

This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Imaging			
High-density lipoprotein (HDL)-mimicking nanoparticles to detect vulnerable atherosclerotic plaques	<p><i>In vitro</i> and rat studies identified synthetic, HDL-mimicking nanoparticles that could help detect vulnerable atherosclerotic plaques, which can rupture and cause fatal blood clots. The nanoparticles consist of a poly(lactic-co-glycolic acid) (PLGA) core, cholesteryl oleate and quantum dots plus a phospholipid bilayer containing an apolipoprotein A-1 (APOA1) mimetic and triphenylphosphonium. The nanoparticles accumulated in healthy macrophages but not in apoptotic macrophages, which creates a contrast between the two populations during fluorescence imaging. Apoptotic macrophages are associated with vulnerable atherosclerotic plaques. In rats, the nanoparticles also decreased total cholesterol and triglyceride levels compared with vehicle, which suggests a potential therapeutic benefit. Next steps include testing the nanoparticles in animal models for atherosclerosis.</p> <p>SciBX 6(22); doi:10.1038/scibx.2013.561 Published online June 6, 2013</p>	Patented; available for licensing	<p>Marrache, S. & Dhar, S. <i>Proc. Natl. Acad. Sci. USA</i>; published online May 13, 2013; doi:10.1073/pnas.1301929110</p> <p>Contact: Shanta Dhar, The University of Georgia, Athens, Ga. e-mail: shanta@uga.edu</p>