This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Drug delivery			
Orally delivered small interfering RNA	<p>A β1,3-D-glucan-encapsulated oral delivery vehicle could be a useful tool for delivering siRNA to macrophages and other target cells. In empty β1,3-D-glucan shells, anionic siRNA is bound between cationic polyethylenimine layers to produce glucan-encapsulated siRNA particles (GeRPs). Upon phagocytosis of GeRPs by macrophages, the acidic pH in phagosomes promotes target-specific release of siRNA through the porous GeRP wall. In mice, oral delivery of GeRPs containing <i>mitogen-activated protein kinase kinase kinase 4</i> (<i>Map4k4</i>) siRNA protected the mice from lipopolysaccharide-induced death and inhibited inflammatory cytokines compared with mice that received GeRPs containing scrambled control siRNA. <i>In vivo</i> potency was up to 250 times greater than that of systemically delivered siRNAs. Next steps include further studies to optimize and standardize the preparations and formulations of the delivery vehicle.</p> <p>SciBX 2(20); doi:10.1038/scibx.2009.850 Published online May 21, 2009</p>	<p>Patent application filed for technology related to glucan shells and their ability to encapsulate and deliver various materials within them; available for licensing; patent application filed for targeting MAP4K4 to attenuate systemic inflammation; exclusively licensed to RXi Pharmaceuticals Corp.</p>	<p>Aouadi, M. <i>et al. Nature</i>; published online April 29, 2009; doi:10.1038/nature07774 Contact: Michael Czech, University of Massachusetts Medical School, Worcester, Mass. e-mail: michael.czech@umassmed.edu</p>