-0.02)	>87.24uM	>9	25600073
Lanatoside C		MERS-CoV	Vero	0.19uM (+-0.010	>25uM	>131.6	33918958
		SARS-CoV-2	VeroE6	0.1uM	80.00uM	800.	33917313
Leflunomide		BKPyV	HSG	2.3uM	20.8uM	9.1.	25790744
Lopinavir		hCoV-229E	Huh7	6.6uM (+-1.1)	37.6uM (+-1	5.7.	24841269
		HIV-1	MT-2	0.007uM (+-0.00	>100uM	>14,300.	17371811
		HIV-2	MT-2	0.0049uM (+-0.0	>100uM	>14,300.	17371811
		HIV-2	MT-2	0.0026uM (+-0.0	>100uM	>14,300.	17371811
		MERS-CoV	Calu-3	11.6uM	>50uM	>4.3.	31924756
		MERS-CoV	Huh7	8.0uM (+.1.5)	24.4uM (+-1	3.1.	24841269
		SARS-CoV	VeroE6	17.1uM (+-1.0)	< 32uM	< 2	24841269
		SARS-CoV-2	VeroE6	5.246uM	45uM	8.57.	32679055
		ZIKV	RPE	12.01uM	>30uM	>1	29698664
		ZIKV	RPE	24.08uM	>30uM	>1	29698664
Luteolin		hCoV-OC43	LLC-MK2	1.12uM	3.5uM	3.13.	33324406
Mefloquine		DENV	BHK-21	4.36uM (+-0.31)	17.72uM (+-	4.06.	27889529
		FCoV	CRFK	7.89uM	15.13uM	1.92uM	25465182
		FCoV	CRFK	0.74uM	15.13uM	20.45uM	25465182
		FCoV	CRFK	5.71uM	15.13uM	2.65.	25465182
		hCoV-OC43	LLC-MK2	3.62uM	12.52uM	3.46.	33324406
		hCoV-229E	HEL	1.1uM (+-0.4)	6.2uM (+-0.0	5.6.	34217752
		hCoV-229E	Huh7	1.4uM (+-0.0)	5.9uM (+-0.0	4.2.	34217752
		hCoV-OC43	HEL	0.75uM (+-0.40)	6.2uM (+-0.0	8.3.	34217752
		SARS-CoV-1	VeroE6	2.9uM (+-0.8)	7.0uM (+-0.0	2.4.	34217752
		SARS-CoV-2	VeroE6	2.2uM (+-0.0.)	7.0uM (+-0.0	3.2.	34217752
		SARS-CoV-2	Huh7	>_3.0uM	5.9uM (+-0.0	2.	34217752
		SARS-CoV-2	VeroE6	1.8uM (+-1.0)	14.4uM (+-2	8	32916297
		SARS-CoV-2	Vero	10.01uM	22.36uM	2.23.	33324406
		ZIKV	BHK-21	3.95uM (+-0.21)	20.44uM (+-	5.17.	27889529
Merimepodib		ZIKV	Huh7	0.6uM (+-0.2)	> 10uM	> 17	29126899
Minocycline		HIV-1	TZM-bl	6.84uM	>30uM	>6	29698664
		JEV	BHK-21	68.8uM	692.5uM	10.	26972394
		RVFV	A549	9.52uM	>100uM	>11	29698664
MK2206		FLUAV	NCI-H1666	0.79uM (+-0.26)	58.51uM (+-	74.	24752266
		FLUAV	NCI-H1666	0.99uM (+-0.03)	58.51uM (+-	59	24752266
		FLUAV	NCI-H1666	4.55uM (+-0.67)	58.51uM (+-	12	24752266
		FLUAV	NCI-H1666	3.93uM (+-1.45)	58.51uM (+-	15	24752266
		FLUAV	NCI-H1666	3.36uM (+-0.64)	58.51uM (+-	17	24752266
		FLUAV	NCI-H1666	0.96uM (+-0.01)	58.51uM (+-	61	24752266
		FLUAV	NCI-H1666	1.11uM (+-0.02)	58.51uM (+-	52	24752266
Monensin		hCoV-OC43	LLC-MK2	0.07uM	>10uM	>142.86	33324406
		JEV	Vero76	>3.125uM	2.3uM	<1	27919709
		SARS-CoV-2	Vero	0.6019uM	>30uM	>49.84.	33324406
		WNV	Vero76	>50uM	2.3uM	<0.1	27919709
		ZIKV	Vero76	>3.125uM	2.3uM	<1.	27919709
		ZIKV	Vero76	>3.125uM	2.3uM	<1.	27919709
Mycophenolic acid		BIRFLU	MDCK	1.73uM	>50uM	>28.90	31941776
		BIRFLU	MDCK	1.73uM	>50uM	>28.90	31941776
		BIRFLU	A549	22.71uM	>50uM	>2.20	31941776
		BIRFLU	A549	22.71uM	>50uM	>2.20	31941776
		CV-B4	Vero	>100uM	>100uM (MC	>1.	28477572
		CHIKV	RPE	0.08uM	>30uM	>333	29698664
		CHIKV	RPE	0.09uM	>30uM	>333	29698664
		EBOV	Huh7	1.53uM	>20uM	>13.07.	29939303
		EBOV	293T/17	0.2uM	>20uM	>100.	29939303
		FLUAV	MDCK	2.04uM	>50uM	>24.51	31941776
		FLUAV	MDCK	2.04uM	>50uM	>24.51.	31941776
		FLUAV	MDCK	0.83uM	>50uM	29.91.	31941776
		FLUAV	MDCK	0.83uM	>50uM	>50.51	31941776
		FLUAV	16HBE	0.21uM	>50uM	>238.10	31941776
		FLUAV	16HBE	0.21uM	>50uM	>238.10	31941776
		FLUBV	MDCK	0.79uM	>50uM	>63.29.	31941776
		FLUBV	MDCK	0.79uM	>50uM	>63.29.	31941776
		hPIV-3	Vero	0.40uM	>100uM (MC	>250.	28477572
		LCMV	Vero	1.382uM	103.4uM	74.8.	33183004
		LCMV	BHK-21	0.5665uM	49.26uM	86.9.	33183004
		MERS-CoV	Vero	0.17uM (+-0.03)	< 32uM	< 195.1	24096239
		PTV	Vero	20uM	>100uM (MC	>5.	28477572
		hRoV	Vero	1.8uM	>100uM (MC	>55.5.	28477572
		RRV	RPE	3.19uM	>30uM	>9	29698664
		RRV	RPE	0.86uM	>30uM	>9	29698664
		SARS-CoV	Vero	>156uM	>156uM	>1.	12814717
		SARS-CoV	Vero76	>30uM	>30uM	>1.	16621037
		SARS-CoV	Vero76	>30uM	>30uM	>1.	16621037
		SINV	Vero	1.4uM	>100uM (MC	71.4.	28477572
		YFV	Vero	2.3uM	>100uM (MC	43.5.	28477572
		ZIKV		0.32uM (+-0.04)	5.11uM (+-0	16.	29315671
		ZIKV		0.77uM (+-0.08)	5.11uM (+-0	6.6.	29315671
		ZIKV	Vero	5.96uM	166.30uM	64.65.	32961956
		ZIKV	Vero	5.96uM	>1350.00uM	>316.52	32961956
		ZIKV	Vero	0.15uM	275.40uM	1836.00	32961956
		ZIKV	Vero	0.15uM	>1350.00uM	>9000.00	32961956
		ZIKV	Vero	0.22uM	275.40uM	1251.82	32961956
		ZIKV	Vero	0.22uM	>1350.00uM	>6136.36	32961956
		ZIKV	A549	0.65uM	>50uM	>76.92	32961956
		ZIKV	A549	0.65uM	>50uM	>76.92	32961956
		ZIKV	Vero	0.42uM	>250uM	>595.	28461070
Nafamostat		FLUAV	MDCK	1.3uM	431.8uM	332.	1510439
		FLUBV	MDCK	4.32uM	431.8uM	100.	1510439
		hPIV-3	Vero	>316uM	>316uM	>1.	1510439
		MeV	Vero	>316uM	>316uM	>1.	1510439
		RSV	HeLa	>103.6uM	>103.6uM	>1.	1510439
		SARS-CoV-2	VeroE6	22.50uM	>100uM	>4.44	32020029
Nelfinavir		HIV-1	MT-2	0.032uM (+-0.00	8.1uM	250.	17371811
		HIV-2	MT-2	0.240uM (+-0.00	8.1uM	33.8.	17371811
		HIV-2	MT-2	0.030uM (0.006)	8.1uM	270.	17371811
Niclosamide		EBOV	Vero	1.5uM	>50uM	>33	27622822
		fCoV	Fcwf-4	0.29uM (+-0.02)	0.23uM (+-0	<1	32563698
		hCoV-OC43	HCT-8	1.36uM (+-0.56)	>50uM	36.8.	32563698
		MERS-CoV	Vero	0.55uM (+-0.363	>25uM	>45.5	33918958
		SARS-CoV-2	VeroE6	0.16uM	204.61uM	1278.81	33291642
		SARS-CoV-2	VeroE6	1.1uM	>100uM	90.9.	33917313
Nifedipine		SFTSV	Vero	98uM	>250uM	>2.6.	31444469
Nitazoxanide		hCoV-OC43	HCT-8	28.6uM (+-7.44)	>50uM	1.8.	32563698
		SARS-CoV-2	VeroE6	2.12uM	35.53uM	>16.76	32020029
		SARS-CoV-2	VeroE6	1.29uM	665.15uM	515.62	33291642
Novobiocin		KSHV	BCBL-1	27.55uM	871uM	31.62.	22106228
Obatoclax		BIRFLU	MDCK	0.42uM	0.23uM	0.55.	31941776
		BIRFLU	MDCK	0.42uM	15.43uM	36.74.	31941776
		FLUAV	RPE	0.014uM (+-0.00	>10uM	> 714	22910914
		LCMV	A549	0.01uM	0.57uM	113.60	34586865
		SARS-CoV-2	VeroE6	0.067uM	7.8uM	116.	33670363
		ZIKV	RPE	0.04uM (+-0.01)	2,6uM (+-0.4	65	28049006
		ZIKV	Vero	0.63uM	17.57uM	27.89	32961956
		ZIKV	Vero	0.63uM	60.44uM	95.94	32961956
		ZIKV	Vero	0.37uM	17.57uM	47.49.	32961956
		ZIKV	Vero	0.37uM	60.44uM	163.35.	32961956
		ZIKV	Vero	0.41uM	17.57uM	42.85.	32961956
		ZIKV	Vero	0.41uM	60.44uM	147.41.	32961956
		ZIKV	A549	0.64uM	>50uM	>78.13	32961956
		ZIKV	A549	0.64uM	>50uM	>78.13	32961956
Oritavancin		RVFV	A549	4.49uM	75.81uM	>17	29698664
Oseltamivir		FLUAV	MDCK	197uM	>500uM	2.5.	25600073
		FLUAV	MDCK	101uM	>500uM	5.	25600073
		FLUAV	MDCK	>500uM	>500uM	>1.	25600073
		FLUAV	MDCK	>500uM	>500uM	>1.	25600073
		FLUAV	MDCK	0.56uM	>500uM	>892.9.	25600073
		FLUAV	MDCK	0.64uM	>500uM	>781.	25600073
		FLUAV	MDCK	>80uM	>80uM	>1.	25147619
		FLUAV	MT-4	0.0021uM (+-0.0	13.451uM (+	6,405.	22057085
		FLUAV	MT-4	0.0051uM (+-0.0	13.451uM (+	2,637.	22057085
		FLUAV	MT-4	0.002uM (+-0.00	26.2uM (+-0	13,100.	22057085
		FLUAV	MT-4	0.005uM (+-0.00	26.2uM (+-0	5,240.	22057085
		FLUAV	MDCK	37uM	657.2uM	17.75.	33673431
		FLUAV	MDCK	70.9uM	657.2uM	9.27.	33673431
		FLUAV	MDCK	0.0024uM	>20uM	2,352	28778830
		FLUBV	MDCK	>500uM	>500uM	>1.	25600073
		FLUBV	MDCK	>500uM	>500uM	>1.	25600073
		FLUBV	MDCK	178.8uM	657.2uM	3.67.	33673431
		FLUBV	MDCK	141.4uM	657.2uM	4.64.	33673431
		FLUBV	MDCK	0.2659uM	>20uM	75.2.	28778830
Ouabain		SARS-CoV-2	hA549	0.036uM	0.39uM	10.8.	34773067

Penciclovir		EBV	P3HR-1	4.7uM (+-1.6)	>700uM	>149.	25267682
		HCMV	MRC-5	59.23uM	631uM	10.7.	9661001
		HHV-6A	CBMC	33.6uM	>789uM	>23	9864048
		HHV-6A	CBMC	30uM	>789uM	>26	9864048
		HHV-6B	CBMC	102.6uM	>789uM	>7.7.	9864048
		HHV-6B	CBMC	30.8uM	>789uM	>25.	9864048
		HHV-6B	CBMC	55.3uM	>789uM	>14.	9864048
		HHV-6B	CBMC	63.2uM	>789uM	>12.	9864048
		HHV-7	CBMC	418.5uM	>789uM	>2.	9864048
		HHV-7	CBMC	>505uM	>789uM	>1.5	9864048
		HHV-7	CBMC	>505uM	>789uM	>1.5	9864048
		HSV	MRC-5	947.6uM	631uM	<1	9661001
		HSV	MRC-5	908uM	631uM	<1	9661001
		HSV	OMK	367uM (+-47)	308uM (+-67	1	25267682
		HSV-1	MRC-5	0.039uM	>394uM	>10,100	8707740
		HSV-1	MRC-5	2.37uM	>394uM	>166	8707740
		HSV-1	MRC-5	3.16uM	>394uM	>124.7.	8707740
		HSV-1	HEL	5.92uM	1,145uM	190.	9661001
		HSV-1	MRC-5	2.76uM	631uM	230.	9661001
		HSV-1	MRC-5	2.1uM	631uM	300.5	9661001
		HSV-1	MRC-5	3.31uM	631uM	190.6	9661001
		HSV-2	HEL	10.7uM	1,145uM	110.	9661001
		HSV-2	MRC-5	4.74uM	631uM	130.	9661001
		HSV-2	MRC-5	8.7uM	631uM	72.5	9661001
		HSV-2	MRC-5	5.9uM	631uM	106.9	9661001
		KSHV	BCBL-1	201uM (+-43)	138uM (+-24	1	25267682
		KSHV	BCBL-1	43uM (+-7.4)	132uM (+-54	3.0.	9420052
		MHV-68	NIH3T3	115uM (+-36)	91uM (+-43)	1	25267682
		RRV	RF	396uM (+-0)	170uM (+-10	<1	25267682
		SARS-CoV-2	VeroE6	95.96uM	>400uM	>4.17	32020029
		SARS-CoV-2 (	HEK293T	74.13uM	> 500uM	>6.7.	33894278
		VZV	HEL	22.1uM	1,145uM	52.	9661001
		VZV	MRC-5	2.7uM	631uM	230.	9661001
		VZV	HEL	55.3uM	1,145uM	20.7.	9661001
Pentosan polysulfate		FLUAV	MDCK	>165uM	>165uM	>1.	22197247
		FLUAV	MDCK	>165uM	>165uM	>1.	22197247
		FLUAV	MDCK	>165uM	>165uM	>1.	22197247
		FLUBV	MDCK	>165uM	>165uM	>1.	22197247
		FLUBV	MDCK	>165uM	>165uM	>1.	22197247
Pirlindole		EV1	RPE	2.71uM	>30uM	11	29698664
		EV1	RPE	8.92uM	28.52uM	3.2.	29698664
Prochlorperazine		EBOV	Vero	11uM	43uM	3.9.	27622822
Promethazine		EBOV	VeroE6	19.4uM	37uM	1.9.	26202243
		MARV	VeroE6	19.1uM	37uM	1.9.	26202243
		SARS-CoV-2	Huh7	0.96uM	>20uM	>20.77	33116243
		VSV	Huh7	>20uM	>20uM	>1.	33116243
Quinacrine		CHIKV	Huh7	>3.2uM	3.2uM	>1.	32798602
		DENV	BHK-21	7.09uM (+-1.67)	21.74uM (+-	3.06.	27889529
		DENV-2	Huh7	>3.2uM	3.2uM	>1.	32798602
		EBOV	HeLa	0.35uM (0.28-0.4	6.2uM	17.7.	26834994
		hAdV-5	HFF	>1.2uM	3.98uM	>3.3	32798602
		HCMV	HFF	>6uM	17.09.	>2.9.	32798602
		HPV-11	C-33A	>6uM	15.46uM	>2.6.	32798602
		POWV	BHK-21	>3.2uM	3.2uM	>1.	32798602
		RVFV	Huh7	>1.9uM	3.4uM	>1.8.	32798602
		SARS-CoV-2	Vero76	>7.33uM	7.33uM	>1.	33778258
		SARS-CoV-2	Vero76	>6.87uM	6.87uM	>1.	33778258
		SARS-CoV-2	Cac0-2	10.54uM	229.15uM	>22.	33778258
		SARS-CoV-2	A549-ACE2	0.1099uM (+-0.0	9.239uM (+-	84.1.	33778258
		YFV	Huh7	>3.2uM	3.4uM	>1.	32798602
		ZIKV	BHK-21	2.27uM (+-0.14)	18.59uM (+-	8.18.	27889529
Quinine		hCoV-229E	HEL	>100uM	>100uM	>1.	34217752
		hCoV-229E	Huh7	>100uM	>100uM	>1.	34217752
		hCoV-OC43	HEL	16uM (+-8)	>100uM	>6.25.	34217752
		SARS-CoV-1	VeroE6	22uM (+-13)	>100uM	>4.5.	34217752
		SARS-CoV-2	VeroE6	61uM (+-6)	>100uM	>1.6.	34217752
		SARS-CoV-2	Huh7	>100uM	>100uM	>1.	34217752
		SARS-CoV-2	VeroE6	10.7uM (+-3.0)	>100uM	>9	32916297
Raloxifene		hCoV-OC43	LLC-MK2	1.32uM	>10uM	>7.58.	33324406
		SARS-CoV-2	Vero	0.02uM	>30uM	>1500.	33324406
Regorafenib		MERS-CoV	Vero	2.31uM (+-0.083	>25uM	>10.8	33918958
		SFTSV	Vero	4.5uM (+-0.5)	31.3uM (+-0	7.0.	31027241
Remdesivir		AHFV	A549	4.15uM (+-0.48)	>10uM	2.4.	28262699
		ANDV	Huh7	6.95uM (+-3.1)	>10uM	1.4.	28262699
		CCHFV	Huh7	> 10uM	>10uM	>1.	28262699
		EBOV	Huh7	0.066uM (+-0.00	>10uM	151.	28262699
		EBOV	Huh7	0.0207uM	>10uM	476.	28262699
		EBOV	Huh7	0.0136uM (+-0.0	>10uM	714.	28262699
		EBOV	Huh7	0.0034uM	>10uM	666.	28262699
		EBOV	Huh7	0*012uM (+-0*0	3*63uM (+-2	303.	31300330
		EBOV	Huh7	0*013uM (+-0*0	3*63uM (+-2	279	31300330
		hCoV-OC43	Huh7	0.15uM (+-0.015	>10uM	>66.	31233808
		hCoV-229E	Huh7	0.024uM (+-0.18	>10uM	>400.	31233808
		hCoV-229E	HEL	0.038uM (+-0.01	>10uM	>263	34217752
		hCoV-229E	Huh7	0.0055uM (+-0.0	>_8.9uM	>1,618	34217752
		hCoV-OC43	HEL	0.075uM (+-0.04	>10uM	>133	34217752
		HeV	HeLa	0.0548uM (+-0.0	8.3uM	150.	28262699
		hPIV3	HeLa	0.0177uM (+-0.0	8.3uM	10.	28262699
		KFDV	A549	1.78uM (+-0.22)	>10uM	5.6.	28262699
		LASV	Huh7	4.49uM (+-0.48)	>10uM	2.2.	28262699
		MARV	Huh7	0.0193uM	>10uM	526.	28262699
		MARV	Huh7	0.0139uM (+-0.0	>10uM	714.	28262699
		MERS-CoV	Calu-3	0.09uM	10uM	>100.	31924756
		MHV	RAW264	2.28uM	58.12uM	17.18.	34395311
		MuV	HeLa	0.790uM (+-0.11	8.3uM	224.	28262699
		MeV	HeLa	0.0365uM (+-0.0	8.3uM	461.	28262699
		NiV	HeLa / 293	0.0449uM (+-0.0	8.3uM	184.	28262699
		NiV	HeLa / 293	0.0287uM	8.3uM	286.	28262699
		NiV	HeLa	0.047uM	8.3uM	180.	28262699
		NiV	HeLa / H35	0.324uM (+-0.00	8.3uM	259.	28262699
		OHFV	A549	1.17uM (+-0.14)	>10uM	8.3.	28262699
		pCoV	Huh7	0.02uM	>10uM	>500.	31233808
		RSV	HeLa	0.0211uM (+-0.0	8.3uM	395.	28262699
		RVFV	Huh7	> 10uM	>10uM	>1.	28262699
		SARS-CoV-2	VeroE6	1.2uM (+-0.4)	> 20uM	> 16.6	34265358
		SARS-CoV-2	VeroE6	0.77uM	>100uM	>129.87	32020029
		SARS-CoV-2	Vero	5.8uM (+-3.1)	>40uM (+-0)	6.7.	33479570
		SARS-CoV-2	Vero	1.52uM (+-1.6)	>40uM (+-0)	26.3.	33479570
		SARS-CoV-2	VeroE6	0.987uM	275uM	278.62	32679055
		SARS-CoV-2	VeroE6	1.6uM	>100uM	62.5.	33917313
		SARS-CoV-2	VeroE5	2.16nM (+-4.1)	>85nM	39.4.	33841165
		SARS-CoV-2 (	HEK293T	1.11uM	> 100uM	>90.	33894278
		TBEV	A549	2.06uM (+-0.26)	>10uM	4.8.	28262699
		VSV	HeLa	> 10uM	8.3uM	<1.	28262699

Resveratrol		hCoV-229E	MRC5	4.6uM	210uM	45.65	33672333
Ribavirin		BIRFLU	MDCK	9.50uM	>50uM	>5.26	31941776
		BIRFLU	MDCK	9.50uM	>50uM	>5.26	31941776
		BIRFLU	A549	37.37uM	>50uM	>1.33	31941776
		BIRFLU	A549	37.37uM	>50uM	>1.33	31941776
		CV-B4	Hep-2	629.99uM (+-1.6	2645.14uM (	4.20 (+-0.7	1310583
		CV-B4	Hep-2	460.91uM (+-1.2	2645.14uM (	5.74 (+-0.1	1310583
		CV-B4	HeLa	85uM	>250uM (MC	2.9.	28477572
		CV-B4	Vero	>250uM	>250uM (MC	>1.	28477572
		CPXV	Vero	125uM	>409uM	3.3.	12615299
		CPXV	LLC-MK2	43.4uM	>409uM	9.4.	12615299
		DENV	BHK	15.5uM (+-1.1)	57.2uM (+-6	3.7.	20307577
		DENV	BHK	12uM (+-1.2)	57.2uM (+-6	4.7.	20307577
		DENV	COS	12.7uM (+-1.7)	>100uM	>7.9	20307577
		DENV	Huh7	11.9uM (+-0.7)	91.9uM (+-7	7.7.	20307577
		DENV	Vero	30uM (+-6)	280nM (+-7)	9.3.	24522138
		DENV	Huh-7-DV-F	12.61uM (+-1.17	56.31uM (+-	4.47.	29698664
		EBOV	Huh7	12*0uM (+-3*05	>50uM	>4	31300330
		EBOV	Huh7	17*5uM (+-10*2	>50uM	>3	31300330
		EBOV	Huh7	>20uM	>20uM	>1.	29939303
		EBOV	293T/17	18.7uM	>20uM	>1.1.	29939303
		EBV	P3HR-1	>204uM	131uM	<1	9875407
		EBV	P3HR-1	>204uM	131uM	<1	9875407
		EV-5	Vero	90uM	>409uM	4.5.	21345236
		FLUAV	MDCK	31.6uM (9.2)	94.3uM (+-4	2.9.	15728892
		FLUAV	MDCK	7.5uM	>100uM	13.3.	25600073
		FLUAV	MDCK	9.4uM	>100uM	10..6.	25600073
		FLUAV	MDCK	8.9uM	>100uM	11.2.	25600073
		FLUAV	MDCK	12uM (+-1.2)	>100uM	8.3.	25600073
		FLUAV	MDCK	8.9uM	>100uM	11.2.	25600073
		FLUAV	MDCK	8.7uM	>100uM	11.5.	25600073
		FLUAV	MDCK	8.4uM	>100uM	11.9.	28477572
		FLUAV	MDCK	19uM	>100uM	5.2.	28477572
		FLUAV	MDCK	10uM	>100uM	10.	28477572
		FLUAV	MDCK	7.6uM	>100uM	13.2.	28477572
		FLUAV	MDCK	58.4uM	>409uM	7.	22197247
		FLUAV	MDCK	52.3uM	>409uM	7.8.	22197247
		FLUAV	MDCK	45.7uM	>409uM	8.9.	22197247
		FLUAV	MDCK	10.5uM	>100uM	9.5.	22870806
		FLUAV	MDCK	9.7uM	>100uM	10.3.	22870806
		FLUAV	MDCK	10.5uM	>100uM	9.5.	22870806
		FLUAV	MDCK	9uM	>100uM	11.1.	22870806
		FLUAV	MDCK	8.0uM	55uM (+-19)	6.9.	12367731
		FLUAV	MDCK	13uM	55uM (+-19)	4.23.	12367731
		FLUAV	MDCK	5.5uM	55uM (+-19)	10.	12367731
		FLUAV	MDCK	4.0uM	55uM (+-19)	13.75.	12367731
		FLUAV	MDCK	11uM	55uM (+-19)	5.	12367731
		FLUAV	MDCK	13uM	55uM (+-19)	4.2.	12367731
		FLUAV	MDCK	4.5uM	55uM (+-19)	12.2.	12367731
		FLUAV	MDCK	5.5uM	265uM (+-9(	48.2.	12367731
		FLUAV	MDCK	10uM	27uM (+-18)	2.7.	12367731
		FLUAV	MDCK	4.8uM	18uM (+-9)	3.75.	12367731
		FLUAV	MDCK	4.5uM	18uM (+-7)	4.	12367731
		FLUAV	MDCK	5.5uM	18uM (+-8)	3.3.	12367731
		FLUAV	MDCK	11uM	20uM (+-9)	1.2.	12367731
		FLUAV	MDCK	3.2uM	27uM (+-15)	8.4.	12367731
		FLUAV	MDCK	14uM	55uM (+-19)	3.9.	12367731
		FLUAV	MDCK	15uM	55uM (+-19)	3.6.	12367731
		FLUAV	MDCK	13uM	55uM (+-19)	4.2.	12367731
		FLUAV	MDCK	18uM	55uM (+-19)	3.	12367731
		FLUAV	MDCK	15uM	55uM (+-19)	3.6.	12367731
		FLUAV	MDCK	12uM	55uM (+-19)	4.5.	12367731
		FLUAV	MDCK	16uM	55uM (+-19)	3.4.	12367731
		FLUAV	MDCK	6uM	265uM (+-9(	44.2.	12367731
		FLUAV	MDCK	9uM	27uM (+-18)	3.	12367731
		FLUAV	MDCK	12uM	18uM (+-9)	1.5.	12367731
		FLUAV	MDCK	20uM	18uM (+-7)	<1	12367731
		FLUAV	MDCK	6uM	18uM (+-8)	3.	12367731
		FLUAV	MDCK	15uM	20uM (+-9)	1.3.	12367731
		FLUAV	MDCK	13uM	27uM (+-15)	2.1.	12367731
		FLUAV	MDCK	8.06uM	>50uM	>6.20	31941776
		FLUAV	MDCK	8.06uM	>50uM	>6.20	31941776
		FLUAV	MDCK	4.89uM	>50uM	>10.22	31941776
		FLUAV	MDCK	4.89uM	>50uM	>10.22	31941776
		FLUAV	16HBE	0.93uM	>50uM	>53.76	31941776
		FLUAV	16HBE	0.93uM	>50uM	>53.76	31941776
		FLUBV	MDCK	12uM (+-1.2)	>100uM	8.3.	25600073
		FLUBV	MDCK	8.7uM	>100uM	11.5.	25600073
		FLUBV	MDCK	4.9uM	>100uM	20.4.	28477572
		FLUBV	MDCK	3.9uM	>100uM	25.6.	28477572
		FLUBV	MDCK	23.6uM	>409uM	17.3.	22197247
		FLUBV	MDCK	22.9uM	>409uM	17.8.	22197247
		FLUBV	MDCK	9uM	>100uM	11.1.	22870806
		FLUBV	MDCK	8.4uM	>100uM	11.9.	22870806
		FLUBV	MDCK	0.11uM	>50uM	>454.55	31941776
		FLUBV	MDCK	0.11uM	>50uM	>454.55	31941776
		HCV	AVA5	>100uM	22uM (+-1.8	<1	15652968
		HCV	MT-4	16.500uM (+-0.0	39.9uM (+-0	10112.24	22057085
		hPIV-3	Vero	112uM	>250uM (MC	>2.2.	28477572
		JEV	Vero76	>50uM	>50uM	>1.	27919709
		JEV	BHK-21	81.9uM	798uM	10.0.	26972394
		MERS-CoV	Vero	9.99uM (+-2.97)	<1600uM	< 152.98	24096239
		MPXV	Vero	24.1uM	>409uM	16.9.	12615299
		MPXV	LLC-MK2	16.8uM	>409uM	24.4.	12615299
		PTV	Vero	29uM	>250uM (MC	8.6.	28477572
		hRoV	Vero	>250uM	>250uM (MC	>1.	28477572
		RSV	HeLa	5.8uM	>250uM (MC	43.1.	28477572
		SARS-CoV	Vero	>4,095uM	>4,095uM	>1.	12814717
		SARS-CoV	Vero76	210uM	283uM	>1	16621037
		SARS-CoV	Vero76	320uM	402uM	>1	16621037
		SARS-CoV-2	VeroE6	109.5uM	>400uM	>3.65	32020029
		SARS-CoV-2	VeroE6	>10uM	>100uM	10.	32679055
		SARS-CoV-2 (	HEK293T	112.20uM	> 500uM	>4.5.	33894278
		SFTSV	Vero	40.1uM (+-16.3)	>100uM	>2.5.	29096526
		SINV	Vero	>250uM	>250uM (MC	>1.	28477572
		VARV	Vero	75.4uM	>409uM	5.4.	12615299
		VARV	LLC-MK2	8.6uM	>409uM	47.6	12615299
		VARV	Vero	64.7uM	>409uM	6.3.	12615299
		VARV	LLC-MK2	13.9uM	>409uM	29.4.	12615299
		VARV	Vero	69.6uM	>409uM	5.9.	12615299
		VARV	LLC-MK2	14.7uM	>409uM	27.8.	12615299
		VARV	HeLa	50uM	>250uM (MC	5.	28477572
		VACV	Vero	>409uM	>409uM	1.0.	12615299
		VACV	LLC-MK2	97.9uM	>409uM	4.2.	12615299
		WNV	Vero76	>50uM	>50uM	>1.	27919709
		YFV	Vero	>250uM	>250uM (MC	>1.	28477572
		ZIKV	Vero76	>50uM	>50uM	>1.	27919709
		ZIKV	Vero76	48uM	>50uM	>1.	27919709

Rilpivirine		FLUAV	MDCK	>30uM	300uM	10.	28778830
Rimantadine		FLUAV	MDCK	20uM	336uM	16.8.	25600073
		FLUAV	MDCK	7.3uM	336uM	46.	25600073
		FLUAV	MDCK	>500uM	336uM	<1	25600073
		FLUAV	MDCK	>500uM	336uM	<1	25600073
		FLUAV	MDCK	0.062uM	336uM	5,419.	25600073
		FLUAV	MDCK	0.057uM	336uM	5,894.	25600073
		FLUAV	MDCK	>400uM	>400uM	>1	28477572
		FLUAV	MDCK	>400uM	>400uM	>1	28477572
		FLUAV	MDCK	0.32uM	>400uM	1,250.	28477572
		FLUAV	MDCK	0.050uM	>400uM	8,000.	28477572
		FLUAV	MDCK	32.5uM	258uM	7.9.	22870806
		FLUAV	MDCK	33.6uM	258uM	7.7.	22870806
		FLUAV	MDCK	0.15uM	258uM	1,720.	22870806
		FLUAV	MDCK	0.05uM	258uM	5,160.	22870806
		FLUAV	MDCK	0.2uM	165uM (+-15	825	12367731
		FLUAV	MDCK	2.0uM	165uM (+-15	82.5.	12367731
		FLUAV	MDCK	0.16uM	165uM (+-15	1,031.	12367731
		FLUAV	MDCK	0.4uM	165uM (+-15	412.	12367731
		FLUAV	MDCK	0.18uM	165uM (+-15	916.	12367731
		FLUAV	MDCK	0.15uM	165uM (+-15	1,100.	12367731
		FLUAV	MDCK	0.6uM	165uM (+-15	275.	12367731
		FLUAV	MDCK	0.1uM	175uM (+-15	1,750.	12367731
		FLUAV	MDCK	1.1uM	185uM (+-1(	168.	12367731
		FLUAV	MDCK	0.15uM	145uM (+-35	966.	12367731
		FLUAV	MDCK	0.7uM	135uM (+-25	192.	12367731
		FLUAV	MDCK	0.20uM	130uM (+-55	650	12367731
		FLUAV	MDCK	0.15uM	145uM (+-25	966.	12367731
		FLUAV	MDCK	0.9uM	160uM (+-2(	177.	12367731
		FLUAV	MDCK	0.82uM	165uM (+-15	201.	12367731
		FLUAV	MDCK	0.63uM	165uM (+-15	261.	12367731
		FLUAV	MDCK	0.38uM	165uM (+-15	434.	12367731
		FLUAV	MDCK	0.70uM	165uM (+-15	235.	12367731
		FLUAV	MDCK	0.54uM	165uM (+-15	289.	12367731
		FLUAV	MDCK	0.45uM	165uM (+-15	366.	12367731
		FLUAV	MDCK	0.83uM	165uM (+-15	198.	12367731
		FLUAV	MDCK	0.27uM	175uM (+-15	648.	12367731
		FLUAV	MDCK	0.48uM	185uM (+-1(	385.	12367731
		FLUAV	MDCK	0.37uM	145uM (+-35	391.	12367731
		FLUAV	MDCK	0.76uM	135uM (+-25	177.	12367731
		FLUAV	MDCK	0.49uM	130uM (+-55	265.	12367731
		FLUAV	MDCK	0.58uM	145uM (+-25	250.	12367731
		FLUAV	MDCK	0.78uM	160uM (+-2(	205.	12367731
		FLUAV	MDCK	7.6uM	230uM	30.3.	24941437
		FLUAV	MDCK	5.1uM	230uM	45.1.	24941437
		FLUAV	MDCK	0.81uM	230uM	283.9.	24941437
		FLUAV	MDCK	0.15uM	230uM	450.	24941437
		FLUAV	MDCK	29uM (+-18)	>100 (MCC)	3.5.	18954995
		FLUAV	MDCK	0.85uM (+-1.1)	>100 (MCC)	117.6.	18954995
		FLUAV	MDCK	34uM	>500uM	14.7.	24237039
		FLUAV	MDCK	38uM	>500uM	13.2.	24237039
		FLUAV	MDCK	0.84uM	>500uM	595.	24237039
		FLUAV	MDCK	0.82uM	>500uM	609.	24237039
		FLUBV	MDCK	>500uM	336uM	<1	25600073
		FLUBV	MDCK	>500uM	336uM	<1	25600073
		FLUBV	MDCK	>400uM	>400uM	>1	28477572
		FLUBV	MDCK	>400uM	>400uM	>1	28477572
		FLUBV	MDCK	>500uM	258uM	<1	22870806
		FLUBV	MDCK	>500uM	258uM	<1	22870806
		FLUBV	MDCK	>500uM	>500uM	>1	24237039
		FLUBV	MDCK	>500uM	>500uM	>1	24237039
		SARS-CoV	fRhK4	89.2uM	356.9uM	4.	15288617
Ritonavir		HIV-1	MT-2	0.038uM (+-0.00	21.3uM (+-0	560.	18955518
		HIV-1	MT-2	0.054uM (+-0.00	31.1uM	580	17371811
		HIV-2	MT-2	0.26uM (+-0.01)	31.1uM	119.6.	17371811
		HIV-2	MT-2	0.21uM (+-0.05(	31.1uM	148.1.	17371811
		MERS-CoV	Calu-3	24.9uM	>50uM	>2.	31924756
		RVFV	A549	26.8uM	>100uM	>4	29698664
Salinomycin		fCoV	Fcwf-4	0.70uM (+-0.13)	0.34uM (+-0	<1.	32563698
		hCoV-OC43	HCT-8	5.78uM (+-2-17)	>50uM	>8.7.	32563698
Saliphenylhalamide		FLUAV	RPE	0.254uM (+-0.05	7.547uM (+-	29	22910914
		JEV	Vero76	1.94uM	25.1uM	12.9.	27919709
		WNV	Vero76	2.19uM	25.1uM	11.5.	27919709
		ZIKV	RPE	0.05uM (+-0.02)	> 10.0uM	> 200	28049006
		ZIKV	Vero76	0.62uM	25.1uM	40.5.	27919709
		ZIKV	Vero76	0.49uM	25.1uM	51.2.	27919709
Saquinavir		HIV-1	MT-2	0.026uM (+-0.00	19.8uM (+-2	773.	23403426
		HIV-1	MT-2	0.014uM (+-0.00	9.9uM (+-3.6	710.	18955518
		HIV-1	MT-2	0.017uM (+-0.00	11.3uM (+-2	660.	14506019
		HIV-1	MT-2	0.008uM (+-0.00	16.4uM	2,050.	17371811
		HIV-2	MT-2	0.003uM (+-0.00	19.8uM (+-2	6,600.	23403426
		HIV-2	MT-2	0.00043uM (+-0.	16.4uM	38,129.	17371811
		HIV-2	MT-2	0.003uM (+-0.00	11.3uM (+-2	3,766.	14506019
		HIV-2	MT-2	0.006uM (+-0.00	11.3uM (+-2	1,883.	14506019
		HIV-2	MT-2	0.0030uM (+-0.0	16.4uM	5,466.	17371811
Selenazofurin		JEV	Vero76	9.8uM	3,255uM	332.	6151377
		HTNV	VeroE6	4.2uM	3,255uM	775.	6151377
		PICV	Vero76	13uM	3,255uM	250.	6151377
		RVF	Vero76	9.12uM	3,255uM	356.	6151377
		VEEV	Vero76	1.63uM	3,255uM	1,996.	6151377
		YFV	LLC-MK2	0.26uM	3,255uM	12,519.	6151377
Sertraline		EBOV	Huh7	3.79uM	22.61uM	5.97.	29939303
		EBOV	293T/17	6.1uM	>10uM	>1.6.	29939303
		hCoV-OC43	LLC-MK2	3.49uM	>10uM	>2.87	33324406
		SARS-CoV-2	Vero	9.34uM	27.84uM	2.98.	33324406
Silvestrol		CCHFV	Murine hep	0.0285uM	>5uM	>175.	31931103
		hCoV-229E	MRC-5	0.003uM	>1uM	>3300	31931103
		LASV	Murine hep	0.05073uM	>5uM	>99.	31931103
		MERS-CoV	MRC-5	0.0013uM	>1uM	>7690	31931103
		ZIKV	A549	0.00108uM	0.00942uM	8.8.	31931103
Simeprevir		HCV	Huh7-Luc	0.0081uM	47uM	5,802.	19171797
		HCV	Huh7-Luc	0.013uM	47uM	3,615.	19171797
		SARS-CoV-2	VeroE6	1.41uM (+-0.12)	32.71uM (+-	>23.	34929295
		SARS-CoV-2	VeroE6	15uM	59uM	3.9.	34097489
		SARS-CoV-2	Huh7.5	14uM	33uM	2.4.	34097489
		SARS-CoV-2	A549-hACE	9uM	56uM	6.2.	34097489
		SARS-CoV-2	VeroE6	4.25uM	2.1uM	<1	33984267
		SARS-CoV-2	HEK293T	2.3uM	>50uM	21.7.	33984267
		ZIKV	U-87MG	0.4uM	10.1uM	25.25.	32488021
Simvastatin		HCMV	HAEC	0.003uM (+-0.00	1uM (+-0.01	333.	24976258
		HCMV	MRC-5	1.57uM (+-1.04)	3.5uM (+-0.1	2.3.	24976258
Sirolimus		HIV-1	TZM-bl	18.81uM	>30uM	>1	29698664
		hCoV-229E	MRC5	2.28uM	2.5uM	1.096491	33672333
Sofosbuvir		EBOV	Huh7	>20uM	>20uM	>1.	29939303
		EBOV	293T/17	>20uM	>20uM	>1.	29939303
Sorafenib		CHIKV	Vero	0.16uM	>80uM	>500.	29981794
		EEEV	Vero	6.7uM	>80uM	>11.9.	29981794
		RVFV	Vero	6.4uM, 3.9uM	>160uM	>31.74.	26217313
		SINV	Vero	1.3uM	>80uM	>61.5.	29981794
		VEEV	Vero	4.2uM	>80uM	>19.	29981794
		VEEV	Vero	6.2uM	>80uM	>12.9.	29981794

Sunitinib		CHIKV	Vero	4.67uM	11.9uM	2.6.	28240606
		DENV	MDDC	1.962uM	>20uM	>10	29753658
		DENV-1	BHK-21	0.6uM	>10uM	>16.	28240606
		DENV-2	Huh7, BHK-	0.51uM	11.5uM	22.5.	28240606
		DENV-3	BHK-21	0.3uM	>10uM	>33.	28240606
		DENV-4	BHK-21	0.23uM	>10uM	>43.	28240606
		EBOV	Huh7	0.47uM	>10uM	>21	28240606
		EBOV	Vero	0.47uM	>10uM	>21	28240606
		EBOV	Huh7	4.11uM	18.12uM	4.41.	29939303
		EBOV	293T/17	8.2uM	61.7uM	7.5.	29939303
		HCV	Huh7.5	1.2uM	>10uM	>8.3.	28240606
		HIV-1	HeLa/TZM-	0.8uM	>20uM	>25.	28240606
		JUNV	Vero	4.8uM	10.4uM	2.2.	28240606
		RSV	Hep2	>0.12uM	12.5uM	<104.2.	28240606
		WNV	MEF,Vero	0.55uM	>20uM	>36.4.	28240606
		ZIKV	Huh7	0.51uM	14.1uM	27.6.	28240606
Suramin		CHIKV	VeroE6	79uM (+-11.6)	>1000uM	>12.7	26112648
		CHIKV	VeroE6	76uM (+-7)	>1000uM	>13.2	26112648
		CHIKV	VeroE6	79uM (+-12.9)	>1000uM	>12.7	26112648
		CHIKV	BHK-21	21.5uM (+-7.1)	>700uM	>32.6	26208101
		CHIKV	U2OS	17.9uM (+-9.5)	>700uM	>39.1	26208101
		CHIKV	MRC-5	18.1uM (+-4)	>_300uM	>19.3	26208101
		CHIKV	BHK-21	28.9uM (+-6.8)	>700uM	>24.2	26208101
		CHIKV	U2OS	59.6uM (+-11.9)	>700uM	>11.7	26208101
		CHIKV	MRC-5	62.1uM (+-5.7)	>_300uM	>4.8.	26208101
		CHIKV	BHK-21	8.8uM (+-0.5)	>700uM	>79.5.	26208101
		CHIKV	U2OS	43.8uM (+-6.1)	>700uM	>16.	26208101
		CHIKV	MRC-5	54.1uM (+-11.8)	>_300uM	>5.5.	26208101
		CHIKV	BHK-21	21.9uM (+-4.8)	>700uM	>31.9.	26208101
		CHIKV	U2OS	36uM (+-9.6)	>700uM	>19.	26208101
		CHIKV	MRC-5	54.3uM (+-4.7)	>_300uM	>5.5.	26208101
		HCV	Huh7.5	28uM (+-9.3)	>50uM	>1.8.	22740655
		SARS-CoV-2	VeroE6	20uM (+-2.7)	>5mM	>250.	32513797
		SFV4	VeroE6	40uM (+-10)	>400uM	>10.	26112648
		SINV	VeroE6	141uM (+-18.3)	>400uM	>2.8.	26112648
		ZIKV	Vero	39.8uM	1900uM	48.	28461070
Tamoxifen		EBOV	Huh7	0*311uM (+-0*1	16*29uM)+-	52	31300330
		EBOV	Huh7	0*108uM (+-0*0	>50uM	151	31300330
		EBOV	Vero	3uM	38uM	13.	27622822
		EBOV	Vero	0.75uM	10.09.	13.47.	26585243
		VSV	Vero	4.94uM	10.09.	2.04.	26585243
Teicoplanin		EBOV	HEK293T	0.34uM (+-0.11)	>500uM	1,470.	26953343
		EBOV	HEK293T	0.39uM (0.12)	>500uM	1,282.	26953343
		EBOV	Vero	2.38uM	>125uM	>52.52.	26585243
		VSV	Vero	>125uM	>125uM	>1.	26585243
Telbivudine		HBV	HepG2.2.15	0.8194uM	>200uM	227.	28082068
		HBV	HepG2.2.15	>20uM	>200uM	10.	28082068
		HBV	HepG2.2.15	>20uM	>200uM	10.	28082068
Tenatoprazole		HIV-1	293T	50uM	125uM	2.5.	32132561
Tenofovir		EBOV	Huh7	>25uM	>25uM	>1.	29939303
		EBOV	293T/17	>25uM	>25uM	>1.	29939303
		fLV	CRFK	2000nM	>20uM	>10	22258856
		SARS-CoV-2 (	HEK293T	79.43uM	> 300uM	3.8.	33894278
Teriflunomide		EBOV	Huh7	7*03uM (+-3*06	>50uM	>7	31300330
		EBOV	Huh7	6*794uM (+-2*6	>50uM	>7	31300330
Tetrandine		hCoV-229E	MRC-5	0.33uM (+-0.03)	13.41uM (+-	40.19.	31690059
Thapsigargin		FLUAV	NHBE	0.001481uM	22.93uM	15,483	32992478
		FLUAV	NPTr	0.004255uM	34.41uM	88,087.	32992478
		hCoV-OC43	MRC5	0.006uM	55.36uM	7,072-9,22	33546185
		RSV	Hep2	0.06447uM	63.43uM	984.	33546185
Thioridazine		hCoV-OC43	LLC-MK2	3.42uM	>10uM	>2.92.	33324406
		SARS-CoV-2	Vero	2.22uM	27.22uM	12.26.	33324406
Tilorone		CHIKV	Huh7	>0.1uM	<0.1uM	1.	32798602
		DENV-2	Huh7	>3.2uM	3.2uM	<1	32798602
		EBOV	Vero CCL-8	0.23uM	12uM	52.2.	29133569
		EBOV	HeLa	0.23uM (0.09-0.6	6.2uM	26.9.	26834994
		fCoV	Fcwf-4	11.25uM (+-1.25	9.38uM (+-0	0.84.	32563698
		hAdV-5	HFF	>6uM	15.06uM	<2.51	32798602
		HCMV	HFF	>6uM	29.35uM	<4.9.	32798602
		hCoV-OC43	HCT-8	26.0uM (+-2.24)	35.9uM (+-2	1.38.	32563698
		hCoV-OC43	LLC-MK2	1.21uM	>24.79	>2.87	33324406
		HPV-11	C-33A	>6uM	20.71uM	<3.5	32798602
		POWV	BHK-21	>3.2uM	3.2uM	<1.	32798602
		RVFV	Huh7	>10uM	10uM	<1	32798602
		SARS-CoV-2	Vero76	6.62uM	49.64	7.5.	33778258
		SARS-CoV-2	Vero76	6.62uM	49.64	7.5.	33778258
		SARS-CoV-2	Calu-3	28.96uM	111.49uM	3.9.	33778258
		SARS-CoV-2	A549-ACE2	0.7302uM (+-0.3	11.69uM (+-1.55)		33778258
		SARS-CoV-2	Vero	9.13uM	28.67uM	3.14.	33324406
		YFV	Huh7	>3.2uM	3.2uM	<1.	32798602
Toremifene		EBOV	Vero	0.38uM	10.16uM	26.73.	26585243
		EBOV	Huh7	2.17uM	>20uM	>9.22.	29939303
		EBOV	Huh7	3.1uM	>20uM	>6.45	29939303
		EBOV	Huh7	3.73uM	>20uM	>5.35.	29939303
		EBOV	Huh7	3.64uM	>20uM	>5.49.	29939303
		EBOV	Huh7	5,55uM	>20uM	>3.60	29939303
		EBOV	293T/17	3.1uM	>20uM	>6.4.	29939303
		MERS-CoV	Huh7	3.49uM (+-0.44)	>20uM	>5.7.	33116243
		SARS-CoV	Huh7	2.28uM (+-1.09)	>20uM	>8.7.	33116243
		SARS-CoV-2	Huh7	1.92uM	17.14uM	8.92.	33116243
		SARS-CoV-2	VeroE6	2.50uM (+-0.12)	>20uM	>8.	33116243
		VSV	Huh7	17.69uM	17.14uM	<1.	33116243
		VSV	Vero	7.53uM	10.16uM	1.35.	26585243
Trifluridine		CPXV	Vero	1.4uM	>337uM	>240	16530858
		CPXV	Vero	2.4uM	>337uM	>140	16530858
		HSV-1	HFF	3.8uM	>337uM	>88	16530858
		HSV-1	HFF	3.7uM	>337uM	>91	16530858
Umifenovir		CHIKV	Vero	<20.9uM	676.9uM	32.	21440006
		CHIKV	MRC5	12.2uM (+-2.2)	376uM	30.	21440006
		CVB3	Hep2	27.4uM	178.9uM	6.5.	17497238
		FLUAV	MDCK	14uM	35.6uM	2.5.	22028179
		FLUAV	MDCK	17.2uM (+-1.4)	61.6uM	3.6.	23770981
		FLUAV	MDCK	18.2uM (+-2.2)	61.6uM	3.4.	23770981
		FLUAV	MDCK	9uM	145.4uM	16.1.	17497238
		FLUBV	MDCK	14.9uM (	35.6uM	2.4.	22028179
		hCoV-OC43	VeroE6	9.0uM (+-0.4)	97.5uM (+-6	10.8.	34452529
		hCoV-229E	VeroE6	18.8uM (+-1.8)	97.5uM (+-6	24.7.	34452529
		hCoV-OC43	LLC-MK2	4.43uM	8.85uM	2.00.	33324406
		hPIV3	MDCK	10.3uM	35.6uM	3.5.	22028179
		hRhV-14	HeLa	13.6uM	25.1uM	1.9.	22028179
		hRhV-14	HeLa	28.9uM	151.9uM	5.3.	17497238
		HTNV	VeroE6	2.5uM	32.8uM	13.0	19575005
		IBV	CEK	24.7uM	209.5uM	8.5.	22028179
		PoV-1	MEK3	0.5uM	41.9uM	90.	22028179
		RSV	Hep2	21.8uM	178.9uM	8.	17497238
		SARS-CoV-2	VeroE6	3.537uM	75uM	21.20.	32679055
		SARS-CoV-2	Vero CCL81	23.6uM (+-2.0)	106.2uM (+-	4.5.	34452529
		SARS-CoV-2	Vero CCL81	29.0uM (+-8.4)	106.2uM (+-	3.7.	34452529
		SARS-CoV-2	Vero	10.01uM	22.34uM	2.23.	33324406

X

Valproic Acid	hCoV-229E	MRC5	1,339uM	4000uM	2,987.	33672333
Verapamil	EBOV	Huh7	41.23uM (+-21.6	>50uM	>1	31300330
	EBOV	Huh7	23.43uM (+-21.3	>50uM	>2	31300330
Verdinexor	hAdV-5	HeLa	0.18uM	0.18uM	1.	30332435
	hAdV-5	HeLa	0.03uM	0.10uM	3.	30332435
	BKPyV	HFF	7.62uM	10.0uM	>1.	30332435
	BKPyV	HFF	2.29uM	9.38uM	4.	30332435
	EBV	Akata cells	0.48uM	0.68uM	>1.	30332435
	EBV	Akata cells	0.05uM	0.34uM	7.	30332435
	FLUAV	MDCK	0.20uM	26.8uM	134	24965445
	FLUAV	MDCK	0.04uM	26.8uM	670	24965445
	FLUAV	MDCK	0.27uM	26.8uM	99	24965445
	FLUAV	MDCK	0.18uM	26.8uM	149	24965445
	FLUAV	MDCK	0.06uM	26.8uM	447	24965445
	FLUAV	MDCK	0.42uM	26.8uM	64	24965445
	FLUBV	MDCK	0.09uM	26.8uM	298	24965445
	FLUBV	MDCK	0.01uM	26.8uM	2,68	24965445
	HCMV	GPL	0.19uM	2.0uM	11.	30332435
	HCMV	HFF	0.19uM	1.76uM	9.	30332435
	HCMV	HFF	2.5uM	73.3uM	29.	30332435
	HPV-11	HEK293	1.65uM	89.55uM	54.	30332435
	HPV-18	PHK	8.30uM	8.30uM	1.	30332435
	JCPyV	COS7	7.45uM	10uM	>1.	30332435
	JCPyV	COS7	3.14uM	73.3uM	29.	30332435
	KSHV	BCBL-1	0.8uM	2.76uM	4.	30332435
	KSHV	BCBL-1	0.27uM	1.40uM	5.	30332435
	MCMV	MEF	0.19uM	150uM	789.	30332435
	RSV	A549	0.96uM	37.93uM	39.5.	30541831
Vesatolimod	HIV-1	PBMC	0.536uM (+-0.83	22uM (+-5.2(	41.	27799218
	HIV-1	PBMC	0.953uM (+-1.11	22uM (+-5.2(	23.1.	27799219
	HIV-1	PBMC	0.0272uM (+-0.0	22uM (+-5.2(	808.8.	27799219
	HIV-1	CD4+ T cell	>10uM	>10uM	1.	27799219
	HIV-1	CD4+ T cell	>10uM	>10uM	1.	27799219
	HIV-1	CD4+ T cell	>2uM	>10uM	5.	27799219
	HIV-1	Isolated ma	>10uM	>10uM	1.	27799219
	HIV-1	Isolated ma	>7.3uM	>10uM	1.4.	27799219
	HIV-1	Isolated ma	>1.6uM	>10uM	6.25.	27799219
Vidarabine	CPXV	Vero	3.4uM	>374uM	>110.	16530858
	CPXV	Vero	2.92uM	>374uM	>128.	16530858
	EBV	P3HR-1	18uM (+-17)	38uM (+-1)	2	25267682
	HSV	OMK	29uM (+-15)	115uM (+-24	3	25267682
	HSV-1	Vero	6.19uM	117.64uM	19.00.	10967475
	HSV-1	MRC-5	16.4uM	1020uM	62.2.	7822458
	HSV-1	MRC-5	4.63uM	1020uM	220.3.	7822458
	HSV-1	HFF	23.95uM	>374uM	15.6.	16530858
	HSV-1	HFF	18.33uM	>374uM	20.4.	16530858
	HSV-2	Vero	5.49uM	117.64uM	21.42.	10967475
	HSV-2	MRC-5	23.9uM	1020uM	42.7.	7822458
	HSV-2	MRC-5	9.11uM	1020uM	111.9.	7822458
	KSHV	BCBL-1	99uM (+-43)	233uM (+-4)	2	25267682
	MHV-68	NIH3T3	2.0uM (+-1.2)	21uM (+-21)	1	25267682
	RRV	RF	118uM (+-16)	>_233uM	>_1	25267682

Zalcitabine	HIV-1	MT-4	0.75uM (+-0.55)	>94uM	>127	22870806
	HIV-2	MT-4	0.88uM (+-0.53)	>94uM	>108	22870806
Zanamivir	FLUAV	MDCK	0.36uM	>100uM	>277	25600073
	FLUAV	MDCK	0.77uM	>100uM	>129	25600073
	FLUAV	MDCK	20uM	>100uM	>5	25600073
	FLUAV	MDCK	5.6uM	>100uM	>17	25600073
	FLUAV	MDCK	5.8uM	>100uM	>17	25600073
	FLUAV	MDCK	2.8uM	>100uM	>35	25600073
	FLUAV	MDCK	2.3uM	>100uM	>43	28477572
	FLUAV	MDCK	6.8uM	>100uM	>14	28477572
	FLUAV	MDCK	0.80uM	>100uM	>125	28477572
	FLUAV	MDCK	0.20uM	>100uM	>500	28477572
	FLUAV	MDCK	0.018uM	>1000uM	>55,555	12367731
	FLUAV	MDCK	0.017uM	>1000uM	>58,823	12367731
	FLUAV	MDCK	0.013uM	>1000uM	>76,923	12367731
	FLUAV	MDCK	0.008uM	>1000uM	>125,000	12367731
	FLUAV	MDCK	0.019uM	>1000uM	>52,631	12367731
	FLUAV	MDCK	0.03uM	>1000uM	>33,333	12367731
	FLUAV	MDCK	0.014uM	>1000uM	>71,428	12367731
	FLUAV	MDCK	0.005uM	>1000uM	>200,000	12367731
	FLUAV	MDCK	0.012uM	>1000uM	>83,333	12367731
	FLUAV	MDCK	0.008uM	>1000uM	>125,000	12367731
	FLUAV	MDCK	0.008uM	>1000uM	>125,000	12367731
	FLUAV	MDCK	0.016uM	>1000uM	>62,500	12367731
	FLUAV	MDCK	0.018uM	>1000uM	>55,555	12367731
	FLUAV	MDCK	0.016uM	>1000uM	>62,500.	12367731
	FLUAV	MDCK	0.133uM	>1000uM	>7,518	12367731
	FLUAV	MDCK	0.123uM	>1000uM	>8,130	12367731
	FLUAV	MDCK	0.085uM	>1000uM	>11,764	12367731
	FLUAV	MDCK	0.073uM	>1000uM	>13,698	12367731
	FLUAV	MDCK	0.073uM	>1000uM	>13,698	12367731
	FLUAV	MDCK	0.073uM	>1000uM	>13,698	12367731
	FLUAV	MDCK	0.033uM	>1000uM	>30,303	12367731
	FLUAV	MDCK	0.075uM	>1000uM	>13,333	12367731
	FLUAV	MDCK	0.095uM	>1000uM	>10,526	12367731
	FLUAV	MDCK	0.086uM	>1000uM	>11.627	12367731
	FLUAV	MDCK	0.162uM	>1000uM	>6,172	12367731
	FLUAV	MDCK	0.113uM	>1000uM	>8,849	12367731
	FLUAV	MDCK	0.059uM	>1000uM	>16,949	12367731
	FLUAV	MDCK	0.078uM	>1000uM	>12,820	12367731
	FLUBV	MDCK	45uM	>100uM	>2.2.	25600073
	FLUBV	MDCK	26uM	>100uM	>3.9.	25600073
	FLUBV	MDCK	0.060uM	>100uM	>1,666	28477572
	FLUBV	MDCK	0.055uM	>100uM	>1,818	28477572
Zidovudine	EBOV	Huh7	>50uM	>50uM	>1.	29939303
	EBOV	293T/17	>50uM	>50uM	>1.	29939303
	EBV	P3HR-1	37.4uM	198uM	5.3.	9875407
	EBV	P3HR-1	<37.4uM	198uM	5.3.	9875407
	HIV-1	MT-4	0.0076uM (+-0.0	>88.26uM	>11,587	22870806
	HIV-1	MT-4	0.02uM (+-4.42)	>88.26uM	>4,413	22870806
	HIV-1	MT-4	0.011uM (+-0.00	>88.26uM	>8,023	22870806
	HIV-1	MT-4	0.0049uM (+-0.0	>88.26uM	>18,012	22870806
	HIV-1	P4/R5	0.19uM (+-0.11)	>270uM	>1,421	19596885
	HIV-1	P4/R5	0.21uM (+-0.15)	>270uM	>1,285	19596885
	HIV-1	P4/R5	0.21uM (+-0.008	>270uM	>1,285	19596885
	HIV-1	P4/R5	0.18uM (+-0.16)	>270uM	>1,500	19596885
	HIV-1	P4/R5	213.7uM (+-12.3	>270uM	>1.3.	19596885
	HIV-1	MT-4	0.005uM (+-0.00	100uM (+-25	20,000.	10212126
	HIV-2	MT-4	0.0033uM (+-0.0	>88.26uM	>28,348	22870806
	HIV-2	MT-4	0.005uM (+-0.00	100uM (+-25	20,000.	10212126

Table S.2.2: BSA and their molecular weight. Molecular weight in g/mol for some of the BSAs. Used to determine μM.

BSA	MW (g/mol)	PubChem CID
Acyclovir	225.21	135398513
Adefovir	273.186	60172
Adefovir dipivoxil	501.5	60871
Amantadine	151.25	2130
Amiodarone	645.3	2157
Amprenavir	505.6	65016
Azauridine	245.19	5901
Berberine	336.4	2353
Betulinic acid	456.7	64971
Brivudine	333.13	446727
Camostat	398.4	2536
Camptothecin	348.4	24360
Cidofovir	279.19	60613
Diphenhydramine	255.35	3100
Doxycycline	444.4	54671203
Favipiravir	157.10	492405
Fiacitabine	371.10	50312
Ganiciclovir	255.23	135398740
Glycyrrhizin	822.9	128229
Indinavir	613.8	5362440
Lobucavir	265.27	135413519
Minocycline	493.9	54675783
Mycophenolic acid	320.3	446541
Nafamostat	347.4	4413
Nelfinavir	567.8	64143
Oseltamivir	312.40	65028
Penciclovir	253.26	135398748
Pentosan polysulfate	602.5	37720
Ribavirin	244.20	37542
Rimantadine	179.3	5071
Ritonavir	720.9	392622
Saquinavir	670.8	441243
Selenazofurin	307.17	100665
Simprevir	749.9	24873435
Trifluridine	296.20	6256
Umifenovir	477.4	131411
Vidarabine	267.24	21704
Zidovudine	267.24	35370

Table S.2.3: Positive and negative antiviral activities of BSAs. Shown in the table are BSAs with positive (SI > 1) and negative (SI ≤ 1) antiviral activities.

A

BC	Virus	SI > 1	SI ≤ 1
I	BKPyV	Cidofovir; Leflumonide; Verdinextor	
	CPXV	Acyclovir; Adefovir; Adefovir dipivoxil; Brivudine; Cidofovir; Erlotinib; Flacitabine; Ribavirin; Trifluridine; Vidarabine	
	EBV	Acyclovir; Adefovir; Brivudine; Cidofovir; Fiacitabine; Ganciclovir; Penciclovir; Ribavirin; Verdinextor; Vidarabine; Zidovudine	
	hAdV	Acetylsalicyclic acid; Cidofovir; Filociclovir; Quinacrine; Tilorone; Verdinextor	Verdinextor
	HCMV	Artesunate; Berberine; Calanolide A; Cidofovir; Emotion; Filociclovir; Fluvastatin; Ganciclovir; Penciclovir; Quinacrine; Simvastatin; Tilorone	Adefovir; Gemcitabine
	HHV-6	Acyclovir; Cidofovir; Ganciclovir; Penciclovir	
	HHV-7	Acyclovir; Cidofovir; Ganciclovir; Penciclovir	
	HPV	Quinacrine; Tilorone	Verdinextor
	HSV-1	Acetylsalicyclic acid; Acyclovir; Beclabuvir; Brivudine; Cidofovir; Fiacitabine; Filociclovir; Ganciclovir; Gemcitabine; Penciclovir; Trifluridine; Vidarabine	Acyclovir
	HSV-2	ABMA; Acyclovir; Beclabuvir; Brivudine; Chloroquine; Cidofovir; Ganciclovir; Penciclovir; Vidarabine	Adefovir; Brivudine
	KSHV	Acyclovir; Adefovir; Brivudine; Camptothecin; Cidofovir; Fiacitabine; Foscarnet; Ganciclovir; Novobiocin; Penciclovir; Verdinextor; Vidarabine	Penciclovir
	MCMV	Filociclovir; Ganciclovir	
	MHV-68	Acyclovir; Brivudine; Fiacitabine; Ganciclovir; Verdinextor; Vidarabine	Panciclovir
	MPXV	Cidofovir; Ribavirin	
	ORFV	Cidofovir	
	RRV	Brivudine; Ganciclovir; Mycophenolic acid; Verdinextor; Vidarabine	Acyclovir; Penciclovir
	VACV	Adefovir; Adefovir dipivoxil; Brivudine; Cidofovir; Ribavirin	Acyclovir; Ganciclovir
	VARV	Adefovir dipivoxil; Cidofovir; Ribavirin	
	VZV	Acyclovir; Adefovir; Brivudine; Cidofovir; Clofazimine; Fiacitabine; Filociclovir; Penciclovir	Gemcitabine

B

BC	Virus	SI > 1	SI ≤ 1
	B19B	Brincidofovir	
II	MSV	N.a.	Adefovir

C

BC	Virus	SI > 1	SI ≤ 1
III	hRoV	25HC; Ribavirin; Mycophenolic acid	Ribavirin

D

BC	Virus	SI > 1	SI ≤ 1
VI	fLV	Gemcitabine; Tenofovir	
	HIV-1	Adefovir; Adefovir dipivoxil; Amprenavir; Atazanavir; Beclabuvir; Berberine; Betulinic acid; Calanolide A; Camptothecin; Chicoric acid; Clofarabine; Darunavir; Efavirenz; Erlotinib; Etravirine; Ezetimibe; Indinavir; Lamivudine; Minocycline; Nelfinavir; Ritonavir; Saquinavir; Sirolimus; Sunitinib; Tenatoprazole; Vesatolimod; Zalcitabine; Zidovudine	Esomeprazole; Vesatolimod
	HIV-2	Adefovir; Amprenavir; Atazanavir; Beclabuvir; Calanolide A; Camptothecin; Chicoric acid; Darunavir; Indinavir; Lamivudine; Nelfinavir; Ritonavir; Saquinavir; Zalcitabine; Zidovudine	Calanolide A; Etravirine
	SIV	Calanolide A	Calanolide A

E

BC	Virus	SI > 1	SI ≤ 1
VII	HBV	Adefovir dipivoxil; Lamivudine; Telbivudine	Adefovir dipivoxil

F

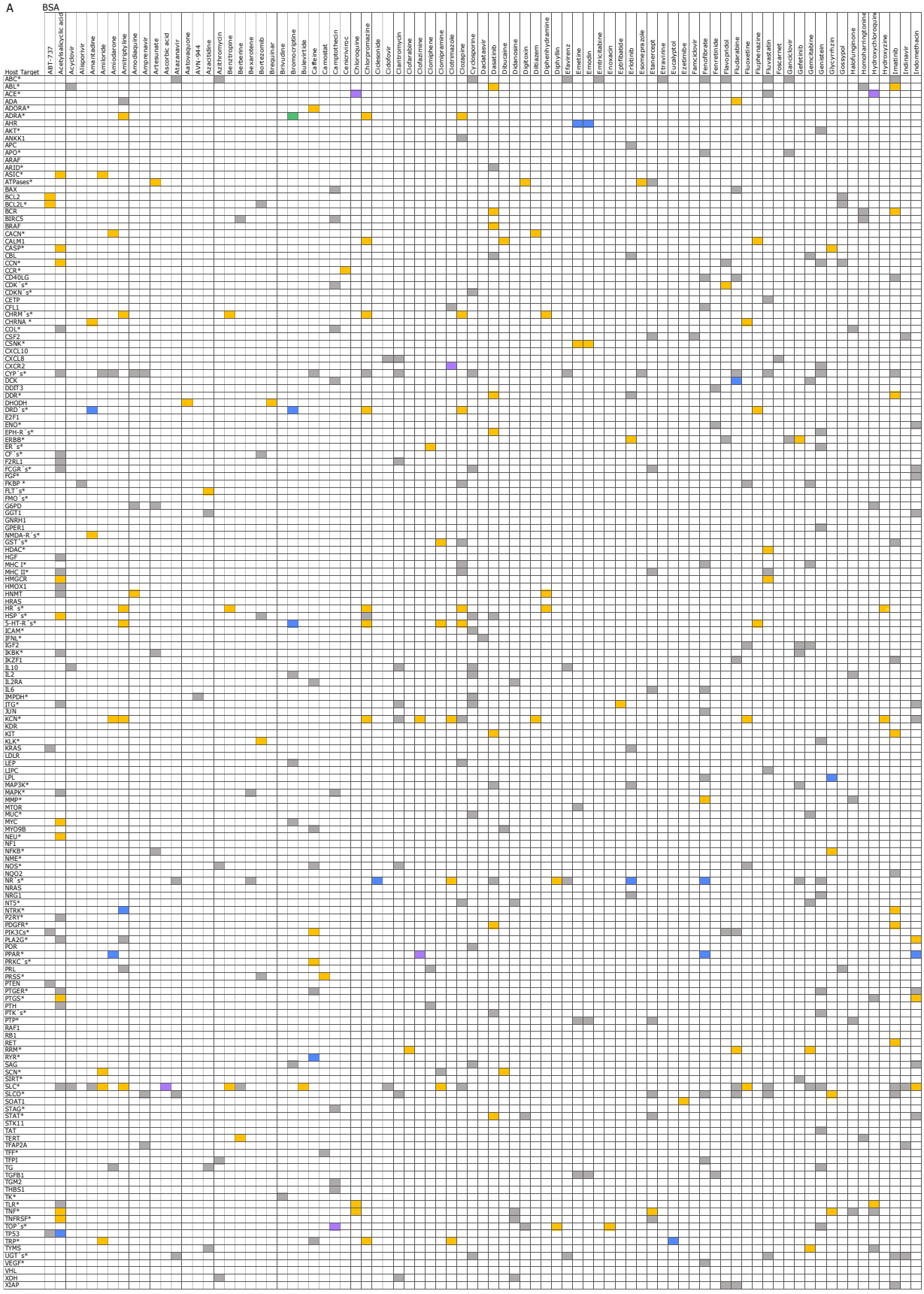
BC	Virus	SI > 1	SI ≤ 1
IV	AHFV	Remdesivir	
	BVDB	Beclabuvir	
	CHIKV	Berberine; Bromocriptine; Chloroquine; Eptifibatide; Erlotinib; Fenretinide; Ivermectin; Mycophenolic acid; Sorafenib; Sunitinib; Suramin; Tilorone; Umifenovir	Galidesivir; Quinacrine
	CV	Acetylsalicyclic acid; Beclabuvir; Berberine; Curcurbit[7]uril; Emodin; Ribavirin; Umifenovir	Mycophenolic acid; Ribavirin
	DENV	Amodiaquine; Anisomycin; Azithromycin; Bromocriptine; Curcurbit[7]uril; Doxycycline; Erlotinib; Galidesivir; Mefloquine; Quinacrine; Ribavirin; Sunitinib	Quinacrine; Tilorone
	EEEV	Galidesivir; Sorafenib	
	EV	Curcurbit[7]uril; Dalbavancin; Dibucaine; Fluoxetine; Gemcitabine; Pirlindole; Ribavirin	
	fCoV	Amiloride; Anisomycin; Atovaquone; Chloroquine; Doxycycline; Emetine; GS-441524; Homoharringtonine; Mefloquine; Tilorone	Niclosamide; Salinomycin
	FMDV	Amiloride	
	hCoV-229E	Alisporivir; Amodiaquine; Chloroquine Chlorpromazine; CR-31B (-); GS-441524; Hydroxychloroquine; Lopinavir; Mefloquine; Remdesivir; Reservastrol; SIlvestrol; Sirolimus; Tetrandine; Valproic acid	Amoidaquine; Quinine
	hCoV-OC43	Anisomycin; Atovaquone; Beclabuvir; Cepharanthine; Chloroquine; Chlorpromazine; Clofazimine; Cyclosporine A; Emetine; Fluoxetine; Gefetinib; GS-441524; Homoharringtonine; Hydroxychloroquine; Imatinib; Luteolin; Mefloquine; Monensin; Niclosamide; Nitazoxanide; Raloxifene; Remdesivir; Salinomycin; Sertraline; Thapsigargin; Thioridazine; Tilorone; Umifenovir	
	HCV	Beclabuvir; Erlotinib; Fluoxetine; Hydroxyzine; IFN-a; IFN-b; IFN-g; Ribavirin; Simprevir; Sunitinib; Suramin	Benztropine; IFN-a; IL-7; Ribavirin
	hRhV	Acetylsalicyclic acid; Beclabuvir; Galidesivir; Gemcitabine; Umifenovir	
	IBV	Umifenovir	
	JEV	Brequinar; Chloroquine; Doxycycline; Emodin; Galidesivir; IFN-a; IFN-b; Minocycline; Ribavirin; Saliphenylhalamide; Selenazofurin	Chloroquine; Monensin; Ribavirin
	KFDV	Remdesivir	
	MERS-CoV	Amiodarone; Chloroquine; Chlorpromazine; Ciclesonide; CR-31B (-); Digitoxin; Enoxacin; Galidesivir; IFN-b; Lanatoside C; Lopinavir; Mycophenolic acid; Niclosamide; Regorafenib; Remdesivir; Ribavirin; Ritonavir; Silvestrol; Toremifene	
	MHV	Chloroquine; Doxycycline; Ivermectin; Remdesivir	
	OHFV	Remdesivir	
	pCoV	Cepharanthine	
	PoV	Beclabuvir; Gemcitabine; Remdesivir; Umifenovir	
	POWV	Quinacrine	Tilorone
	PRRSV	Doxycycline	
	SARS-CoV	Amiodarone; Amodiaquine; Azauridine; Chloroquine; Chlorpromazine; Ciclesonide; Galidesivir; Glycyrrhizin; GS-441524; Hydroxychloroquine; IFN-a; IFN-b; Lopinavir; Mefloquine; Quinine; Remdesivir; Ribavirin; Rimantadine; Sertraline; Toremifene	Glycyrrhizin; Mycophenolic acid; Ribavirin
	SARS-CoV-2	25HC; 4´-fluorouridine; Acetylsalicyclic acid; Alisporivir; Amiloride; Amiodarone; Amodiaquine; Aprotinin; Azithromycin; Berberine; Boceprevir; Cepharanthine; Chloroquine; Clofazimine; CR-31B (-); Cyclosporine A; Dalbavancin; Digitoxin; Diltiazem; Doxycycline; Enoxacin; Favipiravir; Fenofibrate; Gefetinib; Gemcitabine; GS-441524; Hydroxychloroquine; Imatinib; Indometacin; IFN-a; IFN-g; Lanatoside C; Lopinavir; Mefloquine; Monensin; Nafamostat; Niclosamide; Nitazoxanide; Obatoclax; Oubain; Penciclovir; Promethazine; Quinine; Raloxifene; Ribavirin; Simeprevir; Suramin; Tenofovir; Thioridazine; Tilorone; Tormeifene; Umifenovir	Quinacrine; Quinine; Simeprevir
	SFV	Curcurbit[7]uril; Suramin	
	SINV	Mycophenolic acid; Ribavirin; Sorafenib; Suramin	
	TBEV	Bromocriptine; Remdesivir	
	VEEV	Selenazofurin; Sorafenib	Galidesivir
	WEEV	Galidesivir	
	WNV	Brequinar; Chloroquine; IFN-a; IFN-b; Saliphenylhalamide; Sunitinib	Chloroquine; Monensin; Ribavirin
	YFV	Galidesivir; Mycophenolic acid; Quinacrine; Selenazofurin; Tilorone	Ribavirin
	ZIKV	Anisomycin; AVN-944; Azaribine; Azauridine; Azithromycin; Brequinar; Bromocriptine; Chloroquine; CR-31B (-); Curcurbit[7]uril; Diphyllin; Erlotinib; Ezetimibe; Gemcitabine; Hydroxychloroquine; IFN-a; IFN-b; IFN-g; Lopinavir ; Mefloquine; Merimepodib; Mycophenolic acid; Obatoclax; Quinacrine; Saliphenylhalamide; Silvestrol; Simprevir; Sunitinib; Suramin	Monensin; Ribavirin

G

BC	Virus	SI > 1	SI ≤ 1
V	ANDV	Remdesivir	
	CCHFV	CR-31-B (-); Silvestrol	Remdesivir
	EBOV	ABMA; Amoidarone; Amoidaquine; Apilimod; Artesunate; Azauridine; Azithromycin; Benztropine; Bepridil; Chloroquine; Clomipramine; Clomiphene; Emetine; Erlotinib; Favipiravir; Fluphenazine; Galidesivir; Hydroxychloroquine; Hydroxyzine; Lamivudine; Mycophenolic acid; Niclosamide; Promethazine; Quinacrine; Remdesivir; Ribavirin; Sertraline; Sunitinib; Tamoxifen; Teicoplanin; Teriflumonide; Tilorone; Toremifene; Verapamil	Azauridine; Azithromycin; Bepridil; Chloroquine; Erlotinib; Favipiravir; Lamivudine; Sofosbuvir; Tenofovir; Zidovudine
	FLUAV	ABT-737; Acetylsalicyclic acid; Amantadine; Aprotinin; AVN-944; Azaribine; Azithromycin; Baloxavir marboxil; Beclabuvir; Berberine; Bortezomib; Brequinar; Camostat; Dapivirine; Emetine; Favipiravir; Galidesivir; Gemcitabine; MK2206; Mycophenolic acid; Nafamostat; Obatoclax; Oseltamivir; Ribavirin; Rilpivirine; Rimantadine; Saliphenylhalamide; Thapsigargin; Umifenovir; Verdinextor; Zanamivir	Pentosan polysulfate; Ribavirin; Rimantadine
	FLUBV	AVN-944; Azaribine; Baloxavir marboxil; Berberine; Brequinar; Camostat; Dapivirine; Nafamostat; Oseltamivir; Ribavirin; Rimantadine; Umifenovir; Verdinextor; Zanamivir	Amantadine; Oseltamivir; Pentosan polysulfate; Rimantadine
	HDV	Beclabuvir	
	HeV	Remdesivir	
	hPIV	Mycophenolic acid; Remdesivir; Ribavirin; Umifenovir	Camostat; Nafamostat
	HTNV	Selenazofurin; Umifenovir	
	JUNV	Erlotinib ; Galidesivir; Sunitinib	
	LACV	Galidesivir	
	LASV	CR-31-B (-); Galidesivir; Remdesivir; Silvestrol	
	LCMV	ABT-737; Clofazimine; Mycophenolic acid; Obatoclax	
	MARV	Amoidarone; Apilomod; Galidesivir; Hydroxyzine; Promethazine; Remdesivir	Benztropine
	MeV	Galidesivir; Remdesivir	Camostat; Nafamostat
	MuV	Remdesivir	
	NiV	Galidesivir; Remdesivir	
	PICV	Selenazofurin	
	PTV	Mycophenolic acid; Ribavirin	
	RABV	ABMA; Clofazimine; DABMA	
	RSV	4´-fluorouridine; Acetylsalicyclic acid; Erlotinib; Galidesivir; Remdesivir; Ribavirin; Sunitinib; Thapsigargin; Umifenovir; Verdinextor	Camostat; Nafamostat
	RVFV	Azacitidine; Bortezomib; Cyclosporine A; Galidesivir; Minocycline; Oritavancin; Quinacrine; Ritonavir; Selenazofurin; Sorafenib	Remdesivir; Tilorone
	SFTSV	Bleomycin; Clofarabine; Favipiravir; Hexachlorophene; Nifedipine; Regorafenib; Ribavirin	
	SUDV	Galidesivir	
	VSV	25HC	
	VSV	Amoidarone; Clomipramine; Doxycycline; Tamoxifen; Toremifene	Amiodarone; Gefetinib; Promethazine; Remdesivir; Teicoplanin; Toremifene

S.3 BSA-scoring system

S.3.1 BSA host targets



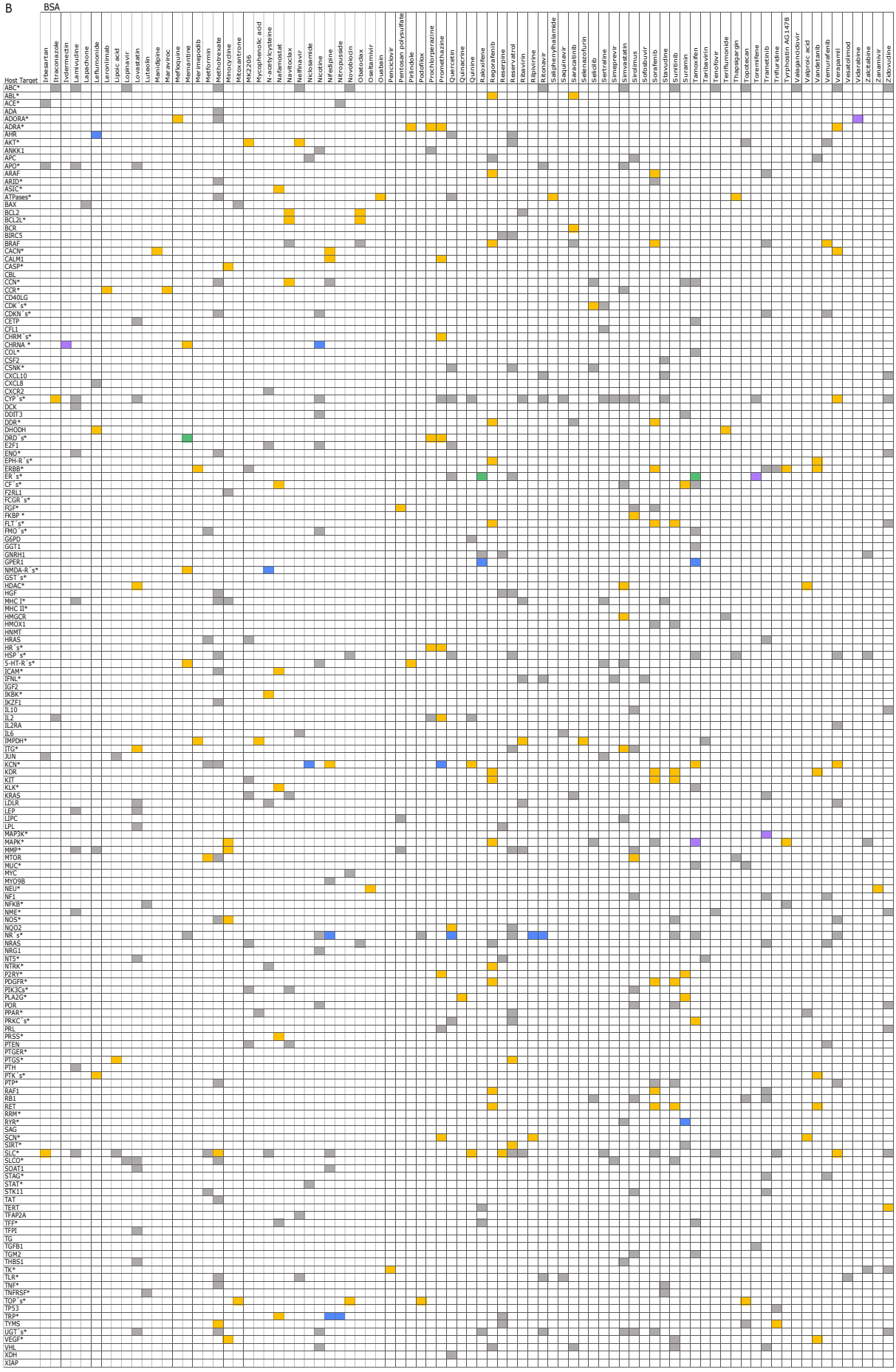

B
BSA
Host Target
Irbesartan
Itraconazole
Ivermectin
Lamivudine
Lapachone
Leflunomide
Leronlimab
Lipoic acid
Lopinavir
Lovastatin
Luteolin
Manidipine
Maraviroc
Mefloquine
Memantine
Merimepodib
Metformin
Methotrexate
Minocycline
Mitoxantrone
MK2206
Mycophenolic acid
N-acetylcysteine
Nafamostat
Navitoclax
Neflnavir
Niclosamide
Nicotine
Nifedipine
Nitroprusside
Novobiocin
Obatoclax
Oseltamivir
Ouabain
Penciclovir
Pentosan polysulfate
Pirlindole
Podofilox
Prochlorperazine
Promethazine
Quercetin
Quinacrine
Quinine
Raloxifene
Regorafenib
Reserpine
Resveratrol
Ribavirin
Ribavirine
Rifampicin
Salphenylhalamide
Saquinavir
Sanguinarine
Selenazofurin
Selidib
Sertraline
Simeprevir
Simvastatin
Sirolimus
Sofosbuvir
Sorafenib
Stavudine
Sunitinib
Suramin
Tamoxifen
Taribavirin
Tenofovir
Teriflumonide
Thapsigargin
Topotecan
Toremifene
Tramethinib
Trifluridine
Tyrphostin AG1478
Valaganciclovir
Valproic acid
Vandetanib
Vemurafenib
Verapamil
Vesatolimod
Vidarabine
Zalcitabine
Zanamivir
Zidovudine
ABC*
ABL*
ACE*
ADA
ADORA*
ADRA*
AHR
AKT*
ANKK1
APC
APO*
ARAF
ARID*
ASIC*
ATPases*
BAX
BCL2
BCL2L*
BCR
BIRC5
BRAF
CACN*
CALM1
CASP*
CBL
CCN*
CCR*
CD40LG
CDK`s*
CDKN`s*
CETP
CFL1
CHRM`s*
CHRNA *
COL*
CSF2
CSNK*
CXCL10
CXCL8
CXCR2
CYP`s*
DCK
DDIT3
DDR*
DHODH
DRD`s*
E2F1
ENO*
EPH-R`s*
ERBB*
ER`s*
CF`s*
F2RL1
FCGR`s*
FGF*
FKBP *
FLT`s*
FNO`s*
G6PD
GGT1
GNRH1
GPER1
NMDA-R`s*
GST`s*
HDAC*
HGF
MHC I*
MHC II*
HMGCR
HMOX1
HNMT
HRAS
HR`s*
HSP`s*
5-HT-R`s*
ICAM*
IFNL*
IGF2
IKBK*
IKZF1
IL10
IL2
IL2RA
IL6
IMPDH*
ITG*
JUN
KCN*
KDR
KIT
KLK*
KRAS
LDLR
LEP
LIPC
LPL
MAP3K*
MAPK*
MMP*
MTOR
MUC*
MYC
MYO9B
NEU*
NF1
NFKB*
NME*
NOS*
NQO2
NR`s*
NRAS
NRG1
NT5*
NTRK*
P2RY*
PDGFR*
PIK3Cs*
PLA2G*
POR
PPAR*
PRKC`s*
PRL
PRSS*
PTEN
PTGER*
PTGS*
PTH
PTK`s*
PTP*
RAF1
RB1
RET
RRM*
RYR*
SAG
SCN*
SIRT*
SLC*
SLCO*
SOAT1
STAG*
STAT*
STK11
TAT
TERT
TFAP2A
TFF*
TFPI
TG
TGFB1
TGM2
THBS1
TK*
TLR*
TNF*
TNFRSF*
TOP`s*
TP53
TRP*
TYMS
UGT`s*
VEGF*
VHL
XDH
XIAP

Figure S.3.1: BSAs with overlapping host target genes. The colors imply effects the BSA has on the corresponding target: Yellow for BSA acting inhibitory (inhibitor, antagonist, blocker, negative modulator, or inverse agonist), blue for BSA acting stimulatory (Agonist, partial agonist, activator, or inducer), purple for BSA acting modulatory (modulator or allosteric modulator) and green for BSA acting both inhibitory and stimulatory. Note: The two Figures include different targets, but same BSAs. Further, it includes only targets which are aimed by more than two BSAs. * Targets that are clustered together (e.g STAT* covers STAT3, STAT4, STAT5 and STAT6). Table S.3.1 shows clustered target gene names.

Table S.3.1: Host target clusters and its gene members. The table shows clustered targets (*), protein name, the gene names included in clusters, and UniProtKB reference for each respective gene.

Target gene	Target protein name	Genes included in *	UniProtKB ID
ABC*	ATP-binding casette transporters	ABCA1; ABCB1; ABCB11; ABCB4; ABCC1; ABCC10; ABCC2; ABCC3; ABCC4; ABCC5; ABCG2	O05477; P08183; O95342; P21439; P33527; Q5T3U5; Q92887; O15438; O15439; O15440; Q9UNQ0
ABL*	Tyrosine-protein kinase ABL	ABL1; ABL2	P00519; P42684
ACE*	Angiotensin converting enzyme	ACE; ACE2	P12821; Q9BYF1
ADA	Adenosine deaminase		P00813
ADORA*	Adenosine receptor A	ADORA1; ADORA2A; ADORA2B; ADORA3	P30542; P29274; P29275; P0DMS8
ADRA*	Adrenergic receptor	ADRA1A; ADRA1B; ADRA1D; ADRA2A; ADRA2B; ADRA2C	P35348; P35368; P25100; P08913; P18089; P18825
AHR	Aryl hydrocarbon receptor		P35869
AKT*	Protein kinase B	AKT1; AKT2; AKT3	P31749; P31751; Q9Y243
ANKK1	Ankyrin repeat and protein kinase domain-containing protein 1		Q8NFD2
APC	Adenomatous polyposis coli protein		P25054
APO*	Apolipoprotein	APOA1; APOA5; APOB; APOC3; APOE	P02647; Q6Q788; P04114; P02656; P02649
ARAF	Serine/threonine-protein kinase A-Raf		P10398
ARID*	AT-rick interactive domain-containing protein	ARID1A; ARID5B	O14497; Q14865
ASIC*	Acid-sensing ion channel	ASIC1; ASIC2; ASIC3	P78348; Q16515; Q9UHC3
ATPases*	Sodium/potassium-transporting ATPase.	ATP1A1; ATP1A2; ATP1A3; ATP1A4; ATP1B1; ATP1B2; ATP1B3;	P05023; P50993; P13637; Q13733; P05026; P14415; P54709
	Sarcoplasmic/endoplasmic reticulum calcium ATPases	ATP2A1	Q14983
	Potassium-transporting ATPase	ATP4A; ATP4B	P20648; P51164
	ATP synthase	ATP5F1A; ATP5B; ATP5C1; ATP5F1E	P25705; Q0QEN7; P36542; P56381
BAX	Apoptosis regulator Bax		Q07812
BCL2	Apoptosis regulator Bcl-2		P10415
BCL2L*	Bcl-2 like protein	BCL2L1; BCL2L2	Q07817; Q92843
BCR	Breakpoint cluster region protein		P11274
BIRC5	Baculoviral IAP repeat-containing protein 5		O15392
BRAF	Serine/threonine-protein kinase B-raf		P15056
CACN*	Voltage-dependent P/Q-type calcium channel	CACNA1A	O00555
	Voltage-dependent N-type calcium channel	CACNA1B	Q00975
	Voltage-dependent L-type calcium channel	CACNA1D; CACNA1F; CACNA1S; CACNB1; CACNB2; CACNB3; CACNB4	Q01668; O60840; Q13698; Q02641; Q08289; P54284; O00305
	Voltage-dependent T-type calcium channel	CACNA1G; CACNA1H; CACNA1I	O43497; O95180; Q9P0X4
	Voltage-dependent calcium channel	CACNA2D1; CACNG1	P54289: Q06432
CALM1	Calmodulin-1		P0DP23
CASP*	Caspase	CASP1; CASP3	P29466; P42574
CBL	E2 ubiquitin-protein ligase		P22681
CCN*	Cycline	CCNA1; CCNA2; CCNB1; CCND1	P78396; P20248; P14635; P24385
CCR*	C-C chemokine receptor	CCR2; CCR5	P41597; P51681
CD40LG	CD40 ligand		P29965
CDK´s*	Cyclin-dependent kinase	CDK1; CDK10; CDK2; CDK3; CDK4; CDK5; CDK6; CDK7; CDK8; CDK9	P06493; Q15131; P24941; Q00526; P11802; Q00535; Q00534; P50613; P49336; P50750
CDKN´s*	Cyclin-dependent kinase inhibitor	CDKN1A; CDKN1B; CDKN2A;	P38936; P46527; P42771
CETP	Cholesteryl ester transfer protein		P11597
CFL1	Cofilin-1		P23528
CHRM´s*	Muscarinic acetylcholine receptor	CHRM1; CHRM2; CHRM3; CHRM5	P11229; P08172; P20309; P08912
CHRNA*	Neuronal acetylcholine receptor	CHRNA10; CHRNA2; CHRNA3; CHRNA4; CHRNA5; CHRNA6; CHRNA7; CHRNA9	Q9GZZ6; Q15822; P32297; P43681; P30532; Q15825; P36544; Q9UGM1
COL*	Collagen alpha-1 chain	COL18A1; COL1A1; COL26A1	P39060; P02452; Q96A83
CSF2	Granulocyte-macrophage colony-stimulating factor (GM-CSF)		P04141
CSNK*	Casein kinase	CSNK1E; CSNK2A1; CSNK2B	P49674; P68400; P67870
CXCL10	C-X-C motif chemokine 10		P02778
CXCL8	Interleukin 8		P10145
CXCR2	IL-8 receptor type 2		P25025
CYP´s*	Cytochrome P450	CYP1A1; CYP1B1; CYP2A14; CYP2A6; CYP2B6; CYP2C8; CYP2E1; CYP2F1; CYP2J2; CYP3A4; CYP3A5; CYP3A7; CYP4A11; CYP4F2; CYP51A1; CYP7B1	P04798; Q16678; Q9Z1H8; P11509; P20813; P10632; P05181; P24903; P51589; P08684; P20815; P24462; Q02928; P78329; Q16850; O75881
	25-hydroxyvitamin D-1 alpha hydroxyls, mitochondrial	CYP27B1	O15528
	Vitamin D 25-hydroxylase	CYP2R1	Q6QX0
DCK	Deoxycytidine kinase		P27707
DDIT3	DNA damage-inducible transcript 3 protein		P35638
DDR*	Discoidin domain-containing receptor	DDR1; DDR2	Q08345; Q16832
DHODH	Dihydroorotate dehydrogenase		Q02127
DRD´s*	Dopamine receptor	DRD1; DRD2; DRD3; DRD4; DRD5	P21728; P14416; P35462; P21917; P21918
E2F1	Transcription factor E2F1		Q01094
ENO*	Enolase	ENO3; ENOSF1	P13929; Q7L5Y1
EPH-R´s*	Ephrin receptor	EPHA1; EPHA10; EPHA2; EPHA3; EPHA4; EPHA5; EPHA6; EPHA7; EPHA8; EPHB1; EPHB2; EPHB3; EPHB4; EPHB6	P21709; Q6JZY3; P29317; P29320; P54764; P54756; Q9UF33; Q15375; P29322; P54762; P29323; P54753; P54760; O15197
ERBB*	Receptor tyrosine-protein kinase ERBB	EGFR; ERBB2; ERBB3; ERBB4	P00533; P04626; P21860; Q15303
ER´s*	Estrogen receptor	ESR1; ESR2	P03372; Q92731
	Estrogen-related receptor	ESRRA; ESRRB; ESRRG	P11474; O95718; P62508
CF´s*	Coagulation factor	F12; F13; F2	P00748; P00488; P00734
F2RL1	Coagulation factor II receptor like 1		P55085
FCGR´s*	Fc receptor (high affinity)	FCER1G; FCGR1A	P30273; P12314
	Fc receptor (low affinity)	FCGR2A; FCGR2C; FCGR3A; FCGR3B	P12318; P31995; P08637; O75015
FGF*	Fibroblast growth factor	FGF1; FGF2; FGF3; FGF4;	P05230; P09038; P11487; P08620
FKBP*	Peptidyl-proyl cis-trans isomerase	FKBP1A; FKBP4; FKBP5	P62942; Q02790; Q13451
FLT´s*	Vascular endothelial growth factor receptor	FLT1, FLT4	P17948; P35916
	Fms-like tyrosine kinase	FLT3	P36888
FMO´s*	Dimethylaniline monooxygenase [N-oxide-forming]	FMO1; FMO3; FMO5	Q01740; P31513; P49326
G6PD	Glucose-6-phosphate 1 dehydrogenase		P11413
GGT1	Glutathione hydrolase 1 proenzyme		P19440
GNRH1	Progonadoliberin-1		P01148
GPER1	G-protein coupled estrogen receptor 1		Q99527
NMDA-R´s*	Glutamate receptor ionotropic	GRIN1; GRIN2A; GRIN2B; GRIN2C; GRIN2D; GRIN3A; GRIN3B	Q05586; Q12879; Q13224; Q14957; O15399; Q8TCU5; O60391
GST´s*	Glutathione S-transferase	GSTP1; GSTT1	P09211; P30711
HDAC*	Histone deacetylase	HDAC10; HDAC11; HDAC2; HDAC3; HDAC4; HDAC5; HDAC7; HDAC8; HDAC9	Q969S8; Q96DB2; Q92769; Q15379; P56524; Q9UQL6; Q8WUI4; Q9BY41; Q9UKV0
HGF	Hepatocyte growth factor		P14210
MHC I*	HLA class I histocompatibility antigen	HLA-A; HLA-B; HLA-C	P04439; P01889; P10321
MHC II*	HLA class II histocompatibility antigen	HLA-DPB1; HLA-DPB2; HLA-DQB1	P04440; N.a.; P01920
HMGCR	HMG-CoA reductase		P04035
HMOX1	Heme oxygenate 1		P09601
HNMT	Histamine N-methyltransferase		P50135
HRAS	GTPase HRas		P01112
HR´s*	Histamine receptor	HRH1; HRH2; HRH4	P35367; P25021; Q9H3N8
HSP´s*	Heat shock protein	HSP90AB1; HSP90AA1; HSPA2; HSPA4; HSPA5; HSPA8; HSPB2	P08238; P07900; P54652; P34932; P11021; P11142; Q16082
5-HT-R´s*	5-hydroxytryptamine receptor	HTR1A; HTR1B; HTR1D; HTR1E; HTR2A; HTR2B; HTR2C; HTR3A; HTR3B; HTR4; HTR6; HTR7	P08908; P28222; P28221; P28566; P28223; P41595; P28335; P46098; O95264; Q13639; P50406; P34969
ICAM*	Intracellular adhesion molecule	ICAM1; ICAM3	P05362; P32942
IFNL*	Interferon lambda	IFNL3; IFNL4	Q8IZI9; K9M1U5
IGF2	Insulin-like growth factor II		P01344
IKBK*	Inhibitor of nuclear factor kappa-B kinase subunits	IKBKB; IKBKE; IKBKG	O14920; Q14164; Q9Y6K9
IKZF1	DNA-binding protein Ikaros		Q13422
IL10	Interleukin-10		P22301
IL2	Interleukin-2		P60568
IL2RA	Interleukin-2 receptor subunit alpha		P01589
IL6	Interleukin-6		P05231
IMPDH*	Inosine-5´-monophosphate dehydrogenase	IMPDH1; IMPDH2	P20839; P12268
ITG*	Intergrin alpha	ITGA2; ITGA2B; ITGA5; ITGAL; ITGAM	P17301; P08514; P08648; P20701; P11215
	Intergrin beta	ITGB1; ITGB2; ITGB3	P05556; P05107; P05106
JUN+	Transcription factor Jun		P05412

KCN*	Potassium voltage-gated channel	KCNA1; KCNA10; KCNA3; KCNA4; KCNA5; KCNA6; KCNA7; KCNB1; KCNB2; KCNC1; KCNC2; KCNC3; KCNC4; KCND1; KCND2; KCNE1; KCNE2; KCNE3; KCNE4; KCNE5; KCNF1; KCNG1; KCNG2; KCNG3; KCNG4; KCNH1; KCNH2; KCNH3; KCNH4; KCNH5; KCNH6; KCNH7; KCNH8; KCNQ1; KCNQ2; KCNQ3; KCNQ4; KCNQ5; KCNS1; KCNS3; KCNV1; KCNV2; KCNAB1; KCNAB2	Q09470; Q16322; P22001; P22459; P22460; P17658; Q96RP8; Q14721; Q92953; P48547; Q96PR1; Q14003; Q03721; Q9NSA2; Q9NZV8; P15382; Q9Y6J6; Q9Y6H6; Q8WWG9; Q9UJ90; Q9H3M0; Q9UIX4; Q9UJ96; Q8TAE7; Q8TDN1; O95259; Q12809; Q9ULD8; Q9UQ05; Q8NCM2; Q9H252; Q9NS40; Q96L42; P51787; O43526; O43525; P56696; Q96KK3; Q9BQ31; Q9NR82; Q6PIU1; Q8TDN2; Q14722; Q13303
	Kv channel-interacting protein	KCNIP1	Q9NZI2
	Inward rectifier potassium channel	KCNJ11; KCNJ3	Q14654; P48549
	Calcium-activated potassium channel	KCNMB1	Q16558
	Intermediate conductance calcium-activated potassium channel protein	KCNN4	O15554
	Outward rectifier potassium channel	KCNT1	Q5JUK3
KDR	Vascular endothelial growth factor receptor 2		P35968
KIT	Mast/stem cell growth factor receptor Kit		P10721
KLK*	Kallikrein	KLK1; KLK3; KLK4	P06870; P07288; Q9Y5K2
KRAS	GTPase KRas		P01116
LDLR	Low-density lipoprotein receptor		P01130
LEP	Leptin		P41159
LIPC	Hepatic triacylglycerol lipase		P11150
LPL	Lipoprotein lipase		P06858
MAP3K*	Mitogen-activated protein kinase kinase kinase	MAP3K1; MAP3K10; MAP3K20	Q13233; Q02779; Q9NYL2
MAPK*	Mitogen-activated protein kinase	MAPK1; MAPK10; MAPK11; MAPK12; MAPK13; MAPK14; MAPK15; MAPK3; MAPK4; MAPK6; MAPK7; MAPK8; MAPK9	P28482; P53779; Q15759; P53778; O15264; Q16539; Q8TD08; P27361; P31152; Q16659; Q13164; P45983; P45984
MMP*	Matrix metalloproteinase	MMP1; MMP2; MMP25; MMP9	P03956; P08253; Q9NPA2; P14780
MTOR	Serine/threonine-protein kinase mTOR		P42345
MUC*	Mucin	MUC16; MUC13	Q8WXI7; Q9H3R2
MYC	Myc proto-oncogene protein		P01106
MYO9B	Unconventional myosin-IXb		Q13459
NEU*	Sialidase	NEU1; NEU2; NEU3	Q99519; Q9Y3R4; Q9UQ49
NF1	Neurofibromin		P21359
NFKB*	Nuclear factor NF-kappa-B subunits	NFKB1; NFKB2	P19838; Q00653
NME*	Nucleoside diphosphate kinase	NME1; NME2	P22392; P15531
NOS*	Nitric oxide synthase	NOS1; NOS2; NOS3	P29475; P35228; P29474
	Nitric oxide synthase 1 adaptor protein	NOS1AP	O75052
NQO2	Quinone reductase 2		P16083
NR`s*	Nuclear receptor	NR1H2; NR1H3; NR1I2; NR1I3; NR2E3; NR3C1; NR4A1; NR4A3	P55055; Q13133; O75469; Q14994; Q9Y5X4; P04150; P22736; Q92570
NRAS	GTPase NRas		P01111
NRG1	Pro-neuregulin-1		Q02297
NT5*	Cytosolic 5`-nucleotidase	NT5C1A; NT5C2; NT5C3A;	Q9BXI3; P49902; Q9H0P0
	5`-nucleotidase	NT5E	P21589
NTRK*	Nerve growth factor receptor	NTRK1; NTRK2	P04629; Q16620
P2RY*	P2X purinoceptlor	P2RX1; P2RX2; P2RX3; P2RX4; P2RX5; P2RX6; P2RX7	P51575; Q9UBL9; P56373; Q99571; Q93086; O15547; Q99572
	P2Y purinoceptlor	P2RY1; P2RY10; P2RY11; P2RY12; P2RY13; P2RY14; P2RY2; P2RY4; P2RY6; P2RY8	P47900; O00398; Q96G91; Q9H244; Q9BPV8; Q15391; P41231; P51582; Q15077; Q86VZ1;
PDGFR*	Platelet-derived growth factor receptor	PDGFRA; PDGFRB	P16234; P09619
PIK3C`s*	PI4,5-bisphosphate 3-kinase subunit	PIK3CA; PIK3CB; PIK3CD; PIK3CG;	P42336; P42338; O00329; P48736
	PI 3-kinase regulatory subunit	PIK3R2	O00459
PLA2G*	Phospholipase	PLA2G1B; PLA2G2A; PLA2G4A PLA2G6	P04054; P14555; P47712; O60733
POR	NADPH—cytochrome P450 reductase		P16435
PPAR*	Peroxisome proliferator-activated receptor	PPARA; PPARD; PPARG; PPARGC1B	Q07869; Q03181; P37231; Q86YN6
PRKC*	Protein kinase C	PRKCA; PRKCB; PRKCD; PRKCE; PRKCG; PRKCH; PRKCI; PRKCQ; PRKCZ; PRKD1	P17252; P05771; Q05655; Q02156; P05129; P24723; P41743; Q04759; Q05513; Q15139
	DNA-dependent protein kinase	PRKDC	P78527
PRL	Prolactin		P01236
PRSS*	Trypsin	PRSS1; PRSS2; PRSS3	P07477; P07478; P35030
PTEN	PI3,4,5-triphosphate 3-phosphatase and dual-specificity protein phosphatase PTEN		P60484
PTGER*	Prostaglandin E2 receptor	PTGER1; PTGER2; PTGER3	P34995; P43116; P43115
PTGS*	Prostaglandin G/H synthase	PTGS1; PTGS2	P23219; P35354
PTH	Parathyroid hormone		P01270
PTK`s*	Protein-tyrosine kinase	PTK2B; PTK6	Q14289; Q13882
PTP`s*	Protein tyrosine phosphatase IVA	PTP4A1; PTP4A3	Q93096; Q75365
	Protein tyrosine phosphatase non-receptor	PTPN12; PTPN6	Q05209; P29350
	Receptor-type tyrosine protein phosphatase	PTPRB; PTPRC; PTPRD; PTPRM	P23467; P08575; P23468; P28827
RAF1	Proto-oncogene serine/threonine-protein kinase Raf		P04049
RB1	Retinoblastoma-associated protein		P06400
RET	Proto-oncogene tyrosine protein kinase receptor Ret		P07949
RRM*	Ribonucleoside-diphosphate reductase	RRM1; RMM2; RRM2B	P23921; P31350; Q7LG56
RYR*	Ryanodine receptor	RYR1; RYR2; RYR3	P21817; Q92736; Q15413
SAG	S-arrestin		P10523
SCN*	Voltage-gated sodium channel	SCN10A; SCN11A; SCN1A; SCN2A; SCN3A; SCN4A; SCN5A; SCN7A; SCN8A; SCN9A	Q9Y5Y9; Q9UI33; P35498; Q99250; Q9NY46; P35499; Q14524; Q01118; Q9UQD0; Q15858
	Sodium channel beta	SCN1B; SCN2B; SCN3B; SCN4B;	Q07699; O60939; Q9NY72; Q8IWT1
	Amiloride-sensitive sodium channel	SCNN1A; SCNN1B; SCNN1D; SCNN1G	P37088; P51168; P51172; P51170
SIRT*	NAD-dependent protein deacetylase sirtuin	SIRT1; SIRT2; SIRT3	Q96EB6; Q8IXJ6; Q9NTG7
	NAD-dependent protein deacylase sirtuin	SIRT5	Q9NXA8
SLC*	Solute carrier family	SLC10A1; SLC14A2; SLC15A1; SLC15A2; SLC16A7; SLC18A2; SLC19A1; SLC19A3; SLC1A1; SLC22A1; SLC22A11; SLC22A12; SLC22A2; SLC22A3; SLC22A4; SLC22A5; SLC22A6; SLC22A7; SLC22A8; SLC23A1; SLC23A2; SLC26A8; SLC28A1; SLC28A2; SLC28A3; SLC29A1; SLC19A2; SLC29A3; SLC29A4; SLC2A1; SLC2A2; SLC2A3 SLC2A4; SLC30A9; SLC46A1; SLC47A1; SLC47A2; SLC5A6; SLC6A12; SLC6A2; SLC6A3; SLC6A4; SLC7A11; SLC8A1; SLC9A1; SLC9A5	Q14973; Q15849; P46059; Q16348; O60669; Q05940; P41440; Q9BZV2; P43005; O15245; Q9NSA0; Q96S37; O15244; O75751; Q9H015; O76082; Q4U2R8; Q9Y694; Q8TCC7; Q9UHI7; Q9UHG3; Q96RN1; O00337; O43868; Q9HAS3; Q99808; O60779; Q9BZD2; Q7RTT9; P11166; P11168; P11169; P14672; Q6PML9; Q96NT5; Q96FL8; Q86VL8; Q9Y289; P48065; P32418; Q01959; P31645; Q9UPY5; P32418; P19634; Q14940
SLCO*	Solute carrier organic anion transporter	SLCO1A2; SLCO1B1; SLCO1B3; SLCO1C1; SLCO2B1	P46721; Q9Y6L6; Q9NPD5; Q9NYB5; O94956;
SOAT1	Sterol O-acetyltransferase 1		P35610
STAG*	Cohesin subunit SA	STAG2; STAG3	Q8N3U4; Q9UJ98
STAT*	Signal transducer and activator of transcription	STAT3; STAT4; STAT5B; STAT6	P40763; Q14765; P51692; P42226
STK11	Serine/threonine-protein kinase STK11		Q15831
TAT	Tyrosine aminotransferase		P17735
TERT	Telomerase reverse transcriptase		O14746
TFAP2A	Transcription factor AP-2-alpha		P05549
TFF*	Trefoil factor	TFF1; TFF2; TFF3	P04155; Q03403; Q07654
TFPI	Tissue factor pathway inhibitor		P10646
TG	Thyroglobulin		P01266
TGFB1	Transforming growth factor beta-1 proprotein		P01137
TGM2	Protein-glutamine gamma-glutamyltransferase 2		P21980
THBS1	Thrombospondin-1		P07996
TK*	Thymidine kinase	TK1; TK2	P04183; O00142
TLR*	Toll-like receptor	TLR3; TLR4; TLR7; TLR9	O15455; O00206; Q9NYK1; Q9NR96
TNF*	Tumor necrosis factor	TNF	P01375
	Tumor necrosis factor induced protein	TNFAIP3; TNFAIP6	P21580; P98066
TNFRSF*	Tumor necrosis factor receptor	TNFRSF10B; TNFRSF11A; TNFRSF1A; TNFRSF1B	O14763; Q9Y6Q6; P19438; P20333
TOP`s*	DNA topoisomerase	TOP1; TOP1MT; TOP2A; TOP2B	P11387; Q969P6; P11388; Q02880
TP53	Cellular tumor antigen p53		P04637
TRP*	Transient receptor potential cation channel	TRPA1; TRPM2; TRPM3; TRPM4; TRPM7; TRMP8; TRPV1; TRPV2	O75762; O94759; Q9HCF6; Q8TD43; Q96QT4; Q7Z2W7; Q8NER1; Q9YSS1
	Short transient receptor potential channel	TRPC1; TRPC5; TRPC7	P48995; Q9UL62; Q9HCX4
TYMS	Thymidylate synthase		P04818
UGT`s*	UDP-glucuronosyltransferase	UGT1A1; UGT2A10; UGT1A3; UGT1A4; UGT1A5; UGT1A7; UGT1A8; UGT1A9; UGT2A1; UGT2B10; UGT2B7; UGT3A1	P22309; Q9HAW8; P35503; P22310; P35504; Q9HAW7; Q9HAW9; O60656; P0DTE4; P36537; P16662; Q6NUS8
VEGF*	Vascular endothelial growth factor	VEGFA; VEGFC	P15692; P49767
VHL	Von Hippel-Lindau disease tumor suppressor		P40337
XDH	Xanthine dehydrogenasE/oxidase		P47989
XIAP	E3 ubiquitin-protein ligase XIAP		P98170

S.3.2 Immunomodulatory BSA

Table S.3.2: BSAs with immunomodulatory properties. The table shows BSAs identified with Immunomodulatory activities, and explanation behind this reasoning. Specified are BSA name and its effect on the immune system and/or inflammation.

BSA	Effect on Immune system	Activity
25HC	Amplifies inflammatory signaling	Pro
ABT-737	Indirectly initiates apoptotic cascade of immune cells	Suppressive
Acetylsalicyclic acid	Modulate innate and adaptive immune responses; apoptosis of immune cells; regulate cytokine production of immune cells.	Suppressive; Anti
Adefovir	Inhibitory effect on cell mediated immunity	Implied suppressive
Adefovir Dipivoxil	Inhibitory effect on cell mediated immunity	Implied suppressive
Amantadine	Inhibits T lymphocytes; reduce production of pro-inflammatory cytokines	Implied suppressive; Anti
Amiloride	DNA-adjuvant; promote humoral immune responses	Stimulatory
Amitriptyline	Inhibits TNF-alpha and IL-12 production	Suppression; Anti
Anisomycin	Induce expression of immune-regulation associated genes; Indirectly stimulates NK cells	Stimulatory
Apilimod	Enhance IL-10 production; Suppress synthesis of IL-12 and IL-23; Reduced Th1 and Th17 cytokines and chemokines	Suppressive; Stimulatory; Anti
Artesunate	Anti-complement activity, inhibiting C4 and C3 activation and assembly of MAC.	Suppressive; Anti
Ascorbic acid	Stimulate DC to produce more IL-12; activation of T and B cell functions	Stimulatory; Pro
Azacitidine	Proapoptotic; inhibition of T cell activation; impairs DNA methylation	Suppressive
Azithromycin	Inhibition of pro-inflammatory cytokine production; inhibition of neutrophil influx	Implied suppressive; Anti
Berberine	Inhibition of pro-inflammatory cytokine production, TNF-alpha, IFN-gamma and IL-17; Increase in expression of IL-10 and IL-4	Suppressive; Stimulatory; Anti
Betulinic acid	Decrease in IL-6 production; Enhance TNF-alpha and IL-1beta production	Anti
Bexarotene	Downregulate IL-6 and IL-8 and monocyte chemoattractant protein-1.	Implied suppressive; Anti
Bortezomib	Decrease T cell count; enhanced B cell and DC apoptosis; loss of antigen presentation; reduce inflammatory cytokines IL-10, IL-6, IL-12, IFN-gamma and IFN-alpha; stimulation of NK cell actions.	Suppressive; Stimulatory; Anti
Brequinar	Inhibition of T cell proliferation and antibody production	Suppressive
Bromocriptine	Suppress cell-mediated, humoral and autoimmune reactions. Reduced level of extracellular TNF-alpha	Suppressive; Anti
Caffeine	Suppress NEU and MO chemotaxis; suppress production of TNF-alpha; reduce T cell proliferation and impair production of Th1, Th2 and Th3 cytokines.	Implied suppressive; Anti
Camptothecin	Increase expression of PD-L1; Suppression of adaptive immune system	Implied suppressive
Cenicriviroc	Inhibits monocyte chemotaxis	Implied suppressive; Anti
Cepharanthine	Suppress pro-inflammatory molecules	Anti
Chichoric acid	Pro-apoptotic activities	Anti
Chloroquine	Reduce cytokine production, IL-1 and IL-6; Inhibits TLR signaling	Suppressive; Anti
Chlorpromazine	Downregulate IL-2, IFN-gamma, IL-4, TNF and GM-CSF; upregulates secretion of IL-10; enhance humoral autoimmune reactions; block cellular immune responses	Suppressive; Anti
Clarithromycin	Reduction in MF, NEU, EOS counts; Reduction in IFN-gamma and TNF-alpha	Suppressive; Anti
Clofazimine	Inhibition of MF, NEU and lymphocyte transformation	Suppressive; Anti
Clomipramine	Decrease in TNF-alpha; Increase TGF-beta and IL-10	Anti
Clotrimazole	Inhibits IKCa1 channels in activated lymphocytes	Implied suppressive
Clozapine	Increased IL-1RA production; dampened NF-kB activation and TNF-alpha production; decrease in TLR expression levels	Suppressive; Anti
Cyclosporine	Blocking transcription of cytokine genes of IL-4 and IL-2, thus inhibiting T cell activation	Suppressive
Dasatanib	Inhibits proliferation and activation of T lymphocytes; suppress cytotoxic activity of NK cells	Suppressove
Diltiazem	Decreased production of inflammatory cytokines; Inhibits Kv1.3 channels expressed on lymphocytes	Suppressive; Anti
Doxycycline	Modulate NF-kB, p38 and ERK1/2/MAPK pathways; Reduction in IL-6, IL-1beta and TNF-alpha levels	Anti
Emetine	Suppress maturation of T cells in thymus	Suppressive
Emodin	Anti-proliferative effect on lymphocytes; Reduce formation and release of Th1 and Th17; Induced Th2 and Treg.	Anti
Eptifibatide	Reduce levels of IL-8, IL-6, MCP-1, IL-1beta and TNF-alpha	Anti
Erlotinib	Inhibition of T cell activation and proliferation; Inhibits secretion of pro-inflammatory cytokines	Suppressive
Etanercept	Inhibits production of TNF-alpha, IL-6 and IL-1	Anti
Eucalyptol	Inhibits NLRP2 inflammasome activation and pro inflammatory cytokine production; Reduce inflammatory cell infiltration	Anti
Ezetimibe	Modulate CD4+ T helper cells and memory T cells	N.a.
Fenofibrate	Inhibits T helper cell differentiation; Suppress production of pro-inflammatory cytokines; Upregulation of IL-10; Suppress plasma levels of IgG	Anti
Fenretinide	Decrease expression of inflammatory cytokines; Inhibits phosphorylation of ERK1/2	Anti
Flavopridol	Activates STAT1 in IFN-gamma signalling; Inhibits IFN-gamma induced NO production	Anti

Fludarabine	Depletion of lymphocytes; Induction of prolonged immunosuppression; inhibits cytokine induced activation of STAT1	Suppressive
Fluoxetine	Decrease in TNF-alpha and INF-gamma; increase of IL-10	Anti
Fluvastatin	Induce IL-1beta release; trigger inflammasome activation; reduced leukocyte adherence responses to platelet activation factor; reduction in NF-kB	Anti; Pro
Formoterol	Inhibitory effect on granulocyte adhesion to epithelium; inhibition of inflammatory cells	Anti
Gefetinib	Increase NK cells and IFN-gamma; decrease IL-6; inhibition of TNF-alpha and IL-1	Anti; Pro
Gemcitabine	Promote naive T cell activation; enhance responses to vaccines	Stimulatory; Pro
Genistein	Reduction in pro-inflammatory processes; increased activity of CTLs and NK cells	Anti
Glycyrrhizin	Activation of CD4+ and CD8+ immune cells; Increasing IL-2, IL-6, IL-7 levels; Decrease in TNF-alpha levels	Stimulatory
Gossypol	Pro-apoptotic activities	Suppressive
GSK583	Blocks NOD2 signaling	Anti
GSK717	Blocks NOD2 signalling	Anti
Halofunginone	Inhibition of T cell functions and pro-inflammatory cytokines; Inhibits NF-kB and p38 MAPK phosphorylation	Anti
Hydroxychloroquine	Reduction in cytokine production, IL-1 and IL-6; Inhibits TLR singalling	Suppressive; Anti
IFN-alpha	Inducing antiviral immune response by innate immune system; Increased expression of MHC antigen; Increased NK and CTL activity; Induction of cytokines; Production of endogenous interferons	Stimulatory; Suppressive
IFN-beta	Modulate function of APCs to down regulate antigen presentation; promote Treg promoting cytokines, IL-4, IL-5 and IL-13; increase in B cell activity	Stimulatory; Suppressive
IFN-gamma	Regulator of antigen presentation; regulates proliferation and differentiation of lymphocytes	Stimulatory; Suppressive
IFN-lambda	Promote Th1 response; stimulate NK activity; enhance NEU activity	Stimulatory; Suppressive
IL-7	T cell development within themes and survival in periphery; B cell maturation	Stimulatory
Imatinib	Inhibits T cell proliferation; Attenuation of pro-inflammatory cytokine release, IL-6 and TNF-alpha	Anti
Ingavirin	Activation of TLR/RLR signaling of innate and adaptive immunity; differentiation of hematopoietic cell precursors	N.a.
Inosine	Enhances production of cytokines; differentiation of T lymphocytes	Stimulatory
Irbersartan	Downregulation of activator protein-1; inhibiting T lymphocytes	Suppressive
Itraconazole	Suppressive activity on alloreactivity	Suppressive
Ivermectin	Stimulate functions of T helper lymphocytes	Stimulatory
Leflumonide	Inhibition of DHODH; inhibit signaling of T and B cell proliferation	Suppressive
Leronlimab	Reduction of cytokine storm, IL-6	Anti
Lipoic acid	Decrease expression of IL-2 and IL-2Ralpha	Implied suppressive
Lopinavir	Decrease in activated CD4+ cells and memory cells	Implied suppressive
Lovastatin	Inhibits Kv1.3 channels expressed on lymphocytes; inhibits MHC class II expression	Implied suppressive; Anti
Luteolin	Inhibits recreation of pro-inflammatory cytokine TNF-alpha	Anti
Maraviroc	Decrease inflammation	Anti
Memantine	Inhibits Kv1.3 channels expressed on lymphocytes; inhibition of T cell responsiveness	Suppressive; Anti
Merimepodib	Suppress lymphocyte development	Anti
Metformin	Reduced production of pro-inflammatory cytokines; enhance formation of NETs	Anti
Methotrexate	Inhibition of NF-kB activation; inhibition of T cells, MF and endothelial cells	Suppressive
Minocycline	Anti-apoptotic; inhibition of MMPs, COX iNOS and PLA2	Anti
Mitoxantrone	Inhibition of proliferation of MF and T and B lymphocytes; Lowering secretion of IFN-gamma, TNF-alpha and IL-2; Apoptosis of T and B lymphocytes	Suppressive
Monensin	Reduced IL-1beta secretion; inhibits phagocytosis and reducing lysosomal activity	N.a.
Mycophenolic acid	Blocking lymphocyte proliferation	Suppressive; Anti
N-acetylcysteine	Modulate oxidative stress and inflammation of small intestine	N.a.
Nafamostat	Suppression of NF-kB activation	Anti
Navitoclax	Pro-apoptotic	N.a.
Niclosamide	Suppress expansion of follicular helper T cells	Anti
Nicotine	Limits production of pro-inflammatory cytokines, IL-6, IL-1beta and TNF-alpha	Anti
Nifedipine	Calcium channel blocker; dampen T cell immune responses	Suppressive
Nitazoxanide	Inhibits proliferation of T lymphocytes; Decrease of IL-1beta, IL-2, IL-6, IL-10 and IL-12	Anti
Obatoclax	Prevent development of immune responses	Implied suppressive
Ouabain	Inhibits NEU migration; reduced TNF-alpha and IFN-gamma levels	Anti
Pentosan polysulfate	Induce immune responses	Stimulatory
PUL-042	Stimulate lung innate immune system	Stimulatory
Querectin	Reduce expression of pro-inflammatory cytokines and chemokine; reduce expression of MHC class II; Blocks endocytosis of DCs.	Suppressive

Quinacrine	Inhibiting phospholipase A2, modulating Th1/Th2 response; inhibit recreation of pro-inflammatory cytokines and TLR7 and TLR9	Implied suppressive; Anti
Quinine	Stimulate innate immune defences	Stimulatory
Regorafenib	Dampen IFN-gamma induced PD-L1 expression; inhibits JAK1/2 STAT1 signaling	Implied suppressive
Reservastrol	Promote release of pro-inflammatory cytokines from immune cells, IL-10; Suppress production of TNF-alpha; Inhibition of COX-2; Suppression of NF-kB	Anti; Pro
Ribavirin	Shift from Th2 to Th1 immune response; Increase in Th1 cytokine production; Reduction in MF activation	Anti; Pro
Rimantadine	Diminished local immune responses	N.a.
Ritonavir	Decrease in memory and CD8+ T cells	Suppressive
Saikosaponin	Enhanced production of immunosuppressive mediators, Th1/Th2 cells, IL-4 and IL-10; Suppression of pro-immune mediators, TNF-alpha	Anti
Saquinavir	Inhibition of cytokine production	N.a.
Sertraline	Inhibits components of innate signaling pathway	Suppressive
Silvestrol	Start of infection, suppress generation of anti-inflammatory MF and DC phenotypes. In inflammation, accelerate transition from pro to anti-inflammatory status	Anti; Pro
Simvastatin	Reduce cytokine production and NF-kB activation; Inhibits MHC-II mediated T cell activation	Implied suppressive
Sirolimus	Inhibits mTOR; Prevents IL-2 induced T cell proliferation	Suppressive
Sorafenib	Inhibition of T cell proliferation; increase in PD-1	Suppressive
Sunitinib	Reduce expression of immunosuppressive cytokines and co-stimulatory molecules as IL-1, foxp3, PD-1, CTLA-4	Stimulatory
Suramin	Attenuate pro-inflammatory cytokines	Anti
Tamoxifen	Inhibits P-glycoprotein, regulate immunity; modulate NF-kB	Implied suppressive
Taribavirin	Shift from Th2 to Th1 immune response; Increase in Th1 cytokine production; Reduction in MF activation	Anti; Pro
Teicoplanin	Decrease chemotaxis; lowering pro-inflammatory markers as CRP and IL-6	Anti
Tenofovir	Stimulate secretion of IL-1beta, IL-10 and TNF-alpha from MF; activation of MIP-1alpha in MF and lymphocytes	Anti; Pro
Teriflumonide	Inhibits DHODH, reduced lymphocyte proliferation	Suppressive
Thapsigargin	Suppress T cell proliferation; Suppress Th1 and Th17 differentiation	Implied suppressive; Anti
Thymalfasin	Promote T cell differentiation and maturation; increased CD4+ and CD8+ T cells	Pro
Tilorone	Induce interferon production; activate NK cells and T lymphocytes	Pro
Topotecan	Anti-TNF activity	Anti
Toremifene	Increased proliferation and cytotoxicity of CD8+ T cells; Increased Treg polarization	Stimulatory
Trametinib	Transient inhibition T cell proliferation of cytokine and immunomodulatory gene	Implied suppressive
Umifenovir	Inducing interferon and MF activation; stimulate phagocytosis	Stimulatory
Valproic acid	Inhibits production of pro-inflammatory cytokines as TNF-alpha and IL-6; inhibits NF-kB; Blocks migration of MF; triggers apoptosis in CD8+ T lymphocytes	Anti
Vemurafenib	Increase in immune stimulatory cytokine levels; decrease in immunosuppressive cytokine levels	Pro
Verapamil	Inhibits lymphocyte responses, generation of cytotoxic T cells and NK cell activity	Implied suppressive
Zidovudine	Suppression of antigen derived T cell proliferation	Suppressive

S.3.3 BSA scoring system

Table S.3.3: Results from the six-component BSA-scoring system. Designated are the virus abbreviation, virus family, BC group, diseased system, and case fatality rate in %. Furthermore, BSA name, BSA target, developmental status, route of administration and immunomodulatory properties are specified, together with the BSA scores.

											BSA Scores						
Virus	Family	Group	Diseased system	CFR %	Name	Drug target	Target virus	Dev. status	RoA	Immunomod	SAR	Phyl	TR	DDS	RoA	IP	Total
MARV	Filoviridae	(-)ssRNA	Multiple	50	Galidesivir	Viral RNA pol	MARV	Clinical trials	Intravenous	N.a.	1	1	1	0,75	1	1	5,75
					Favipiravir	Viral RNA pol	MARV	Animal studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
					Remdesivir	Viral RNA pol	MARV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Tilorone	Human (multip	MARV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Amiloride	Human ion cha	MARV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Apilimod	Human PTK	MARV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Amodiaquine	Human HNMT	EBOV	Clinical trials	Peroral	No	0	0,5	0	0	1	1	2,5
					Amiodarone	Human (multip	EBOV	In vitro studies	Intravenous	N.a.	0	0,5	0	0	1	1	2,5
					Sunitinib	Human PTK	EBOV	Clinical trials	Peroral	Yes	0	0,5	1	0	1	0	2,5
					IFN-b	Human IFNAR	EBOV	Clinical trials	Subcutaneous	Yes	0	0,5	1	0	0	0	1,5
					IFN-g	Human IFNGR	EBOV	In vitro studies	Subcutaneous	Yes	0	0,5	1	0	0	0	1,5
					ABMA	Human GTPase	EBOV	In vitro studies	Subcutaneous	N.a.	0	0,5	0	0	0	1	1,5
					Artesunate	Human (multip	EBOV	Clinical trials	Iintravenous	Yes	0	0,5	0	0	1	0	1,5
					Azithromycin	Human (multip	EBOV	Clinical trials	Peroral	Yes	0	0,5	0	0	1	0	1,5
					Lovastatin	Human HMGC	EBOV	In vitro studies	Peroral	Yes	0	0,5	0	0	1	0	1,5
					Merimepodib	Human IMPDH	EBOV	In vitro studies	Peroral	Yes	0	0,5	0	0	1	0	1,5
RAVV	Filoviridae	(-)ssRNA	Multiple	24	Galidesivir	Viral RNA pol	RAVV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Favipiravir	Viral RNA pol	MARV	Animal studies	Peroral	N.a.	0,5	0,5	1	0	1	1	4
					Remdesivir	Viral RNA pol	MARV	In vitro studies	Intravenous	N.a.	0,5	0,5	1	0	1	1	4
					Tilorone	Human (multip	MARV	Approved	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Amiloride	Human ion cha	MARV	In vitro studies	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Apilimod	Human PTK	MARV	In vitro studies	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Amodiaquine	Human HNMT	EBOV	Clinical trials	Peroral	No	0	0,5	0	0	1	1	2,5
					IFN-b	Human IFNAR	EBOV	Clinical trials	Subcutaneous	Yes	0	0,5	1	0	0	0	1,5
					IFN-g	Human IFNGR	EBOV	In vitro studies	Subcutaneous	Yes	0	0,5	1	0	0	0	1,5
					ABMA	Human GTPase	EBOV	In vitro studies	Subcutaneous	N.a.	0	0,5	0	0	0	1	1,5
					Amiodarone	Human (multip	EBOV	In vitro studies	Intravenous	N.a.	0	0,5	0	0	1	1	2,5
					Sunitinib	Human PTK	EBOV	Clinical trials	Peroral	Yes	0	0,5	0	0	1	0	1,5
					Artesunate	Human (multip	EBOV	Clinical trials	Iintravenous	Yes	0	0,5	0	0	1	0	1,5
					Azithromycin	Human (multip	EBOV	Clinical trials	Peroral	Yes	0	0,5	0	0	1	0	1,5
					Lovastatin	Human HMGC	EBOV	In vitro studies	Peroral	Yes	0	0,5	0	0	1	0	1,5
					Merimepodib	Human IMPDH	EBOV	In vitro studies	Peroral	Yes	0	0,5	0	0	1	0	1,5
LUJV	Arenaviridae	(-)ssRNA	Respiratory, digestive	80	AVN-944	Human IMPDH	LUJV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
			and excretory		Benztropine	Human CHRM	LUJV	In vitro studies	Peroral, Intrar	N.a.	1	1	1	0,25	1	1	5,25
					Favipiravir	Viral RNA pol	LUJV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Raloxifene	Human (multip	LUJV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Amiodarone	Human (multip	LUJV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Ribavirin	Viral RNA pol	LUJV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Brequinar	Human DHODH	LUJV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Mycophenolic acid	Human IMPDH	LUJV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Niclosamide	Human (multip	LUJV	In vitro studies	Peroral, Inhala	Yes	1	1	1	0,25	1	0	4,25
					Obatoclax	Human MCL1	LUJV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Tamoxifen	Human (multip	LUJV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Apilimod	Human PTK	LUJV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Toremifene	Human ER	LUJV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Merimepodib	Human IMPDH	LASV	In vitro studies	Peroral	Yes	0,5	0,75	1	0	1	0	3,25
JUNV	Arenaviridae	(-)ssRNA	Vascular, neurological	25	Favipiravir	Viral RNA pol	JUNV	Animal studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
			and immune system		Remdesivir	Viral RNA pol	JUNV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Ribavirin	Viral RNA pol	JUNV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Caffeine	Viral RNA pol	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Merimepodib	Human IMPDH	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Sunitinib	Human PTK	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Teriflunomide	Human DHODH	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Umifenovir	Human (multip	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Sertraline	Human serotor	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Amantadine	Viral ion chann	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Leflunomide	Human DHODH	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Mycophenolic acid	Human IMPDH	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Obatoclax	Human MCL1	JUNV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Amiloride	Human ion cha	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Brequinar	Human DHODH	JUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	JUNV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					IFN-b	Human IFNAR	JUNV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					IFN-g	Human IFNGR	JUNV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
LASV	Arenaviridae	(-)ssRNA	Respiratory, digestive	13	Favipiravir	Viral RNA pol	LASV	Animal studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
			and excretory		Amodiaquine	Human HNMT	LASV	In vitro studies	Peroral	No	1	1	1	0,25	1	1	5,25
					Tyrphostin AG1478	Human PTK	LASV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Ribavirin	Viral RNA pol	LASV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Silvestrol	Human EIF4A	LASV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Amiloride	Human ion cha	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Sertraline	Human serotor	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Umifenovir	Human (multip	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					CR-31-B (–)	Human EIF4A	LASV	In vitro studies	Intraperitonea	No	1	1	1	0,25	0	1	4,25
					Merimepodib	Human IMPDH	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Mycophenolic acid	Human IMPDH	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Remdesivir	Viral RNA pol	LASV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	0	1	4,25
					Umifenovir	Human (multip	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Amantadine	Viral ion chann	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Apilimod	Human PTK	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Genistein	Human PTK	LASV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Niclosamide	Human (multip	LASV	In vitro studies	Peroral, Inhala	Yes	1	1	1	0,25	1	0	4,25
					Obatoclax	Human MCL1	LASV	In vitro studies	Intravenous	Yes	1	1	1	0,25	0	0	3,25

EBOV	Filoviridae	(-)ssRNA	Multiple	66	Amodiaquine	Human HNMT	EBOV	Clinical trials	Peroral	N.a.	1	1	1	0,75	1	1	5,75
					Favipiravir	Viral RNA pol	EBOV	Clinical trials	Peroral	N.a.	1	1	1	0,75	1	1	5,75
					Amiodarone	Human (multip	EBOV	Clinical trials	Intravenous	N.a.	1	1	1	0,75	1	1	5,75
					Galidesivir	Viral RNA pol	EBOV	Clinical trials	Intravenous	N.a.	1	1	1	0,75	1	1	5,75
					Remdesivir	Viral RNA pol	EBOV	Clinical trials	Intravenous	N.a.	1	1	1	0,75	1	1	5,75
					N4-Hydroxycytidin	Viral RNA pol	EBOV	Animal studies	Subcutaneous	N.a.	1	1	1	0,5	1	1	5,5
					Clomiphene	Human ER	EBOV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Digitoxin	Human ion trar	EBOV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Tyrphostin AG1478	Human PTK	EBOV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					ABMA	Human GTPase	EBOV	In vitro studies	Subcutaneous	N.a.	1	1	1	0,25	1	1	5,25
					DABMA	Human GTPase	EBOV	In vitro studies	N.a.	N.a.	1	1	1	0,25	1	1	5,25
					S416	Human DHODH	EBOV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					Tilorone	Human (multip	EBOV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Artesunate	Human (multip	EBOV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					IFN-b	Human IFNAR	EBOV	In vitro studies	Subcutaneous	Yes	1	1	1	0,75	1	0	4,75
					Azithromycin	Human (multip	EBOV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Erlotinib	Human PTK	EBOV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Sunitinib	Human PTK	EBOV	Clinical trials	Intravenous	Yes	1	1	1	0,75	1	0	4,75
					Tamoxifen	Human (multip	EBOV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Chloroquine	Human (multip	EBOV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Toremifene	Human ER	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Sertraline	Human serotor	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Merimepodib	Human IMPDH	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Fluvastatin	Human HMGC	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					25HC	Human membr	EBOV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Genistein	Human PTK	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Lamivudine	Viral RNA pol	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Tetrandrine	Human ion cha	EBOV	Animal studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Umifenovir	Viral RNA pol	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Verapamil	Human ion cha	EBOV	Animal studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Zidovudine	Viral RNA pol	EBOV	In vitro studies	Peroral, Intrav	Yes	1	1	1	0,25	1	0	4,25
					Amiloride	Human ion cha	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Apilimod	Human PTK	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Clomipramine	Viral glycoprot	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-g	Human IFNGR	EBOV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Nafamostat	Human protea	EBOV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Quinacrine	Viral glycoprot	EBOV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	LASV	Clinical trials	Peroral	Yes	0,5	0,25	1	0	1	0	2,75
ANDV	Hantaviridae	(-)ssRNA	Respiratory	23	Favipiravir	Viral RNA pol	ANDV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
			and cardiovascular		Vandetanib	Human PTK	ANDV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Baloxavir	Viral endonucl	HTNV	In vitro studies	Peroral	N.a.	0	0,75	1	0	1	1	3,75
HTNV	Hantaviridae	(-)ssRNA	Multiple	7	Baloxavir	Viral endonucl	HTNV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Favipiravir	Viral RNA pol	HTNV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Zidovudine	Viral RNA pol	HTNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Amantadine	Viral ion chann	HTNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Regorafenib	Human PTK	HTNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Sorafenib	Human PTK	HTNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	HTNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
SNV	Hantaviridae	(-)ssRNA	Respiratory	50	Favipiravir	Viral RNA pol	SNV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
			and cardiovascular		Ribavirin	Viral RNA pol	SNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Baloxavir	Viral endonucl	HTNV	In vitro studies	Peroral	N.a.	0	1	1	0	1	1	4
LACV	Peribunyaviridae	(-)ssRNA	Multiple	1	Baloxavir	Viral endonucl	LACV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Favipiravir	Viral RNA pol	SNV	In vitro studies	Peroral	N.a.	0	0,25	1	0	1	1	3,25
BUNV	Peribunyaviridae	(-)ssRNA	Multiple	0	Saliphenylhalamid	Human vATPas	BUNV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					Navitoclax	Human BCLXL	BUNV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Favipiravir	Viral RNA pol	SNV	In vitro studies	Peroral	N.a.	0	0,25	1	0	1	1	3,25
RVFV	Phenuiviridae	(-)ssRNA	Multiple	1	Favipiravir	Viral RNA pol	RVFV	Animal studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
					Selenazofurin	Viral RNA pol	RVFV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					Oritavancin	Human cathep	RVFV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Galidesivir	Viral RNA pol	RVFV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Ribavirin	Viral RNA pol	RVFV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Sirolimus	Human PTK	RVFV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Monensin	Unknown	RVFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Bortezomib	Human protea	RVFV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Emetine	Human riboson	RVFV	In vitro studies	Intramuscular	Yes	1	1	1	0,25	1	0	4,25
					Cyclosporine	Human CYPs	RVFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Minocycline	Human MIF	RVFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ritonavir	Unknown	RVFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Suramin	Human (multip	RVFV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Azacitidine	Viral RNA pol	RVFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ezetimibe	Human cholest	RVFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
SFTSV	Phenuiviridae	(-)ssRNA	Multiple	21	Favipiravir	Viral RNA pol	SFTSV	Animal studies	Peroral	N.a.	1	1	1	0,75	1	1	5,75
					Hexachlorophene	Unknown	SFTSV	In vitro studies	Skin, Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Baloxavir	Viral endonucl	SFTSV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Nifedipine	Human ion cha	SFTSV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Regorafenib	Human PTK	SFTSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Bortezomib	Human protea	SFTSV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Fludarabine	Viral RNA pol	SFTSV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	SFTSV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					IFN-b	Human IFNAR	SFTSV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					IFN-g	Human IFNGR	SFTSV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	SFTSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
PTV	Phenuiviridae	(-)ssRNA	Multiple	n.a.	Taribavirin	Viral RNA pol	PTV	Animal studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	PTV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Favipiravir	Viral RNA pol	RVFV	Animal studies	Peroral	N.a.	0	1	1	0	1	1	4
					Baloxavir	Viral endonucl	SFTSV	In vitro studies	Peroral	N.a.	0	1	1	0	1	1	4
CCHFV	Nairoviridae	(-)ssRNA	Multiple	25	Favipiravir	Viral RNA pol	CCHFV	Animal studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
					CR-31-B (–)	Human EIF4A	CCHFV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					Ribavirin	Viral RNA pol	CCHFV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Chloroquine	Human (multip	CCHFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Chlorpromazine	Human (multip	CCHFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Silvestrol	Human EIF4A	CCHFV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Taribavirin	Viral RNA pol	CCHFV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	CCHFV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					IFN-l	Human IFNAR	CCHFV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Baloxavir	Viral endonucl	SFTSV	In vitro studies	Peroral	N.a.	0	0,5	1	0	1	1	3,5

HDV	Kolmioviridae	(-)ssRNA	Digestive and excretor	11	Bulevirtide	Human NTCP	HDV	Approved	Subcutaneous	N.a.	1	1	1	1	1	1	6
					Adefovir	HBV DNA pol	HDV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Ezetimibe	Human cholest	HDV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					IFN-a	Human IFNAR	HDV	Clinical trials	Subcutaneous	Yes	1	1	1	0,75	1	0	4,75
					Lamivudine	Human RNA po	HDV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Ritonavir	Unknown	HDV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Ribavirin	Human RNA po	HDV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Taribavirin	Viral RNA pol	HDV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Etanercept	Human TNF	HDV	Animal studies	Subcutaneous	Yes	1	1	1	0,5	1	0	4,5
					Irbesartan	Human ATR	HDV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Sirolimus	Human PTK	HDV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Suramin	Human (multip	HDV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
FLUAV	Orthomyxoviridae	(-)ssRNA	Respiratory system	0,003	Baloxavir	Viral endonucl	FLUAV	Approved	Peroral	N.a.	1	1	1	1	1	1	6
					Favipiravir	Viral RNA pol	FLUAV	Approved	Peroral	N.a.	1	1	1	1	1	1	6
					Oseltamivir	Viral neuramin	FLUAV	Approved	Peroral	N.a.	1	1	1	1	1	1	6
					Triazavirin	Viral RNA pol	FLUAV	Approved	Peroral	N.a.	1	1	1	1	1	1	6
					Zanamivir	Unknown	FLUAV	Approved	Inhalation	N.a.	1	1	1	1	1	1	6
					Dyphillin	Human vATPas	FLUAV	Animal studies	Intravenous	N.a.	1	1	1	0,5	1	1	5,5
					Kasugamycin	Unknown	FLUAV	Animal studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
					Molnupiravir	Viral RNA pol	FLUAV	Animal studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
					Saliphenylhalamid	Human vATPas	FLUAV	Animal studies	Intraperitonea	N.a.	1	1	1	0,5	1	1	5,5
					Camostat	Human protea	FLUAV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Dapivirine	Unknown	FLUAV	In vitro studies	Vaginal	N.a.	1	1	1	0,25	1	1	5,25
					Esomeprazole	Human vATPas	FLUAV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Foscarnet	Viral RNA pol	FLUAV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					S416	Human DHODH	FLUAV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					Selenazofurin	Viral RNA pol	FLUAV	Animal studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					Amantadine	Viral ion chann	FLUAV	Approved	Peroral, inhala	Yes	1	1	1	1	1	0	5
					Umifenovir	Human (multip	FLUAV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Acetylsalicylic acid	Human COX	FLUAV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Azithromycin	Unknown	FLUAV	Clinical trials	Peroral	Yes	1	1	1	1	1	0	5
					Ingavirin	Unknown	FLUAV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Rimantadine	Viral ion chann	FLUAV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Chloroquine	Human (multip	FLUAV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Clarithromycin	Human ion cha	FLUAV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Inosine	Viral RNA pol	FLUAV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					IFN-a	Human IFNAR	FLUAV	Clinical trials	Peroral, Intrav	Yes	1	1	1	0,75	1	0	4,75
					IFN-b	Human IFNAR	FLUAV	Clinical trials	Subcutaneous	Yes	1	1	1	0,75	1	0	4,75
					Ribavirin	Viral RNA pol	FLUAV	Clinical trials	Peroral, inhala	Yes	1	1	1	0,75	1	0	4,75
					Sirolimus	Human PTK	FLUAV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Adefovir	Viral RNA pol	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Amitriptyline	Human ion cha	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Diltiazem	Human ion cha	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Eptifibatide	Human integrir	FLUAV	Animal studies	Intravenous	Yes	1	1	1	0,5	1	0	4,5
					Etanercept	Human TNF	FLUAV	Animal studies	Subcutaneous	Yes	1	1	1	0,5	1	0	4,5
					Flavopiridol	Human PTK	FLUAV	Animal studies	Intravenous	Yes	1	1	1	0,5	1	0	4,5
					Genistein	Human PTK	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Itraconazole	Unknown	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Metformin	Human PTK	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Monensin	Unknown	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Navitoclax	Human BCLXL	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Resveratrol	Human multipl	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Salinomycin	Viral ion chann	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Verdinexor	Human exporti	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Eucalyptol	Unknown	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Fenofibrate	Human PPAR	FLUAV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					PUL-042	Human TLR	FLUAV	Animal studies	Inhalation	Yes	1	1	1	0,5	1	0	4,5
					Caffeine	Viral RNA pol	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Nafamostat	Human protea	FLUAV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Obatoclax	Human MCL1	FLUAV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Saquinavir	Unknown	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Azacitidine	Viral RNA pol	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Berberine	Unknown	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Betulinic Acid	Unknown	FLUAV	In vitro studies	Intraperitonea	Yes	1	1	1	0,25	1	0	4,25
					Bortezomib	Human protea	FLUAV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Brequinar	Human DHODH	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Camptothecin	Human topoisc	FLUAV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Cyclosporine	Human CYPs	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Emodin	Human (multip	FLUAV	In vitro studies	Peroral, Intrav	Yes	1	1	1	0,25	1	0	4,25
					Fluvastatin	Human HMGC	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Gemcitabine	Viral RNA pol	FLUAV	In vitro studies	Intravenous, i	Yes	1	1	1	0,25	1	0	4,25
					Glycyrrhizin	Human TNF	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-l	Human IFNLR	FLUAV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Luteolin	Human COPI	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Memantine	Human ion cha	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Mycophenolic acid	Human IMPDH	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Nelfinavir	Unknown	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Nitazoxanide	Human pyruva	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Niclosamide	Human (multip	FLUAV	In vitro studies	Peroral, inhala	Yes	1	1	1	0,25	1	0	4,25
					Pentosan polysulfa	Human FGF	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Podofilox	Human topoisc	FLUAV	In vitro studies	Topical	N.a.	1	1	1	0,25	1	0	4,25
					Quercetin	Unknown	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Quinine	Viral glycoprot	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Regorafenib	Human PTK	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Silvestrol	Human EIF4A	FLUAV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Simvastatin	Human HMGC	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Sorafenib	Human PTK	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Taribavirin	Viral RNA pol	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Teicoplanin	Human CTS	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Teriflunomide	Human DHODH	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Thapsigargin	Human ion cha	FLUAV	In vitro studies	Intraperitonea	Yes	1	1	1	0,25	1	0	4,25
					Topotecan	Human topoisc	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Trametinib	Human ER	FLUAV	In vitro studies	Peroral, intrav	Yes	1	1	1	0,25	1	0	4,25
					Vemurafenib	Human (multip	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Verapamil	Human ion cha	FLUAV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Emetine	Human ribosor	FLUAV	In vitro studies	Intramuscular	Yes	1	1	1	0,25	1	0	4,25
					Lovastatin	Human HMGC	RSV	In vitro studies	Peroral	Yes	0,5	0,25	0	0	1	0	1,75

HENV	Paramyxoviridae	(-)ssRNA	Multiple	60	Gossypol	Human import	HENV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ivermectin	Human import	HENV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
NiV	Paramyxoviridae	(-)ssRNA	Multiple	61	Remdesivir	Viral RNA pol	NiV	Animal studies	Intravenous	N.a.	1	1	1	0,5	1	1	5,5
					Favipiravir	Viral RNA pol	NiV	In vitro studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
					25HC	Human membr	NiV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Bortezomib	Human protea	NiV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
HPIV	Paramyxoviridae	(-)ssRNA	Respiratory system	1	GS-441524	Viral RNA pol	HPIV	In vitro studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
					Zanamivir	Unknown	HPIV	In vitro studies	Inhalation	N.a.	1	1	1	0,25	1	1	5,25
					AVN-944	Human IMPDH	HPIV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Ingavirin	Unknown	HPIV	In vitro studies	Peroral	Yes	1	1	1	1	1	0	5
					Inosine	Viral RNA pol	HPIV	In vitro studies	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Suramin	Human (multip	HPIV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Glycyrrhizin	Human TNF	HPIV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-b	Human IFNAR	HPIV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Lovastatin	Human HMGC	HPIV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Merimepodib	Human IMPDH	HPIV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Quercetin	Unknown	HPIV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	HPIV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
MeV	Paramyxoviridae	(-)ssRNA	Respiratory system	1	Inosine	Viral RNA pol	MeV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Amiloride	Human ion cha	MeV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Navitoclax	Human BCLXL	MeV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Nitazoxanide	Human pyruva	MeV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	MeV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
HMPV	Pneumoviridae	(-)ssRNA	Respiratory system	n.a.	Oritavancin	Unknown	HMPV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Remdesivir	Viral RNA pol	HMPV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Ribavirin	Viral RNA pol	HMPV	Animal studies	Intravenous	Yes	1	1	1	0,5	1	0	4,5
					Itraconazole	Unknown	HMPV	In vitro studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Lopinavir	Unknown	HMPV	In vitro studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Monensin	Unknown	HMPV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Azacitidine	Viral RNA pol	HMPV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Emetine	Human ribosor	HMPV	In vitro studies	Intramuscular	Yes	1	1	1	0,25	1	0	4,25
					Ingavirin	Unknown	HMPV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Nitazoxanide	Human pyruva	HMPV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Obatoclax	Human MCL1	HMPV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
RSV	Pneumoviridae	(-)ssRNA	Respiratory system	n.a.	4'-Fluorouridine	Viral RNA pol	RSV	Animal studies	Peroral	N.a.	1	1	1	0,5	1	1	5,5
					AVN-944	Human IMPDH	RSV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Docosanol	Viral glycopro	RSV	In vitro studies	Topical	N.a.	1	1	1	0,25	1	1	5,25
					Remdesivir	Viral RNA pol	RSV	In vitro studies	Intravenous	N.a.	1	1	1	0,25	1	1	5,25
					Ribavirin	Viral RNA pol	RSV	Approved	Intravenous	Yes	1	1	1	1	1	0	5
					Azithromycin	Unknown	RSV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Clarithromycin	Human ion cha	RSV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Resveratrol	Human multipl	RSV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Fenretinide	Human RAR	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Monensin	Unknown	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Salinomycin	Unknown	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Sunitinib	Human PTK	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Thapsigargin	Human ion cha	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Verdinexor	Human exporti	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Berberine	Unknown	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Bortezomib	Human protea	RSV	Animal studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	RSV	Clinical trials	Peroral, Intrav	Yes	1	1	1	0,25	1	0	4,25
					Lovastatin	Human HMGC	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Merimepodib	Human IMPDH	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Mycophenolic acid	Human IMPDH	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Niclosamide	Human (multip	RSV	In vitro studies	Peroral, Inhala	Yes	1	1	1	0,25	1	0	4,25
					Nitazoxanide	Human pyruva	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Quercetin	Unknown	RSV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
CPXV	Poxviridae	dsDNA	Skin, mucosal	1	Brincidofovir	Viral DNA pol;V	VARV	Clinical trials	Peroral	No	1	0	1	0,75	1	1	4,75
			and systemic		Acyclovir	Viral DNA pol	HSV-2	n.a.	Peroral; Intrav	No	0	0	1	0	1	1	3
					Brivudine	Viral DNA pol	VZV	n.a.	Peroral; Ocula	No	0	0	1	0	1	1	3
					Cidofovir	Viral DNA pol;V	CMV	n.a.	Intravenous	No	0	0	1	0	1	1	3
					Didanosine	Viral DNA pol;V	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Efavirenz	Viral RNA pol;V	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Famciclovir	Viral DNA pol	VZV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Favipiravir	Viral RNA pol	FLUAV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Foscarnet	Viral DNA pol;V	CMV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Ganciclovir	Viral DNA pol;V	CMV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Idoxuridine	Viral DNA pol	HSV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Remdesivir	Viral RNA pol	SARS-CoV-2	n.a.	Peroral	No	0	0	1	0	1	1	3
					Sofosbuvir	Viral RNA pol	HCV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Stavudine	Viral DNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Telbivudine	Viral DNA pol;	HBV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Trifluridine	Viral DNA pol	HSV-2	n.a.	Peroral	No	0	0	1	0	1	1	3
					Vidarabine	Viral DNA pol;	VZV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Valacyclovir	Viral DNA pol;	HSV-2	n.a.	Peroral	No	0	0	1	0	1	1	3
					Valganciclovir	Viral DNA pol	CMV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Zalcitabine	Viral DNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Taribavirin	Viral RNA pol	HCV	n.a.	Peroral	Yes	0	0	1	0	1	0	2
					Dapivirine	Unknown;Viral	HIV-1	n.a.	Suppository	No	0	0	1	0	0	1	2
					Penciclovir	Viral DNA pol	HSV-2	n.a.	Peroral	No	0	0	1	0	0	1	2
					Ribavirin	Viral RNA pol	HCV	n.a.	Peroral	Yes	0	0	1	0	1	0	2
					Rilpivirine	Viral RNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	0	1	2
					Tenofovir	Viral DNA pol;	HSV-2	n.a.	Peroral	Yes	0	0	1	0	1	0	2
					Zidovudine	Viral DNA pol;	HIV-1	n.a.	Peroral	Yes	0	0	1	0	1	0	2
VARV	Poxviridae	dsDNA	Skin, mucosal	30	Brincidofovir	Viral DNA pol;V	VARV	Clinical trials	Peroral	No	1	0	1	0,75	1	1	4,75
			and systemic		Acyclovir	Viral DNA pol	HSV-2	n.a.	Peroral; Intrav	No	0	0	1	0	1	1	3
					Brivudine	Viral DNA pol	VZV	n.a.	Peroral; Ocula	No	0	0	1	0	1	1	3
					Cidofovir	Viral DNA pol;V	CMV	n.a.	Intravenous	No	0	0	1	0	1	1	3
					Didanosine	Viral DNA pol;V	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Efavirenz	Viral RNA pol;V	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Famciclovir	Viral DNA pol	VZV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Favipiravir	Viral RNA pol	FLUAV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Foscarnet	Viral DNA pol;V	CMV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Ganciclovir	Viral DNA pol;V	CMV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Idoxuridine	Viral DNA pol	HSV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Remdesivir	Viral RNA pol	SARS-CoV-2	n.a.	Peroral	No	0	0	1	0	1	1	3
					Sofosbuvir	Viral RNA pol	HCV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Stavudine	Viral DNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Telbivudine	Viral DNA pol;	HBV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Trifluridine	Viral DNA pol	HSV-2	n.a.	Peroral	No	0	0	1	0	1	1	3
					Valacyclovir	Viral DNA pol;	HSV-2	n.a.	Peroral	No	0	0	1	0	1	1	3
					Valganciclovir	Viral DNA pol	CMV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Vidarabine	Viral DNA pol;	VZV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Zalcitabine	Viral DNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Taribavirin	Viral RNA pol	HCV	n.a.	Peroral	Yes	0	0	1	0	1	0	2
					Dapivirine	Unknown;Viral	HIV-1	n.a.	Suppository	No	0	0	1	0	0	1	2
					Penciclovir	Viral DNA pol	HSV-2	n.a.	Peroral	No	0	0	1	0	0	1	2
					Ribavirin	Viral RNA pol	HCV	n.a.	Peroral	Yes	0	0	1	0	1	0	2
					Rilpivirine	Viral RNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	0	1	2
					Tenofovir	Viral DNA pol;	HSV-2	n.a.	Peroral	Yes	0	0	1	0	1	0	2
					Zidovudine	Viral DNA pol;	HIV-1	n.a.	Peroral	Yes	0	0	1	0	1	0	2

VZV	Herpesviridae	dsDNA	Skin and systemic	0.1	Brivudine	Viral DNA pol	VZV	Approved	Peroral; Ocula	No	1	1	1	1	1	1	6
					Famciclovir	Viral DNA pol	VZV	n.a.	Peroral	No	1	1	1	1	1	1	6
					Vidarabine	Viral DNA pol;	VZV	Approved	Peroral	No	1	1	1	1	1	1	6
					Acyclovir	Viral DNA pol	HSV-2	Approved	Peroral; Intrav	No	0,5	1	1	0	1	1	4,5
					Foscarnet	Viral DNA pol;V	CMV	Approved	Peroral	No	0,5	1	1	0	1	1	4,5
					Valacyclovir	Viral DNA pol;	HSV-2	Approved	Peroral	No	0,5	1	1	0	1	1	4,5
					Cidofovir	Viral DNA pol;V	CMV	Approved	Intravenous	No	0,5	0,5	1	0	1	1	4
					Ganciclovir	Viral DNA pol;V	CMV	Approved	Peroral	No	0,5	0,5	1	0	1	1	4
					Idoxuridine	Viral DNA pol	HSV-1	Approved	Peroral	No	0,5	0,5	1	0	1	1	4
					Trifluridine	Viral DNA pol	HSV-2	Approved	Peroral	No	0,5	0,5	1	0	1	1	4
					Valganciclovir	Viral DNA pol	CMV	Approved	Peroral	No	0,5	0,5	1	0	1	1	4
					Penciclovir	Viral DNA pol	HSV-2	Approved	Peroral	No	0,5	0,5	1	0	0	1	3
					Brincidofovir	Viral DNA pol;V	VARV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Didanosine	Viral DNA pol;V	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Efavirenz	Viral RNA pol;V	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Favipiravir	Viral RNA pol	FLUAV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Remdesivir	Viral RNA pol	SARS-CoV-2	n.a.	Peroral	No	0	0	1	0	1	1	3
					Sofosbuvir	Viral RNA pol	HCV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Stavudine	Viral DNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Telbivudine	Viral DNA pol;	HBV	n.a.	Peroral	No	0	0	1	0	1	1	3
					Zalcitabine	Viral DNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	1	1	3
					Tenofovir	Viral DNA pol;	HSV-2	Approved	Peroral	Yes	0,5	0	1	0	1	0	2,5
					Taribavirin	Viral RNA pol	HCV	n.a.	Peroral	Yes	0	0	1	0	1	0	2
					Dapivirine	Unknown;Viral	HIV-1	n.a.	Suppository	No	0	0	1	0	0	1	2
					Ribavirin	Viral RNA pol	HCV	n.a.	Peroral	Yes	0	0	1	0	1	0	2
					Rilpivirine	Viral RNA pol;	HIV-1	n.a.	Peroral	No	0	0	1	0	0	1	2
					Zidovudine	Viral DNA pol;	HIV-1	n.a.	Peroral	Yes	0	0	1	0	1	0	2
HIV-1	Retroviridae	ssRNA-RT	Multiple	47	Amprenavir	Viral protease	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Atazanavir	Viral protease	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Darunavir	Viral protease	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Didanosine	Viral RT	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Efavirenz	Viral RT	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Emtricitabine	Viral RT	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Etravirine	Viral RT	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Indinavir	Viral protease	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Lamivudine	Viral RT	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Rilpivirine	Viral RT	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Stavudine	Viral RT	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Tipranavir	Viral protease	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Zalcitabine	Viral RT	HIV-1	Approved	Peroral	No	1	1	1	1	1	1	6
					Dapivirine	Viral RT	HIV-1	Approved	Suppository	No	1	1	1	1	1	1	6
					Telbivudine	Viral RT	HIV-1	Clinical trials	Peroral	No	1	1	1	0,75	1	1	5,75
					Nelfinavir	Viral protease	HIV-1	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Lopinavir	Viral protease	HIV-1	Approved	Peroral	No	1	1	1	1	1	0	5
					Ritoanvir	Viral protease	HIV-1	Approved	Peroral	No	1	1	1	1	1	0	5
					Saquinavir	Viral protease	HIV-1	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Tenofovir	Viral RT	HIV-1	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Zidovudine	Viral RT	HIV-1	Approved	Peroral; Intrav	Yes	1	1	1	1	1	0	5
					Maraviroc	Host CXCR4	HIV-1	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Adefovir	Viral RT	HIV-1	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Racivir	Viral RT	HIV-1	Clinical trials	Peroral	No	0,5	1	1	0	1	1	4,5
					Elvucitabine	Viral RT	HIV-1	Clinical trials	Peroral	No	0,5	1	1	0	1	1	4,5
					Enoxacin	Human topoisc	HIV-1	In vitro studies	Peroral	No	0,5	1	1	0	1	1	4,5
					Raloxifene	Human (Multip	HIV-1	In vitro studies	Peroral	No	0,5	1	1	0	1	1	4,5
					Lobucavir	Viral RT	HIV-1	Clinical trials	Peroral	No	0	1	1	0	1	1	4
					Docosanol	Viral glycoprot	HIV-1	In vitro studies	Topical	No	0	1	1	0	1	1	4
					Alisporivir	Human CYPs	HIV-1	In vitro studies	Peroral	No	0	1	1	0	1	1	4
					Vesatolimod	Human TLR7	HIV-1	In vitro studies	Peroral	No	0	1	1	0	1	1	4
					Tenatoprazole	Human vesicul	HIV-1	Clinical trials	Peroral	No	0	1	1	0	1	1	4
					Dyphylline	Human vATPas	HIV-1	In vitro studies	Peroral	No	0	1	1	0	1	1	4
					Indomethacin	Human COX	HIV-1	In vitro studies	Peroral	No	0	1	1	0	1	1	4
					Ilaprazole	Human vesicul	HIV-1	In vitro studies	Peroral	No	0	1	1	0	1	1	4
					Calanolide A	Viral RT	HIV-1	Approved	Preoral	No	0	1	1	0	1	1	4
					Lapachone	Viral transcript	HIV-1	In vitro studies	Preoral; Intrav	No	0	1	1	0	1	1	4
					Ementine	Human riboson	HIV-1	In vitro studies	Preoral; Subcu	No	0	1	1	0	1	1	4
					Seliciclib	Human PTK	HIV-1	In vitro studies	Preoral	No	0	1	1	0	1	1	4
					Famciclovir	Viral DNA pol	HBV	Clinical trials	Peroral	No	0,5	0,25	1	0	1	1	3,75
					Fiacitabine	Viral RT	HBV	Animal models	Peroral	No	0,5	0,25	1	0	1	1	3,75
					Navitoclax	Human BCL2	HIV-1	In vitro studies	Peroral	Yes	0,5	1	1	0	1	0	3,5
					Gemcitabine	Viral RT	HIV-1	In vitro studies	Intravenous	Yes	0,5	1	1	0	1	0	3,5
					Valacyclovir	Viral RT	HBV	Approved	Peroral	No	0	0,25	1	0	1	1	3,25
					Penciclovir	Viral DNA pol	HBV	In vitro studies	Topical	No	0	0,25	1	0	1	1	3,25
					Irbesartan	Human ATR	HBV	In vitro studies	Peroral	No	0	0,25	1	0	1	1	3,25
					Memantine	Human ion cha	HIV-1	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Nitazoxanide	Human Pyruva	HIV-1	Clinical trials	Peroral	No	0	1	1	0	1	0	3
					Ivermectin	Human import	HIV-1	In vitro studies	Peroral	No	0	1	1	0	1	0	3
					Pentosan polysulfa	Human FGF	HIV-1	In vitro studies	Peroral	No	0	1	1	0	1	0	3
					Cenicriviroc	Host CCR5	HIV-1	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Inosine	Viral RT	HIV-1	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Topotecan	Human topoisc	HIV-1	Clinical trials	Intravenous	Yes	0	1	1	0	1	0	3
					Azacitidine	Viral RT	HIV-1	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Sirolimus	Human PTK	HIV-1	Approved	Peroral	Yes	0	1	1	0	1	0	3
					Azithromycin	Unknown	HIV-1	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Chloroquine	Human (Multip	HIV-1	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Ezetimibe	Human cholest	HIV-1	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Hydroxychloroquir	Human (Multip	HIV-1	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Tamoxifen	Human (Multip	HIV-1	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Brequinar	Human DHODH	HIV-1	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Sunitinib	Human PTK	HIV-1	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Cyclosporine	Human CYPs	HIV-1	Approved	Peroral; Intrav	Yes	0	1	1	0	1	0	3
					Clozapine	Unknown	HIV-1	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Dasatinib	Human PTK	HIV-1	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Lipoic acid	Human lipoyltr	HIV-1	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Trametinib	Human PTK	HIV-1	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Leronlimab	Human CCR5	HIV-1	Clinical trials	Subcutaneous	Yes	0	1	1	0	1	0	3
					IFN-a	Human IFNAR	HIV-1	Clinical trials	Subcutaneous	Yes	0	1	1	0	1	0	3
					IL7	Human CD127	HIV-1	Clinical trials	Subcutaneous	Yes	0	1	1	0	1	0	3
					Thymalfasin	Human (Unkno	HIV-1	Clinical trials	Subcutaneous	Yes	0	1	1	0	1	0	3
					Minocycline	Human MIF	HIV-1	Animal models	Peroral	Yes	0	1	1	0	1	0	3
					Interferon beta	Human IFNAR	HIV-1	In vitro studies	Subcutaneous	Yes	0	1	1	0	1	0	3
					Suramin	Human (Multip	HIV-1	In vitro studies	Intravenous	Yes	0	1	1	0	1	0	3
					Camptothecin	Human topoisc	HIV-1	In vitro studies	Intravenous	Yes	0	1	1	0	1	0	3

					Camptothecin	Human topois	HIV-1	In vitro studies	Intravenous	Yes	0	1	1	0	1	0	3
HIV-2	Retroviridae	ssRNA-RT	Multiple		Lamivudine	Viral RT	HIV-2	Approved	Peroral	No	1	1	1	1	1	1	6
					Emtricitabine	Viral RT	HIV-1	Approved	Peroral	No	1	0,5	1	1	1	1	5,5
					Zalcitabine	Viral RT	HIV-1	Approved	Peroral	No	1	0,5	1	1	1	1	5,5
					Lopinavir	Viral protease	HIV-2	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Tenofovir	Viral RT	HIV-2	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Ritoanvir	Viral protease	HIV-2	Approved	Peroral	No	1	1	1	1	1	0	5
					Adefovir	Viral RT	HIV-1	Clinical trials	Peroral	Yes	1	0,5	1	0,75	1	0	4,25
					Amprenavir	Viral protease	HIV-1	Approved	Peroral	No	0,5	0,5	1	0	1	1	4
					Darunavir	Viral protease	HIV-1	Approved	Peroral	No	0,5	0,5	1	0	1	1	4
					Didanosine	Viral RT	HIV-1	Approved	Peroral	No	0,5	0,5	1	0	1	1	4
					Indinavir	Viral protease	HIV-1	Approved	Peroral	No	0,5	0,5	1	0	1	1	4
					Elvucitabine	Viral RT	HIV-1	Clinical trials	Peroral	No	0,5	0,5	1	0	1	1	4
					Stavudine	Viral RT	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Tipranavir	Viral protease	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Adefovir diproxil	Viral RNA pol	HBV	Approved	Peroral	Yes	0,5	0,5	1	0	1	0	3
					Nelfinavir	Viral protease	HIV-1	Approved	Peroral	Yes	0,5	0,5	1	0	1	0	3
					Cenicriviroc	Host CCR5	HIV-2	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Azacitidine	Viral RT	HIV-2	In vitro studies	Peroral	Yes	0	1	1	0	1	0	3
					Saquinavir	Viral protease	HIV-1	Approved	Peroral	Yes	0,5	0,5	1	0	1	0	3
HTLV-1	Retroviridae	ssRNA-RT	Multiple	N.a.	Amprenavir	Viral protease	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Atazanavir	Viral protease	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Dapivirine	Viral RT	HIV-1	Approved	Suppository	No	0	0,5	1	0	1	1	3,5
					Didanosine	Viral RT	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Efavirenz	Viral RT	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Emtricitabine	Viral RT	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Etravirine	Viral RT	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Indinavir	Viral protease	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Ritoanvir	Viral protease	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Stavudine	Viral RT	HIV-1, HIV-2	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Tipranavir	Viral protease	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Zalcitabine	Viral RT	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Racivir	Viral RT	HIV-1	Clinical trials	Peroral	No	0	0,5	1	0	1	1	3,5
					Lamivudine	Viral RT	HIV-1, HIV-2	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Elvucitabine	Viral RT	HIV-1	Clinical trials	Peroral	No	0	0,5	1	0	1	1	3,5
					Dyphylline	Human vATPas	HIV-1	In vitro studies	Peroral	No	0	0,5	1	0	1	1	3,5
					Darunavir	Viral protease	HIV-1	Approved	Peroral	No	0	0,5	1	0	1	1	3,5
					Calanolide A	Viral RT	HIV-1	Approved	Preoral	No	0	0,5	1	0	1	1	3,5
					Lapachone	Viral transcript	HIV-1	In vitro studies	Preoral; Intrav	No	0	0,5	1	0	1	1	3,5
					Seliciclib	Human PTK	HIV-1	In vitro studies	Preoral	No	0	0,5	1	0	1	1	3,5
					Ementine	Human ribosor	HIV-1	In vitro studies	Preoral; Subcu	No	0	0,5	1	0	1	1	3,5
					Homoharringtonin	Human ribosor	HBV	In vitro studies	Subcutaneous	No	0	0,25	1	0	1	1	3,25
					IFN-b	Human IFNAR	HTLV-1	Animal models	Subcutaneous	Yes	0	1	1	0	1	0	3
					Lopinavir	Viral protease	HIV-1	Approved	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Nelfinavir	Viral protease	HIV-1	Approved	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Saquinavir	Viral protease	HIV-1	Approved	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Tenofovir	Viral RT	HIV-1, HIV-2	Approved	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Zidovudine	Viral RT	HIV-1	Approved	Peroral; Intrav	Yes	0	0,5	1	0	1	0	2,5
					Inosine	Viral RT	HIV-1	Clinical trials	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Topotecan	Human topois	HIV-1	Clinical trials	Intravenous	Yes	0	0,5	1	0	1	0	2,5
					Adefovir	Viral RT	HIV-1	Clinical trials	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Azacitidine	Viral RT	HIV-1, HIV-2	In vitro studies	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Leronlimab	Human CCR5	HIV-1	Clinical trials	Subcutaneous	Yes	0	0,5	1	0	1	0	2,5
					Sirolimus	Human PTK	HIV-1	Approved	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Brequinar	Human DHODH	HIV-1	In vitro studies	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Chloroquine	Human (Multip	HIV-1	Clinical trials	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Gemcitabine	Viral RT	HIV-1	In vitro studies	Intravenous	Yes	0	0,5	1	0	1	0	2,5
					IFN-a	Human IFNAR	HIV-1	Clinical trials	Subcutaneous	Yes	0	0,5	1	0	1	0	2,5
					Tamoxifen	Human (Multip	HIV-1	Clinical trials	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Thymalfasin	Human (Unkno	HIV-1	Clinical trials	Subcutaneous	Yes	0	0,5	1	0	1	0	2,5
					Cyclosporine	Human CYPs	HIV-1	Approved	Peroral; Intrav	Yes	0	0,5	1	0	1	0	2,5
					Raloxifene	Human (Multip	HIV-1	In vitro studies	Peroral	No	0	0,5	0	0	1	1	2,5
					Dasatinib	Human PTK	HIV-1	In vitro studies	Peroral	Yes	0	0,5	1	0	1	0	2,5
					Camptothecin	Human topois	HIV-1	In vitro studies	Intravenous	Yes	0	0,5	1	0	1	0	2,5
					Adefovir diproxil	Viral RNA pol	HBV	Approved	Peroral	Yes	0	0,25	1	0	1	0	2,25
					Bexarotene	Human RAR	HBV	In vitro studies	Peroral	Yes	0	0,25	1	0	1	0	2,25
					IFN-l	Human IFN-λR1	HBV	Clinical trials	Subcutaneous	Yes	0	0,25	1	0	1	0	2,25
					Navitoclax	Human BCL2	HIV-1	In vitro studies	Peroral	Yes	0	0,5	0	0	1	0	1,5
HBV	Hepadaviridae	dsDNA-RT	Liver, ystemic, skin	40	Lamivudine	Viral RT	HBV	Approved	Peroral	No	1	1	1	1	1	1	6
			and cardiovascular		Telbivudine	Viral RT	HBV	Approved	Peroral	No	1	1	1	1	1	1	6
					Valacyclovir	Viral RT	HBV	Approved	Peroral	No	1	1	1	1	1	1	6
					Didanosine	Viral RT	HIV-1	Approved	Peroral	No	1	0,25	1	1	1	1	5,25
					Stavudine	Viral RT	HIV-1	Approved	Peroral	No	1	0,25	1	1	1	1	5,25
					Zalcitabine	Viral RT	HIV-1	Approved	Peroral	No	1	0,25	1	1	1	1	5,25
					IFN-a	Human IFNAR	HBV	Approved	Subcutaneous	Yes	1	1	1	1	1	0	5
					Adefovir diproxil	Viral RNA pol	HBV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Tenofovir	Viral RT	HBV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Adefovir	Viral RT	HBV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					IFN-l	Human IFN-λR1	HBV	Clinical trials	Subcutaneous	Yes	1	1	1	0,75	1	0	4,75
					Famciclovir	Viral DNA pol	HBV	Clinical trials	Peroral	No	0,5	1	1	0	1	1	4,5
					Ganciclovir	Viral DNA poly	HBV	Clinical trials	Peroral; Intrav	No	0,5	1	1	0	1	1	4,5
					Elvucitabine	Viral RT	HBV	Animal models	Peroral	N.a.	0,5	1	1	0	1	1	4,5
					Racivir	Viral RT	HBV	In vitro	Peroral	N.a.	0,5	1	1	0	1	1	4,5
					Lobucavir	Viral RT	HBV	In vitro	Peroral	N.a.	0,5	1	1	0	1	1	4,5
					AVN-944	Human IMPDH	HBV	In vitro	Peroral	No	0	1	1	0	1	1	4
					Nitozoxanide	Human pyruva	HBV	Clinical trials	Peroral	No	0	1	1	0	1	1	4
					Foscarnet	Viral RT	HBV	Animal models	Intravenous	No	0	1	1	0	1	1	4
					Emtricitabine	Viral RT	HBV	Clinical trials	Peroral	N.a.	0	1	1	0	1	1	4
					Fiacitabine	Viral RT	HBV	Animal models	Peroral	N.a.	0	1	1	0	1	1	4
					Homoharringtonin	Human ribosor	HBV	In vitro	Subcutaneous	N.a.	0	1	1	0	1	1	4
					Metformin	Human PTK	HBV	In vitro	Peroral	Yes	0,5	1	1	0	1	0	3,5
					Amantadine	Viral ion chann	HBV	Animal models	Peroral	Yes	0,5	1	1	0	1	0	3,5
					Penciclovir	Viral DNA pol	HBV	In vitro	Topical	No	0,5	1	1	0	0	1	3,5
					Alisporivir	Human CYPs	HIV-1	In vitro studies	Peroral	No	0	0,25	1	0	1	1	3,25
					Irbersartan	Human ATR	HBV	In vitro	Peroral	Yes	0	1	1	0	1	0	3
					Merimepodib	Human IMPDH	HBV	In vitro	Peroral	Yes	0	1	1	0	1	0	3
					Thymalfasin	Human (unkno	HBV	Approved	Subcutaneous	Yes	0	1	1	0	1	0	3
					Tilorone	Human (unkno	HBV	Approved	Peroral	Yes	0	1	1	0	1	0	3
					Simvastatin	Human HMGCI	HBV	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Inosine	Viral RT	HBV	Clinical trials	Peroral	Yes	0	1	1	0	1	0	3
					Sirolimus	Human PTK	HBV	In vitro	Peroral	Yes	0	1	1	0	1	0	3
					IL7	Human CD127	HBV	Clinical trials	Subcutaneous	Yes	0	1	1	0	1	0	3
					Vesatolimod	Human TLR7	HBV	Clinical trials	Peroral	N.a.	0	1	0	0	1	1	3
					Navitoclax	Human BCL2	HBV	In vitro	Peroral	Yes	0	1	0	0	1	0	2
Ast-VA1	Astroviridae	(+)ssRNA	Digestive and excretor	n.a.	Favipiravir	Viral RNA pol	Ast-VA1	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Ribavirin	Viral RNA pol	Ast-VA1	In vitro studies	Peroral; Inhala	Yes	1	1	1	0,25	1	0	4,25

DENV	Flaviviridae	(+)ssRNA	Multiple	0,37	Ivermectin	Human importi	DENV-2	Clinical trials	Peroral	N.a.	1	1	1	0,75	1	1	5,75
					Ivermectin	Human importi	DENV-3	Clinical trials	Peroral	N.a.	1	1	1	0,75	1	1	5,75
					Ivermectin	Human importi	DENV-4	Clinical trials	Peroral	N.a.	1	1	1	0,75	1	1	5,75
					Nitroprusside	Human NPR1	DENV	Animal studies	Injection	N.a.	1	1	1	0,5	1	1	5,5
					Prochlorperazine	Human clathri	DENV-2	Animal studies	Injection	N.a.	1	1	1	0,5	1	1	5,5
					ABMA	Human GTPase	DENV	In vitro studies	Subcutaneous	N.a.	1	1	1	0,25	1	1	5,25
					Posaconazole	Human OSBP	DENV-1	In vitro studies	Injection	N.a.	1	1	1	0,25	1	1	5,25
					Azauridine	Viral RNA pol	DENV-1	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Galidesivir	Viral RNA pol	DENV-2	In vitro studies	Injection	N.a.	1	1	1	0,25	1	1	5,25
					Posaconazole	Human OSBP	DENV-2	In vitro studies	Injection	N.a.	1	1	1	0,25	1	1	5,25
					Amiodarone	Human (multip	DENV-2	In vitro studies	Peroral; Inject	N.a.	1	1	1	0,25	1	1	5,25
					Amodiaquine	Human (Multip	DENV-2	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Azauridine	Viral RNA pol	DENV-2	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					GS-441524	Viral RNA pol	DENV-2	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Lanatoside C	Unknown	DENV-2	In vitro studies	Peroral, intrav	N.a.	1	1	1	0,25	1	1	5,25
					Manidipine	Human ion cha	DENV-2	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Nelfinavir	Unknown	DENV-2	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Raloxifene	Human ER	DENV-2	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Saracatinib	Human PTK	DENV-2	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Sofosbuvir	Viral RNA pol	DENV-2	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Posaconazole	Human OSBP;	DENV-4	In vitro studies	Injection	N.a.	1	1	1	0,25	1	1	5,25
					Azauridine	Viral RNA pol	DENV-4	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Ivermectin	Human importi	DENV-1	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Amantadine	Unknown	DENV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Chloroquine	Human (Multip	DENV	Clinical trials	Peroral; Inject	Yes	1	1	1	0,75	1	0	4,75
					Niclosamide	Human (multip	DENV-2	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Sunitinib	Human PTK	DENV-1	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Bortezomib	Human protea	DENV-2	Animal studies	Injection	Yes	1	1	1	0,5	1	0	4,5
					Erlotinib	Human PTK	DENV-2	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Fenretinide	Human RAR	DENV-2	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Lovastatin	Human HMGCI	DENV-2	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Minocycline	Human MIF	DENV-2	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Fenretinide	Human RAR	DENV-3	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Sunitinib	Human AP2	DENV-3	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Fenretinide	Plasma membr	DENV-4	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Sunitinib	Human PTK	DENV-4	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Quinine	Viral protease	DENV-2	In vitro studies	Injection	Yes	1	1	1	0,25	1	0	4,25
					Fluvastatin	Human HMGCI	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Itraconazole	Human OSBP	DENV-2	In vitro studies	Peroral; Inject	Yes	1	1	1	0,25	1	0	4,25
					Labyrinthopeptin A	Unknown	DENV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	0	1	4,25
					Brequinar	Human DHODH	DENV	In vitro studies	Peroral; Inject	Yes	1	1	1	0,25	1	0	4,25
					Anisomycin	Human ribosor	DENV-1	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Betulinic Acid	Unknown	DENV-1	In vitro studies	Peroral; Topic	Yes	1	1	1	0,25	1	0	4,25
					Glycyrrhizin	Human TNF	DENV-1	In vitro studies	Peroral; Inject	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	DENV-1	In vitro studies	Peroral, Intrav	Yes	1	1	1	0,25	1	0	4,25
					Minocycline	Human MIF	DENV-1	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	DENV-1	In vitro studies	Peroral; Inhala	Yes	1	1	1	0,25	1	0	4,25
					Cucurbit[7]uril	Human polyam	DENV-2	In vitro studies	N.a.	N.a.	1	1	1	0,25	0	1	4,25
					IFN-g	Human IFNGR	DENV-2	In vitro studies	Injection	Yes	1	1	1	0,25	1	0	4,25
					Mitoxantrone	Unknown	DENV-2	In vitro studies	Injection	Yes	1	1	1	0,25	1	0	4,25
					Topotecan	Human topois	DENV-2	In vitro studies	Injection	Yes	1	1	1	0,25	1	0	4,25
					Anisomycin	Human ribosor	DENV-2	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Betulinic Acid	Unknown	DENV-2	In vitro studies	Peroral; Topic	Yes	1	1	1	0,25	1	0	4,25
					Chlorpromazine	Human AP2	DENV-2	In vitro studies	Peroral; Inject	Yes	1	1	1	0,25	1	0	4,25
					Cyclosporine	Human CYPs	DENV-2	In vitro studies	Peroral; Inject	Yes	1	1	1	0,25	1	0	4,25
					Fluoxetine	Unknown	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Glycyrrhizin	Human TNF	DENV-2	In vitro studies	Peroral; Inject	Yes	1	1	1	0,25	1	0	4,25
					GSK583	Human RIPK2	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Halofuginone	Human tRNA s	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Hydroxychloroquin	Human (Multip	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	DENV-2	In vitro studies	Peroral, Intrav	Yes	1	1	1	0,25	1	0	4,25
					Luteolin	Unknown	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Metformin	Unknown	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Mycophenolic acid	Human IMPDH	DENV-2	In vitro studies	Peroral, Inject	Yes	1	1	1	0,25	1	0	4,25
					Quinacrine	Human protea	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	DENV-2	In vitro studies	Peroral, Inhala	Yes	1	1	1	0,25	1	0	4,25
					Simvastatin	Human HMGCI	DENV-2	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Anisomycin	Human ribosor	DENV-3	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Betulinic Acid	Unknown	DENV-3	In vitro studies	Peroral, Topic	Yes	1	1	1	0,25	1	0	4,25
					Minocycline	Human MIF	DENV-3	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Suramin	Viral helicase	DENV-4	In vitro studies	Injection	Yes	1	1	1	0,25	1	0	4,25
					Anisomycin	Human ribosor	DENV-4	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Betulinic Acid	Unknown	DENV-4	In vitro studies	Peroral, Topic	Yes	1	1	1	0,25	1	0	4,25
					Glycyrrhizin	Human TNF	DENV-4	In vitro studies	Peroral, Inject	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	DENV-4	In vitro studies	Peroral, Intrav	Yes	1	1	1	0,25	1	0	4,25
					Metformin	Unknown	DENV-4	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Minocycline	Human MIF	DENV-4	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	DENV-4	In vitro studies	Peroral, Inhala	Yes	1	1	1	0,25	1	0	4,25
					Fenretinide	Human RAR	DENV-1	Animal studies	Peroral	Yes	1	1	1	0,5	0	0	3,5
					GSK717	Human NOD2	DENV-2	In vitro studies	N.a.	Yes	1	1	1	0,25	0	0	3,25
HCV	Flaviviridae	(+)ssRNA	Digestive and excretor	6,3	Boceprevir	Viral protease	HCV	Approved	Peroral	No	1	1	1	1	1	1	6
					Daclatasvir	Viral NS5A	HCV	Approved	Peroral	N.a.	1	1	1	1	1	1	6
					Sofosbuvir	Viral RNA pol	HCV	Approved	Peroral	N.a.	1	1	1	1	1	1	6
					Simeprevir	Viral protease	HCV	Approved	Peroral	N.a.	1	1	1	1	1	1	6
					Alisporivir	Human CYPs	HCV	Clinical trials	Peroral	No	1	1	1	0,75	1	1	5,75
					IFN-a	Human IFNAR	HCV	Approved	Peroral, Intrav	Yes	1	1	1	1	1	0	5
					Ribavirin	Viral RNA pol	HCV	Approved	Peroral	Yes	1	1	1	1	1	0	5
					Cyclosporine	Human CYPs	HCV	Clinical trials	Peroral	Yes	1	1	1	0,75	1	0	4,75
					Mycophenolic acid	Human IMPDH	HCV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-l	Human IFNAR	HCV	Clinical trials	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Suramin	Human (multip	HCV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					Tipranavir	Unknown	HIV	n.a.	Peroral	N.a.	0	0	0	0	1	1	2
ZIKV	Flaviviridae	(+)ssRNA	Multiple	n.a.	Rilpivirine	Viral RNA pol	ZIKV	Animal studies	Peroral	No	1	1	1	0,5	1	1	5,5
					Sofosbuvir	Viral RNA pol	ZIKV	Animal studies	Peroral	No	1	1	1	0,5	1	1	5,5
					Favipiravir	Viral RNA pol	ZIKV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Efavirenz	Viral RNA pol	ZIKV	In vitro studies	Peroral	No	1	1	1	0,25	1	1	5,25
					Labyrinthopeptin A	Unknown	ZIKV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					S416	Human DHODH	ZIKV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					Simeprevir	Viral protease	ZIKV	In vitro studies	Peroral	N.a.	1	1	1	0,25	1	1	5,25
					Saliphenylhalamid	Human vATPas	ZIKV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	1	1	5,25
					Lopinavir	Unknown	ZIKV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Nitazoxanide	Human pyruva	ZIKV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Novobiocin	Viral protease	ZIKV	Animal studies	Peroral	Yes	1	1	1	0,5	1	0	4,5
					Clofazimine	Viral RNA	ZIKV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Merimepodib	Human IMPDH	ZIKV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Niclosamide	Human (multip	ZIKV	In vitro studies	Peroral, Inhala	Yes	1	1	1	0,25	1	0	4,25
					Obatoclax	Human MCL1	ZIKV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					CR-31-B (–)	Human EIF4A	ZIKV	In vitro studies	Intraperitonea	N.a.	1	1	1	0,25	0	1	4,25
					Gemcitabine	Viral RNA pol	ZIKV	In vitro studies	Intravenous	Yes	1	1	1	0,25	1	0	4,25
					IFN-g	Human IFNGR	ZIKV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25
					Mycophenolic acid	Human IMPDH	ZIKV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Quinacrine	Viral glycoprot	ZIKV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Ribavirin	Viral RNA pol	ZIKV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Teriflunomide	Human DHODH	ZIKV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					Brequinar	Human DHODH	ZIKV	In vitro studies	Peroral	Yes	1	1	1	0,25	1	0	4,25
					IFN-a	Human IFNAR	ZIKV	In vitro studies	Peroral, Intrav	Yes	1	1	1	0,25	1	0	4,25
					Anisomycin	Human ribosor	ZIKV	In vitro studies	Subcutaneous	Yes	1	1	1	0,25	1	0	4,25

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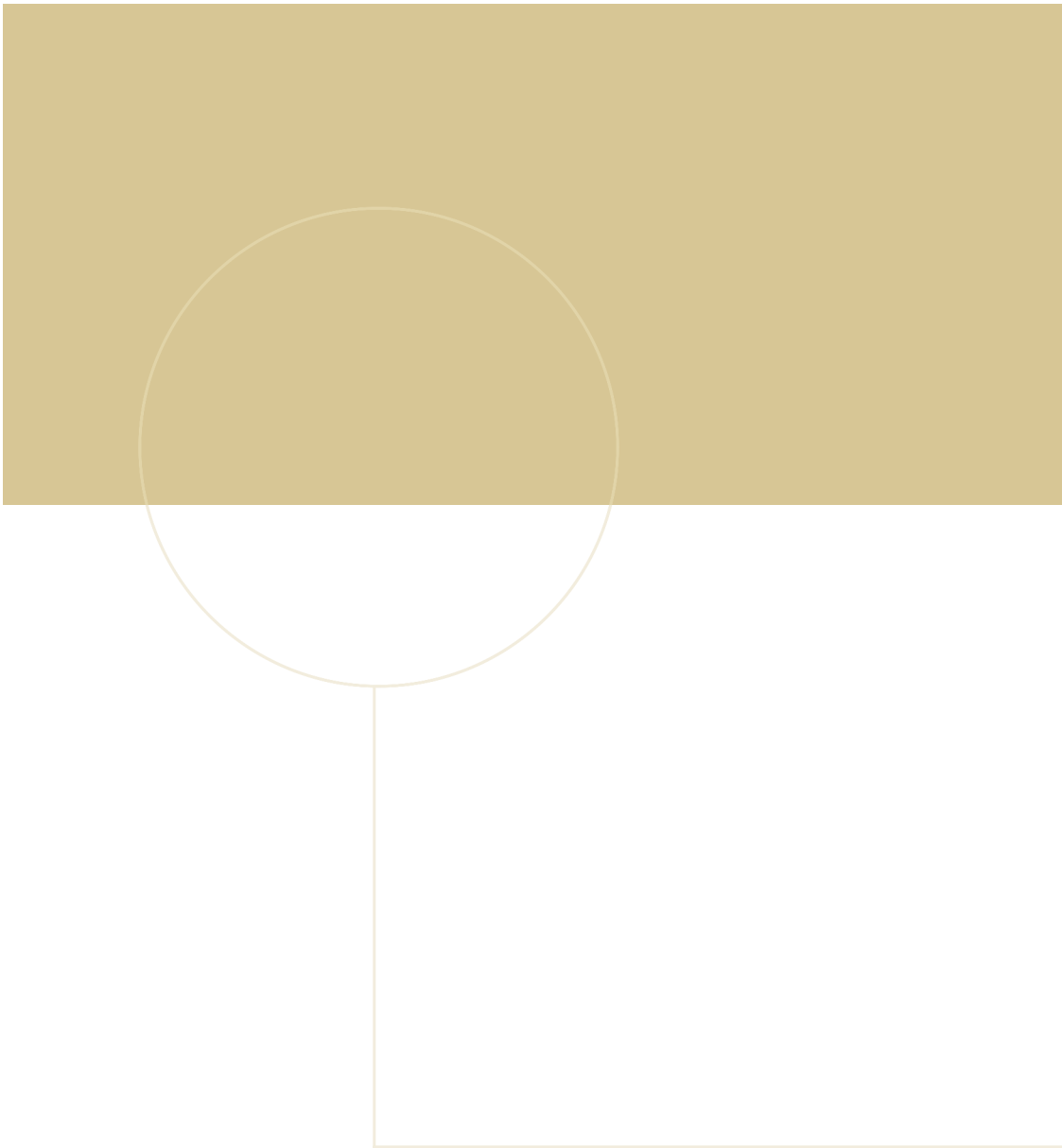

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