

### This week in techniques

Approach	Summary	Licensing status	Publication and contact information
<b>Disease models</b>			
<i>In vitro</i> generation of photoreceptors from human embryonic stem cells (hESCs)	Rod and cone photoreceptors were generated <i>in vitro</i> from mouse, monkey and human ESCs without the need for retinal tissue, an approach that might be useful for developing better transplant therapies or constructing cellular models of the eye. In the presence of fibroblast growth factor (FGF), retinoic acid, Shh and taurine, the murine ES-derived retinal progenitor cells were induced to differentiate into photoreceptor precursor cells that ultimately differentiated into rod and cone photoreceptors. A similar differentiation process was induced in serum-free suspension cultures of monkey and human ESCs in combination with Wnt and Nodal inhibitors. The authors think the technique could facilitate allograft transplantation experiments in monkeys with ESC-derived photoreceptors. Advanced Cell Technology Inc. has a preclinical program that uses retinal pigment epithelium to treat age-related macular degeneration.	International patent application submitted covering a method for differentiating embryonic stem cells into retinal precursors in uncontaminated cultures; licensing status undisclosed	Osakada, F. <i>et al. Nat. Biotechnol.</i> ; published online Feb. 3, 2008; doi:10.1038/nbt1384 <b>Contact:</b> Masayo Takahashi, Center for Developmental Biology, RIKEN, Chuo-ku, Kobe, Japan e-mail: <a href="mailto:mretina@cdb.riken.jp">mretina@cdb.riken.jp</a>