This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Drug platforms			
Chimeric Fc γ -receptor III (CD16; FCGR3)-expressing T cells to improve antibody-dependent cell cytotoxicity (ADCC)	<p>Mouse studies suggest T cells expressing a chimeric receptor that binds to antibody Fc regions could be used to treat various cancers when combined with antibody therapies. ADCC results from the engagement of Fc γ-receptors expressed on the surface of NK cells with the Fc regions of tumor cell-bound mAbs. T cells were engineered to express a chimeric receptor made up of an FCGR3 and intracellular domains from T cell signaling molecules CD3ζ and tumor necrosis factor receptor superfamily member 9 (TNFRSF9; 4-1BB; CD137). In a mouse model of B cell lymphoma, Rituxan rituximab followed by infusion of the engineered T cells resulted in remission in all 5 mice, whereas none of 12 mice receiving engineered T cells or Rituxan alone survived. Similar results occurred in mice bearing neuroblastoma tumors that received a GD2-targeting mAb followed by the engineered T cells. Next steps include clinical trials.</p> <p>Rituxan/MabThera, an antibody against CD20 from Biogen Idec Inc. and the Genentech Inc. unit of Roche, is marketed for a variety of autoimmune diseases and hematological cancers.</p> <p>SciBX 6(47); doi:10.1038/scibx.2013.1367 Published online Dec. 12, 2013</p>	Patent application filed; available for licensing from the National University of Singapore and St. Jude Children's Research Hospital	<p>Kudo, K. <i>et al. Cancer Res.</i>; published online Nov. 6, 2013; doi:10.1158/0008-5472.CAN-13-1365 Contact: Dario Campana, National University of Singapore, Singapore e-mail: paedc@nus.edu.sg</p>