This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Infectious disease				
Bacterial infection	Not applicable	<i>In vitro</i> and rodent studies identified cytoplasmic rRNA-targeted aminoglycoside derivatives that could help treat bacterial infections and certain genetic diseases with fewer side effects than approved aminoglycosides. Aminoglycosides treat bacterial infections and nonsense mutation-associated genetic diseases by binding to bacterial rRNA or eukaryotic cytoplasmic rRNA but cause side effects such as ototoxicity by inhibiting mitochondrial rRNA. In a human cell line, aminoglycoside derivatives with selectivity for cytoplasmic over mitochondrial rRNA caused less oxidative stress and cell death than mitochondria-targeting derivatives. In mouse cochlear explants and in guinea pigs, cytoplasm-targeting aminoglycoside derivatives led to less outer ear hair cell loss. Next steps include assessing therapeutic activity. SciBX 7(2); doi:10.1038/scibx.2014.56 Published online Jan. 16, 2014	Patent and licensing status unavailable	Shulman, E. <i>et al. J. Biol. Chem.</i>; published online Dec. 3, 2013; doi:10.1074/jbc.M113.533588 Contact: Timor Baasov, Technion-Israel Institute of Technology, Haifa, Israel e-mail: chtimor@techunix.technion.ac.il