This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Drug platforms			
Human embryonic stem cell (hESC)-derived NK cells for cancer immunotherapy	<p>A study in mice and in cell culture suggests that hESC-derived NK cells could be more effective than those derived from umbilical cord blood progenitor cells for cancer immunotherapy. In a panel of five cancer cell lines, hESC-derived NK cells had significantly higher cytolytic activity than those derived from umbilical cord blood progenitor cells ($p < 0.05$). In a mouse model of leukemia, a single i.v. infusion of hESC-derived NK cells showed significantly higher antitumor activity ($p < 0.01$) as well as a lower incidence of tumor metastasis than that seen in controls receiving umbilical cord blood-derived NK cells or no NK cells. Next steps include culturing hESC-derived NK cells to a scale suitable for use in humans and converting to GMP-compliant culture conditions.</p> <p>TBI-0301, donor lymphocytes engineered to express the human herpes simplex thymidine kinase suicide gene from MolMed S.p.A. and Takara Bio Inc., is in Phase III testing to treat leukemia.</p> <p>StemEx, an <i>ex vivo</i> expanded cord blood stem/progenitor cell product in combination with nonexpanded cells from the same cord blood unit from Gamida-Cell Ltd. and Teva Pharmaceutical Industries Ltd., is in Phase II/III testing for cancer.</p> <p>Bexidem, a monocyte-derived, autologous macrophage-activated killer cell product from IDM Pharma Inc., is in Phase II/III testing for bladder cancer.</p> <p>At least 11 other companies have cell-based cancer immunotherapies in Phase II or earlier.</p> <p>SciBX 2(17); doi:10.1038/scibx.2009.729 Published online April 30, 2009</p>	Work unpatented; licensing status not applicable	<p>Woll, P.S. <i>et al. Blood</i>; published online April 13, 2009; doi:10.1182/blood-2008-06-165225</p> <p>Contact: Dan S. Kaufman, University of Minnesota, Minneapolis, Minn. e-mail: kaufm020@umn.edu</p>