This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Cancer	Toll-like receptor 9 (TLR9); signal transducer and activator of transcription 3 (STAT3)	<p>Mouse studies suggest inhibitors of TLR9 or STAT3 could help prevent tumor recurrence after radiation therapy. In radiation-treated mice bearing melanoma, bladder or colorectal tumors, <i>Tlr9</i> knockout decreased activation of Stat3 in tumor-infiltrating myeloid cells compared with no knockout, thereby inhibiting tumor revascularization and tumor regrowth. In wild-type mice bearing those tumor types, radiation and either a TLR9 antagonist or <i>Stat3</i> small interfering RNA increased the time to tumor regrowth compared with radiation or targeted therapy alone. Ongoing work includes confirming the finding in tissue samples from patients with prostate cancer undergoing radiation therapy. Isis Pharmaceuticals Inc. and AstraZeneca plc have ISIS-STAT3Rx (AZD9150), an antisense inhibitor of STAT3, in Phase I/II testing to treat solid and blood cancers.</p> <p>Otsuka Pharmaceutical Co. Ltd. has OPB-31121, an inhibitor of STAT3 phosphorylation, in Phase I trials to treat solid tumors.</p> <p>Dynavax Technologies Corp. and GlaxoSmithKline plc have DV1179, an inhibitor of TLR9 and TLR7, in Phase I testing to treat systemic lupus erythematosus (SLE) and autoimmune and inflammatory diseases.</p> <p>SciBX 6(46); doi:10.1038/scibx.2013.1314 Published online Dec. 5, 2013</p>	Patent application filed by City of Hope; available for licensing	<p>Gao, C. <i>et al. Cancer Res.</i>; published online Oct. 23, 2013; doi:10.1158/0008-5472.CAN-13-1314 Contact: Marcin Kortylewski, Beckman Research Institute at City of Hope, Duarte, Calif. e-mail: mkortylewski@coh.org</p>