

### This week in techniques

| Approach                                                                                           | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Licensing status                                                                                                                                              | Publication and contact information                                                                                                                                                                                                                                             |
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| <b>Drug platforms</b>                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                               |                                                                                                                                                                                                                                                                                 |
| Fibroblast-derived induced oligodendrocyte progenitor cells (iOPCs) to treat myelination disorders | Two separate studies developed methods to reprogram mouse fibroblasts into iOPCs and suggested they could be used to help treat diseases with myelination dysfunction such as multiple sclerosis (MS). In the first study, transduction of the transcription factors SRY-box containing gene 10 (Sox10), oligodendrocyte transcription factor 2 (Olig2) and NK6 homeobox 2 (Nkx6-2) in mouse fibroblasts generated iOPCs that could be differentiated into oligodendrocytes. Coculturing brain slices from mice lacking myelin basic protein (Mbp) with the iOPCs caused axon myelination. In mice lacking Mbp, spinal cord injection of iOPCs led to axon myelination. In the second study, transduction of mouse or rat fibroblasts with the transcription factors Sox10, Olig2 and zinc finger protein 536 (Zfp536) also generated iOPCs that could be differentiated into oligodendrocytes. Transplantation of iOPCs to the brain led to axon myelination in Mbp-deficient mice. Next steps include using the technology on human cells to generate patient-specific iOPCs and improving the reprogramming process to increase the number of induced cells. | Patent application filed by the Myelin Repair Foundation and assigned to Case Western Reserve University for findings in first study; available for licensing | Najm, F.J. <i>et al. Nat. Biotechnol.</i> ; published online April 14, 2013; doi:10.1038/nbt.2561<br><b>Contact:</b> Paul J. Tesar, Case Western Reserve University School of Medicine, Cleveland, Ohio<br>e-mail: <a href="mailto:paul.tesar@case.edu">paul.tesar@case.edu</a> |
|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Patent application filed for findings in second study; licensing status unavailable                                                                           | Yang, N. <i>et al. Nat. Biotechnol.</i> ; published online April 14, 2013; doi:10.1038/nbt.2564<br><b>Contact:</b> Marius Wernig, Stanford University School of Medicine, Stanford, Calif.<br>e-mail: <a href="mailto:wernig@stanford.edu">wernig@stanford.edu</a>              |
|                                                                                                    | <b>SciBX 6(17); doi:10.1038/scibx.2013.426</b><br>Published online May 2, 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                               |                                                                                                                                                                                                                                                                                 |