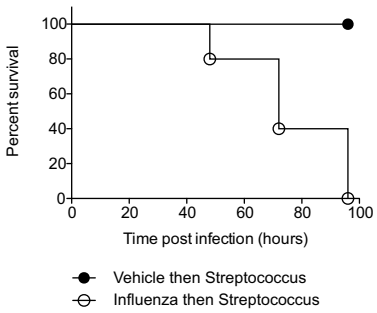
preclin biosystems

your partner in drug validation

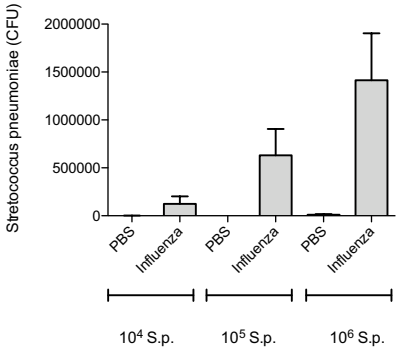
Post-viral bacterial superinfections:

Lower respiratory tract infections with viruses such as Influenza or bacteria such as Streptococcus are a leading cause of death worldwide. Single infections pose a threat, but one of the highest risks is in fact secondary bacterial superinfections following a viral infection. Indeed, complications stemming from Influenza infections are often due to secondary bacterial infections. Data in the literature indicates that in addition to tissue damage, viral infections can also dampen the host s immune response such that it is unable to mount effective anti-bacterial innate responses. New therapies capable of mitigating the negative prognosis of viral-bacterial superinfections are clearly needed. Such therapies could target the virus, the bacteria or fortify the immune system ensuring it is capable of mounting appropriate responses against secondary infections. Preclin Biosystems has established superinfection models in mice allowing the preclinical efficacy testing of anti-infectives or immuno-modulating drugs. Specifically, following sub-lethal infection with Influenza virus, mice are infected with sub-lethal levels of either the gram-positive bacteria *Streptococcus pneumoniae,* or the gram-negative bacteria, *Klebsiella pneumoniae*. Mice previously infected with Influenza virus exhibit an increased morbidity and mortality following the bacterial infection and failure to clear the pathogen. Utilizing this model one can address the effectiveness or mechanism of action of novel therapeutics in controlling the viral infection, the bacterial infection or the immune system directly.

Survival following post-viral secondary bacterial infection



Bacteremia following post-viral secondary bacterial infection



Experimental readouts:

- Disease incidence
- Morbidity and mortality
- Inflammatory cell analysis
- Measurement of cytokines and chemokines

Duration:

15-20 days depending on analysis selected

Our scientific project managers can provide expert advice and guidance for all of your efficiacy studies.

Please contact us for customized Service Packages
info@preclinbiosystems.com

Service Package I is available alone, or in combination with Service Packages II and III

Service Package I

- Administration of test compounds
- Initiation of disease model
- Determination of disease severity

Service Package II

- Measurement and analysis of cellular infiltrates
- Morbidity and mortality

Service Package III

- Analysis of tissue cytokines and chemokines