This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Assays & screens			
Strategy to decrease off-target peptide recognition by affinity-enhanced, T cell receptor (TCR)-based T cell therapies	<p>Amino acid scanning and cell culture screens could be used to decrease the risk of off-target toxicity from TCR-based T cell therapies to treat cancer. Clinical use of T cells engineered to express affinity-enhanced TCRs targeting melanoma-associated antigen A3 (MAGEA3) led to two patients dying of cardiac failure. An <i>in silico</i> scan of non-MAGEA3 protein sequences identified three proteins containing a peptide motif that could be recognized by the TCRs targeting MAGEA3. In cell lines individually pulsed with each of the three non-MAGEA3 peptides, only the cells pulsed with a peptide derived from the muscle protein titin (TTN) induced activation of MAGEA3-targeting T cells. In 3D beating cultures of iCell cardiomyocytes and in five independent human cardiac tissue samples, titin expression was confirmed, suggesting the off-target clinical toxicity was a result of the T cells targeting titin. Next steps include using the strategy to avoid future off-target toxicities. iCells are marketed by Cellular Dynamics International Inc.</p> <p>SciBX 6(33); doi:10.1038/scibx.2013.905 Published online Aug. 29, 2013</p>	Unpatented; licensing status not applicable	<p>Cameron, B.J. <i>et al. Sci. Transl. Med.</i>; published online Aug. 7, 2013; doi:10.1126/scitranslmed.3006034 Contact: Bent K. Jakobsen, Immunocore Ltd., Abingdon, U.K. e-mail: bent.jakobsen@immunocore.com</p>