This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Breast cancer	Phosphoinositide-3 kinase (PI3K); poly(AD-ribose) polymerase (PARP); breast cancer 1 early onset (BRCA1); BRCA2	<p><i>In vitro</i> and mouse studies suggest combining PARP and PI3K inhibitors could help treat metastatic breast cancer.</p> <p>In a mouse model of BRCA1-related breast cancer, inhibition of PI3K with BKM120 decreased angiogenesis compared with vehicle but increased activity in other cancer-associated pathways. In the same model and in mice with BRCA1-driven breast cancer xenografts, BKM120 plus the PARP inhibitor olaparib prevented the compensatory pathway upregulation and delayed tumor growth better than either treatment alone.</p> <p>In a second study, small interfering RNA targeting a PI3K isoform in triple receptor-negative breast cancer cells decreased BRCA1 and BRCA2 levels compared with no treatment and sensitized the cells to PARP inhibitor-induced cell death. In mice with triple receptor-negative breast cancer xenografts, BKM120 plus olaparib inhibited tumor growth more than either treatment alone.</p> <p>Next steps could include testing the combination in the clinic.</p> <p>Novartis AG's BKM120 is in Phase II testing for various cancers. At least 18 other companies have PI3K inhibitors in clinical and preclinical testing to treat multiple types of cancer.</p> <p>AstraZeneca plc's olaparib is in Phase II testing to treat solid tumors. At least seven other companies have PARP inhibitors in clinical and preclinical testing to treat multiple types of cancer.</p> <p>SciBX 5(39); doi:10.1038/scibx.2012.1024 Published online Oct. 4, 2012</p>	Patent and licensing status unavailable	<p>Juvekar, A. <i>et al. Cancer Discov.</i>; published online Aug. 22, 2012; doi:10.1158/2159-8290.CD-11-0336 Contact: Gerburg M. Wulf, Beth Israel Deaconess Medical Center, Boston, Mass. e-mail: gwulf@bidmc.harvard.edu</p> <p>Ibrahim, Y.H. <i>et al. Cancer Discov.</i>; published online Aug. 22, 2012; doi:10.1158/2159-8290.CD-11-0348 Contact: José Baselga, Massachusetts General Hospital, Boston, Mass. e-mail: jbaselga@partners.org</p>