This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Cancer				
Cancer	Adrenergic receptor β_3 (ADRB3)	<p>Studies in patient samples and mice suggest protecting nestin-positive bone marrow mesenchymal stem cells (MSCs) or their neural regulation could be useful for treating myeloproliferative neoplasms (MPNs). In human MPN samples and a mouse model of MPNs, there were decreased numbers of sympathetic nerve fibers that support nestin-positive bone marrow MSCs compared with those in normal samples and mice. In the mouse MPN model, depletion of nestin-positive MSCs accelerated disease progression versus no alteration. In the mouse model, treatment with a neuroprotective agent to prevent loss of sympathetic nerve fibers or an ADRB3 agonist to augment the activity of these fibers improved multiple markers of MPN. Next steps could include developing a method to selectively deliver a small molecule ADRB3 agonist to nestin-positive bone marrow MSCs. Astellas Pharma Inc. markets the ADRB3 agonist Betanis mirabegron to treat incontinence.</p> <p>At least three other companies have ADRB3 agonists in Phase II or Phase I testing to treat incontinence or inflammatory bowel disease (IBD).</p> <p>SciBX 7(28); doi:10.1038/scibx.2014.821 Published online July 24, 2014</p>	Patent and licensing status unavailable	<p>Arranz, L. <i>et al. Nature</i>; published online June 22, 2014; doi:10.1038/nature13383 Contact: Simón Méndez-Ferrer, National Center for Cardiovascular Research, Madrid, Spain e-mail: smendez@cnic.es</p>