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THE DISTILLERY

This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Drug platforms			
Modulation of mammalian target of rapamycin (mTOR; FRAP; RAFT1) expression to control human embryonic stem cell (hESC) differentiation and pluripotency	*In vitro* studies suggest that mTOR is necessary for proliferation of undifferentiated hESCs, which could lead to new strategies for tissue regeneration and repair. In hESCs, the mTOR inhibitor Rapamune rapamycin suppressed expression of cyclin G2 and programmed cell death 4 (neoplastic transformation inhibitor) (PDCD4), which promoted proliferation while also keeping the cells in an undifferentiated state. Next steps include determining whether the results can be replicated in human induced pluripotent stem cells. Wyeth markets Rapamune to prevent organ transplant rejection. At least 10 companies have mTOR inhibitors in development stages ranging from preclinical to marketed for various indications.	Methods for modulating stem cell pluripotency and differentiation patented by the University of Illinois; available for licensing	Zhou, J. *et al. Proc. Natl. Acad. Sci. USA*; published online April 27, 2009; doi:10.1073/pnas.0901854106 **Contact:** Fei Wang, University of Illinois at Urbana-Champaign, Urbana, Ill. e-mail: feiwang@life.uiuc.edu

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