This week in therapeutics

Indication	Target/marker/ pathway	Summary	Licensing status	Publication and contact information
Pulmonary disease				
Cystic fibrosis (CF)	Mammalian target of rapamycin (mTOR; FRAP; RAFT1); cAMP responsive element binding protein 1 (CREB1; CREB); granulocyte colony-stimulating factor receptor (CD114); receptor for advanced glycation endproducts (RAGE); ectonucleoside triphosphate diphosphohydrolase 1 (ENTPD1; CD39); chemokine (C-X-C motif) receptor 4 (CXCR4; NPY3R)	<p><i>Ex vivo</i> studies suggest that targeting the mTOR and CREB pathways could help treat CF. Flow cytometry screening of airway neutrophils collected from the sputum of CF patients showed upregulation of mTOR- and CREB-related markers CD114, RAGE, CD39 and CXCR4 compared with what was seen in neutrophils collected from the blood. Upregulation occurred during neutrophil migration to the lungs but before their release of lung-damaging elastase, indicating that these markers could be good for detecting early-stage disease. Future studies include determining the therapeutic potential of targeting the mTOR and CREB pathways in CF and exploring whether the findings are relevant to other inflammatory airway diseases such as chronic obstructive pulmonary disease (COPD).</p> <p>Novartis AG markets TOBI tobramycin inhalation solution to treat CF. Genentech Inc.'s Pulmozyme is marketed to treat CF. Compounds in Phase III for CF include Inspire Pharmaceuticals Inc.'s denufosol and Pharmaxis Ltd.'s bronchitol, as well as PTC124 from PTC Therapeutics Inc. and Genzyme Corp. At least 17 companies have therapies in preclinical to early-stage clinical testing to treat CF.</p>	Unpatented; unlicensed	<p>Makam, M. <i>et al. Proc. Natl. Acad. Sci. USA</i>; published online March 16, 2009; doi:10.1073/pnas.0813410106</p> <p>Contact: Rabindra Tirouvanziam, Stanford University School of Medicine, Stanford, Calif. e-mail: tirouvan@stanford.edu</p>
		<p>SciBX 2(12); doi:10.1038/scibx.2009.508 Published online March 26, 2009</p>		