This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Cancer	Aldehyde dehydrogenase 3 family member A1 (ALDH3A1)	<p><i>In vitro</i> studies suggest ALDH3A1 inhibitors could help sensitize cancers to cyclophosphamide or related compounds. ALDH3A1 is overexpressed on some cancer cells and can lead to drug resistance by detoxifying phosphamide-based therapeutics. Enzyme kinetic and crystallographic studies identified an inhibitor that bound the aldehyde-binding pocket of ALDH3A1 and had selectivity for ALDH3A1 over other closely related enzymes. In human lung adenocarcinoma or glioblastoma cells expressing ALDH3A1, compared with primary human lung fibroblasts that did not express the enzyme, the inhibitor increased chemosensitivity to the cyclophosphamide analog mafosfamide. Next steps include evaluating toxicology and pharmacology of ALDH3A1 inhibitors.</p> <p>Cyclophosphamide is a generic chemotherapeutic.</p> <p>SciBX 7(6); doi:10.1038/scibx.2014.164 Published online Feb. 13, 2014</p>	Provisional patent application filed; available for licensing	<p>Parajuli, B. <i>et al. J. Med. Chem.</i>; published online Jan. 4, 2014; doi:10.1021/jm401508p</p> <p>Contact: Thomas D. Hurley, Indiana University School of Medicine, Indianapolis, Ind. e-mail: thurley@iu.edu</p>