This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Cancer				
Acute lymphoblastic leukemia (ALL)	L-Asparagine	<p>Cell culture and mouse studies identified mutants of <i>Escherichia coli</i> L-asparaginase II (EcA) that could help treat ALL. EcA depletes L-asparagine, which is required for protein synthesis in ALL cells but has a short half-life and induces immunogenicity. In cultured ALL cells and leukemic blast cells from patients with ALL, several mutants of EcA induced cell cycle arrest and apoptosis with greater potency than EcA and did not affect peripheral blood monocytes. Antibody-mediated inactivation of EcA limits the effectiveness of repeated treatment. In mice and in sera from patients treated with wild-type EcA, mutant EcA showed less cross-reactivity with neutralizing antibodies than wild-type EcA. Next steps include additional experiments in clinical samples.</p> <p>Kyowa Hakko Kirin Co. Ltd. markets Leunase, which contains L-asparaginase obtained from a genetically modified <i>E. coli</i> strain and is used to treat ALL and other cancers.</p> <p>Jazz Pharmaceuticals plc markets Erwinaze, an <i>Erwinia chrysanthemi</i>-derived asparaginase, to treat ALL in patients who developed hypersensitivity to <i>E. coli</i>-derived asparaginase.</p> <p>Jazz Pharmaceuticals and Alize Pharma S.A.S. have a pegylated L-asparaginase from <i>E. chrysanthemi</i> in Phase I trials for ALL.</p> <p>SciBX 7(2); doi:10.1038/scibx.2014.45 Published online Jan. 16, 2014</p>	Patent application filed; available for licensing	<p>Mehta, R.K. <i>et al. J. Biol. Chem.</i>; published online Dec. 2, 2013; doi:10.1074/jbc.M113.486530</p> <p>Contact: Avinash Sonawane, KIIT University, Bhubaneswar, India e-mail: asonawane@kiitbiotech.ac.in</p>