This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Drug platforms			
Human pluripotent stem cell-derived lung and airway epithelial cells	<p>Human pluripotent stem cell-derived lung and airway epithelial cells could be used to model respiratory diseases. In human pluripotent stem cells, a growth factor cocktail plus small molecule signaling inhibitors of bone morphogenetic protein (BMP), transforming growth factor-β (TGFB; TGFβ) and porcupine-mediated wingless-type MMTV integration site (WNT) palmitoylation generated progenitor-like cells of the anterior foregut endoderm. In immunodeficient mice, progenitor-like cells transplanted under the kidney capsule differentiated into several types of lung and airway endodermal and mesodermal cells that expressed mature lung and airway epithelial markers. On a human lung matrix or fibronectin-coated plastic, differentiation of progenitor-like cells led to lung and airway endodermal and mesodermal cells that expressed all markers detected in the <i>in vivo</i>-differentiated cells. Next steps include using the system to model idiopathic pulmonary fibrosis (IPF).</p> <p>SciBX 7(2); doi:10.1038/scibx.2014.71 Published online Jan. 16, 2014</p>	Patent application filed; unlicensed	<p>Huang, S.X.L. <i>et al. Nat. Biotechnol.</i>; published online Dec. 1, 2013; doi:10.1038/nbt.2754</p> <p>Contact: Hans-Willem Snoeck, Columbia University Medical Center, New York, N.Y. e-mail: hs2680@columbia.edu</p>