

Antiviral Development Services

Utilize ImQuest BioSciences' expertise to accelerate the development of candidate antiviral drugs designed for the treatment of respiratory virus infections. Employ our suite of *in vitro* screening assays to rapidly identify and characterize new antiviral drug candidates for their activity against respiratory viruses.

- Evaluate the efficacy and toxicity of potential new inhibitors
- Investigate range of action with a broad panel of viral isolates, a variety of cell lines and/or primary cells
- Study the mechanism of action of drug candidates with cell-based and enzymatic assays
- Take advantage of our services for the selection and characterization of drug-resistant viruses
- Investigate the potential synergy of your drug candidate in combination with other antiviral agents with our optimized cell-based assays utilizing MacSynergy II analysis
- Rapidly transition from *in vitro* to *in vivo* efficacy studies

Virus Production Services

Save valuable time and resources by utilizing ImQuest BioSciences' Virus Production Services for the expansion and concentration of your respiratory virus stocks. Services include:

- Production of crude virus preparations
- Concentration of virus from crude preparations
- Preparation of crude infected cell lysates
- Isolation of viral proteins, RNA & DNA
- Determination of virus concentration by plaque assay or TCID₅₀ determinations
- Preparation of inactivated virus
- Quantification of proteins and nucleic acids

With expertise gained from years of virus and cell culture experience and utilizing the latest Tangential Flow Filtration technology, we can propagate, concentrate, and characterize your viruses at scales ranging from milliliters to liters.

Respiratory Virus Panel

- Influenza Virus
- Human Parainfluenza Virus
- Respiratory Syncytial Virus
- Human Rhinovirus
- Measles Virus
- Human Adenovirus

In vitro Toxicology Services

ImQuest BioSciences has assembled and validated a platform of toxicity and mechanism of toxicity assays to expedite the development of new antiviral agents.

Our *in vitro* and *ex vivo* assays are used to

- Identify potential safety and development problems before animal safety and toxicology evaluations
- Provide a focused rationale for the continued development of a therapeutic or prevention product
- Save our clients' valuable time and resources – facilitating successful development of new products

We offer a suite of *in vitro* assays to evaluate cytotoxicity & mechanism of cytotoxicity, immunotoxicology, and genomic toxicology.

Move your small molecule or biologic development program forward more efficiently and expeditiously with ImQuest's ToxiSENS Services platform.

Respiratory Viruses and Cell Line Panels

Screen your drug candidates for activity against various respiratory viruses including influenza virus, parainfluenza virus, respiratory syncytial virus, human rhinovirus, measles virus and human adenovirus. Our virus panels include numerous wild-type and resistant strains. Viruses in our panels have been tested in a variety of cell lines (Vero, HEp2, H1-HeLa, A549 and Huh7); customized primary cell systems are available. Assay endpoints include CPE, plaque, and qPCR based endpoints. Secondary biological evaluations, such as variation in multiplicity of infection and time of drug addition are also available.

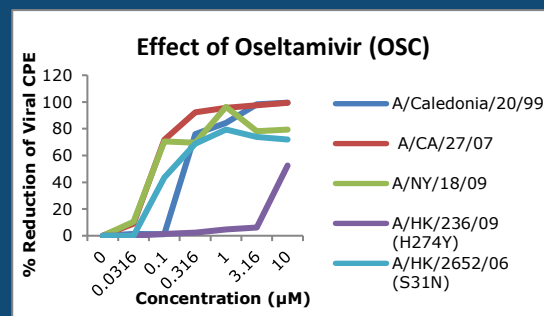
Representative Antiviral Evaluations						
Virus	Strain	Cell Line	Drug	EC ₅₀ (μM)	TC ₅₀ (μM)	Therapeutic Index
RSV	A2	Huh7	TMC353121	< 0.0005	> 0.1	> 200
	A2	HEp2	TMC353121	0.001	> 0.1	> 100
	A2	Huh7	Ribavirin	7.55	> 100	>13.2
	Memphis	HEp2	TMC353121	0.00008	>0.1	>1250
	B18537	HEp2	TMC353121	0.0005	>0.1	>200
PIV	SF4	Vero	Ribavirin	2.33	20.4	8.76
	SF4	Huh7	Ribavirin	0.009	> 100	>11,111
HRV	26	H1 HeLa	Pleconaril	0.01	26.1	2,610
	1A 2060	H1 HeLa	Pleconaril	0.16	37.6	235
	1611759	H1 HeLa	Pleconaril	0.01	30.8	3,080
	27582	H1 HeLa	Pleconaril	0.03	13.3	443
	141059	H1 HeLa	Pleconaril	0.006	14.7	7,350

About ImQuest BioSciences

ImQuest BioSciences is a preclinical contract research and development company that evaluates the potential of new and novel pharmaceutical products. We specialize in the development of drugs, vaccines and biologics for the treatment and prevention of infectious disease, cancer and inflammatory disease.

Anti-Influenza Virus Capabilities

Efficacy and Range of Action Assays

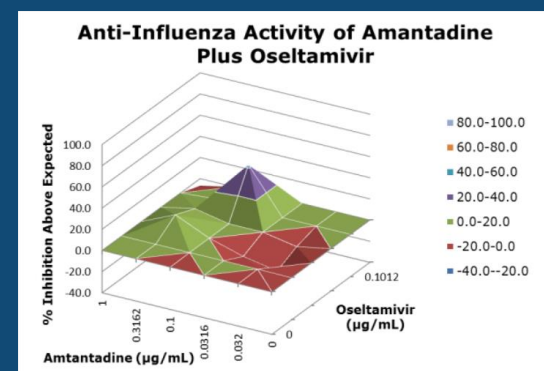


A/HK/236/09 virus (Purple) is a clinical isolate harboring a H274Y mutation conferring resistance to OSC. Numerous wild-type and resistant influenza strains are available.

Mechanism of Action Evaluations

- Hemagglutinin (HA) attachment inhibition
- Fusion inhibition
- Influenza polymerase inhibition
- Neuraminidase inhibition
- Serine Protease inhibition
- Virucidal assay

Antiviral Combination Assessment



Combination assays with your compounds and current FDA approved drugs are available. Above, oseltamivir and amantadine are seen to be synergistic utilizing MacSynergy II based assessment.