This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Chemistry			
Synthetic low molecular weight heparins (LMWHs) with reversible and high anticoagulation activity	<p>Synthetic LMWHs that have low production costs and high sensitivity to the heparin antidote protamine could be useful for treating thrombosis with enhanced safety and reduced cost. Current LMWH used to treat and prevent thrombosis has issues including impurities, partial reversibility and high production costs. A chemoenzymatic approach was used to synthesize a series of LMWHs with varying numbers of iduronic acid or glucuronic acid sugar units plus glucosamine and different sulfation patterns. In mice, the lead LMWH had anticoagulant activity and showed liver clearance rates and protamine sensitivity that were comparable to or higher than those for marketed heparin products. Next steps include decreasing the number of synthetic steps and improving the production of various enzymes and cofactors used to synthesize the LMWH.</p> <p>SciBX 7(12); doi:10.1038/scibx.2014.356 Published online March 27, 2014</p>	Provisional patent application filed; licensing discussions under way with an undisclosed company	<p>Xu, Y. <i>et al. Nat. Chem. Biol.</i>; published online Feb. 23, 2014; doi:10.1038/nchembio.1459 Contact: Jian Liu, UNC Eshelman School of Pharmacy, Chapel Hill, N.C. e-mail: jian_liu@unc.edu Contact: Robert J. Linhardt, Rensselaer Polytechnic Institute, Rochester, N.Y. e-mail: linhar@rpi.edu</p>