This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Cancer				
Breast cancer	Homeobox A1 (HOXA1)	<p><i>In vitro</i> and mouse studies suggest depleting <i>HOXA1</i> could prevent progression of early breast cancer lesions. Computational evaluation and comparison of networks of gene expression changes in tumorigenic and wild-type mouse mammary glands identified <i>Hoxa1</i> as a possible modulator of early tumor progression. In 3D cell culture, siRNA knockdown of <i>Hoxa1</i> caused mammary epithelial tumor cells to adopt wild-type tissue architectures. In a mouse model of human breast cancer, intraductal delivery of lipid nanoparticle-formulated siRNA targeting <i>Hoxa1</i> decreased cell proliferation and tumor incidence compared with nonspecific siRNA. Next steps include profiling <i>Hoxa1</i> mutations in human breast cancer and building related computational models based on human clinical samples.</p> <p>SciBX 7(4); doi:10.1038/scibx.2014.113 Published online Jan. 30, 2014</p>	Gene regulatory network algorithm and lipid nanoparticle formulation patented; licensing status undisclosed	<p>Brock, A. <i>et al. Sci. Transl. Med.</i>; published online Jan. 1, 2014; doi:10.1126/scitranslmed.3007048</p> <p>Contact: Donald E. Ingber, Wyss Institute for Biologically Inspired Engineering at Harvard University, Cambridge, Mass. e-mail: don.ingber@wyss.harvard.edu</p>