This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Cancer	Phosphoinositide 3-kinase (PI3K); phosphatase and tensin homolog deleted on chromosome ten (PTEN; MMAC1; TEP1); forkhead box O1 (FOXO1)	<p>Studies in mice suggest that the activation status of the PI3K pathway in tumor cells could help increase the dietary restriction sensitivity of tumors. In mouse xenografts of breast, brain, colon and prostate cancer, resistance to dietary restriction was associated with loss of PTEN expression or constitutive PI3K activity, whereas dietary restriction-sensitive tumors expressed PTEN or showed nonconstitutive PI3K activity. Overexpression of the PI3K downstream transcription factor FOXO1 in mouse xenografts also increased sensitivity to dietary restriction and caused a greater decrease in tumor volume than that seen in controls. Next steps include developing compounds to sensitize dietary restriction-insensitive tumors via modulation of the PI3K pathway.</p> <p>At least six companies have compounds targeting PI3K in preclinical and clinical testing to treat cancer.</p> <p>SciBX 2(11); doi:10.1038/scibx.2009.439 Published online March 19, 2009</p>	Unpatented; unavailable for licensing	<p>Kalaany, N. & Sabatini, D. <i>Nature</i>; published online March 11, 2009; doi:10.1038/nature07782</p> <p>Contact: David Sabatini, Whitehead Institute for Biomedical Research, Cambridge, Mass. e-mail: sabatini@wi.mit.edu</p>