This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Infectious disease				
Bacterial infection	Pannexin 1 (PANX1)	<p><i>In vitro</i> studies suggest avoiding PANX1 inhibition could prevent the toxic side effects of some quinolone antibiotics. Pfizer Inc.'s quinolone antibiotic Trovan trovafloxacin showed potent antibacterial effects by targeting bacterial topoisomerases but was linked to severe toxicity and patient deaths. Cell-based assays identified Trovan as an inhibitor of the transmembrane channel PANX1. In cultured cells undergoing apoptosis, quinolones lacking a fluorinated ring at position N1, such as ciprofloxacin or levofloxacin, did not inhibit small molecule uptake by PANX1, whereas quinolones containing a fluorinated ring at that position, such as Trovan, difloxacin or tosufloxacin, inhibited or partially inhibited small molecule uptake by PANX1. Next steps could include conducting studies to identify specific PANX1-quinolone interactions and determining underlying mechanisms of toxicity.</p> <p>Ciprofloxacin and levofloxacin are generic antibiotics. Difloxacin and tosufloxacin are commercially available in some Asian countries to treat bacterial infections.</p> <p>SciBX 7(14); doi:10.1038/scibx.2014.404 Published online April 10, 2014</p>	Patent application filed; available for licensing	<p>Poon, I.K.H. <i>et al. Nature</i>; published online March 12, 2014; doi:10.1038/nature13147 Contact: Kodi S. Ravichandran, University of Virginia, Charlottesville, Va. e-mail: ravi@virginia.edu</p>