This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Autoimmune disease				
Primary immunodeficiency disease (PID)	Phosphoinositide 3-kinase catalytic subunit δ -polypeptide (PI3KCD; p110 δ)	<p>Sequencing and <i>in vitro</i> studies identified a specific PID called activated phosphoinositide 3-kinase-δ (PI3Kδ) syndrome and suggest selective inhibitors of p110δ could help treat the condition. Sequencing of RNA from patients with PID identified 17 subjects who carried a gain-of-function E1021K mutation in <i>p110δ</i> that increased kinase activity compared with the wild-type subunit. <i>In vitro</i>, two isoform-selective inhibitors of p110δ decreased the activity of the mutant enzyme compared with baseline. Next steps include identifying additional patients who have activated PI3Kδ syndrome and recruiting them for clinical trials to evaluate selective p110δ inhibitors.</p> <p>Gilead Sciences Inc.'s p110δ inhibitor, idelalisib, is under review for non-Hodgkin's lymphoma (NHL). The compound also is in Phase III testing to treat chronic lymphocytic leukemia (CLL).</p> <p>At least 10 other companies have compounds that inhibit p110δ in Phase II testing or earlier to treat various cancers and inflammatory and autoimmune diseases.</p>	Unpatented; licensing status not applicable	<p>Angulo, I. <i>et al. Science</i>; published online Oct. 17, 2013; doi:10.1126/science.1243292</p> <p>Contact: Sergey Nejentsev, University of Cambridge, Cambridge, U.K. e-mail: sn262@cam.ac.uk</p>
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