This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Breast cancer	β -Catenin (CTNNB1); HER2 (EGFR2; ErbB2; neu); p21 protein (Cdc42 Rac)-activated kinase 1 (PAK1)	<p><i>In vitro</i> and mouse studies suggest inhibiting PAK1 could help treat HER2⁺ breast cancers. In HER2⁺ breast cancer cells, small hairpin RNA-mediated knockdown of <i>PAK1</i> decreased cell proliferation and CTNNB1 levels compared with <i>PAK2</i> knockdown. In mouse xenograft models for HER2⁺ human breast cancer, combined small molecule-mediated inhibition of PAK1 and CTNNB1 signaling caused more potent tumor growth prevention than inhibition of either target alone. In breast cancer cells resistant to the HER2 inhibitor Herceptin trastuzumab, blockade of PAK1 and CTNNB1 restored sensitivity to the drug. Next steps include clinical trials of PAK1 inhibitors that show favorable bioavailability. Roche's Genentech Inc. unit and Chugai Pharmaceutical Co. Ltd. market Herceptin to treat breast and gastric cancers. Marina Biotech Inc.'s CEQ508, an oral RNAi targeting CTNNB1, is in Phase I/II testing to treat colorectal cancers. Prism Pharma Co. Ltd. and Eisai Co. Ltd. have PRI-724, a CTNNB1 inhibitor, in Phase I testing to treat solid tumors.</p> <p>SciBX 6(19); doi:10.1038/scibx.2013.460 Published online May 16, 2013</p>	Findings unpatented; mouse models for evaluating Pak1 loss available for licensing	<p>Arias-Romero, L.E. <i>et al. Cancer Res.</i>; published online April 10, 2013; doi:10.1158/0008-5472.CAN-12-4453 Contact: Jonathan Chernoff, Fox Chase Cancer Center, Philadelphia, Pa. e-mail: j_chernoff@fccc.edu</p>