This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Infectious disease				
Influenza virus	Dihydrofolate reductase (DHFR); neuraminidase (NEU1; SIAL1)	<p><i>In vitro</i> studies suggest that NSC89853 could be useful for treating H5N1 avian influenza. NSC89853 is a compound from the National Cancer Institute database that inhibits DHFR. In H5N1- and H1N1-infected cells, NSC89853 produced dose-dependent inhibition of viral replication comparable to Tamiflu oseltamivir. In a NEU1 activity assay, NSC89853 inhibited NEU1 activity. Molecular docking studies showed that the compound bound H5N1 NEU1 differently from oseltamivir or Relenza zanamivir, suggesting that NSC89853 could be effective against mutant viruses resistant to the two drugs. Studies in animals are underway.</p> <p>Tamiflu, a NEU1 inhibitor from Gilead Sciences Inc. and Roche, is marketed to treat and prevent influenza virus infections.</p> <p>Relenza, an inhaled influenza NEU1 inhibitor from Biota Holdings Ltd. and GlaxoSmithKline plc, is marketed for the same indication.</p> <p>Neutrexin trimetrexate, a DHFR inhibitor from AstraZeneca plc, is marketed to treat pneumonia. At least five other companies have NEU1 or DHFR inhibitors in Phase III or earlier to treat pneumonia or influenza.</p> <p>SciBX 2(17); doi:10.1038/scibx.2009.708 Published online April 30, 2009</p>	Patent application filed; available for licensing	<p>An, J. <i>et al. J. Med. Chem.</i>; published online April 15, 2009; doi:10.1021/jm800455g</p> <p>Contact: Steven J.M. Jones, British Columbia Cancer Agency Genome Sciences Centre, Vancouver, British Columbia, Canada e-mail: sjones@bcgsc.ca</p> <p>Contact: Allan S.Y. Lau, The University of Hong Kong, Pokfulam, Hong Kong, China e-mail: asylau@hkucc.hku.hk</p>