**Table S1: Literature mining for *in vitro* and/or *in vivo* assays of the 26 predicted drugs on IAVs infection.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Drug** | **Drug (classical) mode of action** | **Virus** | **Host (cell assay or mice)** | **Effect** | **Reference** |
| SB203580 | p38 MAPK inhibitor | A/Weiss/43 (H1N1) | human epithelial cell lines cells  | inhibit viral replication | ([1](#_ENREF_1)) |
| U0126 | MEK inhibitor |  A/FPV/Bratislava/79 (H7N7), A/Regensburg/D6/2009 (H1N1v),HPAI A/mallard/Bavaria/1/2006 (H5N1) and A/goosander/Bavaria/20/2006 (H5N1)  | A549, and mice | inhibit viral replication, and protect mice from lethal infection | ([2](#_ENREF_2)) |
| dexamethasone | Anti-inflammatory glucocorticoids | A/Chicken/Hebei/108/2002 (H5N1) | mice | no beneficial effect on acute respiratory distress syndrome caused by the H5N1 infection in mice. | ([3](#_ENREF_3)) |
| SP600125 | JNK inhibitor | A/FPV/Bratislava/79 (H7N7), A/Hamburg/4/09 (H1N1v) | A549 | inhibit viral replication | ([4](#_ENREF_4)) |
| epigallocatechin-gallate | anti-oxidant polyphenol flavonoid | A/Puerto Rico/8/34/(H1N1), A/Beijing/262/95/(H1N1), A/Panama/2007/99/(H3N2), and B/Yamanashi/166/98/, Yokohama/77/2008/(H1N1) OPR: oseltamivir phosphate-resistant (OPR), Yokohama/63/2007/(H1N1) AR: amantadine-resistant (AR), A/Yokohama/91/2008/(H1N1) OPR/AR: (OPR/AR) and avian pathogenic influenza (A/Duck/Hong Kong/342/78/(H5N2) | MDCK cells | inhibit viral replication | ([5](#_ENREF_5)) |
| LY294002 | PI3K inhibitor | PR8 (H1N1) | A549 | inhibit viral replication | ([6](#_ENREF_6)) |
| genistein | tyrosine kinase inhibitor |  A/FPV/Bratislava/79 (H7N7), PR8 (H1N1) | A549 | inhibit viral replication, impaired IAV uptake | ([7](#_ENREF_7)) |
| cyclosporin A | immunosuppressive drug | A/WSN/33 (H1N1), A/Chicken/Liaoning/1/00 (H9N2) | MDCK ,NCI-H292 cells and mice | inhibit viral replication | ([8](#_ENREF_8)) |
| etanercept | monoclonal antibody anti-TNF | ND | ND | ND | ND |
| resveratrol | polyphenol with anti-inflammatory effect | A/Puerto Rico/8/34 H1N1 (PR8) | MDCK ,NCI-H292 cells and mice | inhibit viral replication, and protect mice from lethal infection | ([9](#_ENREF_9)) |
| SB202190 | p38 MAPK inhibitor | A/Thailand/1(KAN-1)/2004 (H5N1) and A/FPV/Bratislava/79 (H7N7) | HUVEC, and mice | inhibit viral replication and cytokines production, and protect mice from lethal infection | GSE40281 |
| fontolizumab | humanised anti‐interferon γ antibody | ND | ND | ND | ND |
| troglitazone | antidiabetic and anti-inflammatory thiazolidinediones | ND | ND | ND | ND |
| PD98059 | MEK1 inhibitor | A/Hong Kong/2/68; H3N2 | HUVEC | inhibit viral replication | ([10](#_ENREF_10)) |
| AG490 | JAK2/3 inhibitor | A/WSN/1933(H1N1) | A549  | inhibits viral replication and blocks nuclear import of M1 during viral replication | ([11](#_ENREF_11)) |
| chloroquine | prophylactic treatment for malaria, anti-inflammatory agents, autophagy inhibitor | A/Thailand/1(KAN-1)/2004 (H5N1) and A/FPV/Bratislava/79 (H7N7) | A549, and Mice | inhibit viral replication, and improve mice survival | ([12](#_ENREF_12)) |
| salicylic acid | active metabolite of aspirine | ND | ND | ND | ND |
| aspirin | nonsteroidal anti-inflammatory drugs inhibiting cyclooxygenase, also blocks NF-κB activation | A/Bratislava/79 (H7N7), PR8, A/Thailand/1(KAN-1)/2004 (H5N1)  | A549, and mice | inhibit viral replication, and protect mice from lethal infection | ([13](#_ENREF_13)) |
| tracrolimus | immunosuppressive drug | ND | ND | ND | ND |
| infliximab | anti-TNF alpha antibody | ND | ND | ND | ND |
| JAK inhibitor I | JAK inhibitor | A/HK/483/97 (H5N1) | Human peripheral blood monocyte–derived mac | Suppress H5N1 virus–induced TNF-a, IP-10 and MCP-1 in H5N1 and H1N1 virus infection, but not viral replication. | ([14](#_ENREF_14)) |
| minocycline | tetracycline antibiotic with multiple mechanisms of action (anti-inflammatory, antiapoptotic and protease inhibitor) | ND | ND | ND | ND |
| simvastatin | inhibits HMG-CoA reductase with hypolipidemic effect, anti-inflammatory properties | A/Mexico/4482/09 (A/H1N1pdm09), A/Chicken/Korea/Gimje/08 (H5N1) | mice | simvastatin administration did not reduce morbidity, mortality, or viral load of mice infected with H1N1 or H5N1 viruses but slightly reduced lung cytokine production in H5N1 | ([15](#_ENREF_15)) |
| docosahexaenoic acid (DHA) | antiinflammatory fatty acid | A/Puerto Rico/8/34 (H1N1; PR8), A/California/04/2009 H1N1 (2009 H1N1), A/Vietnam/1203/04 H5N1 (H5N1) | A549, and mice | DHA-derived products (including protectin D1) inhibit viral replication and protect mice from lethal infection | ([16](#_ENREF_16)) |
| KN-62 | Ca++/calmodulin-dependent protein kinase inhibitor | ND | ND | ND | ND |
| PS-1145 | IKK inhibitor  | ND | ND | ND | ND |

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