Myelination of neuronal axons by oligodendrocytes in cocultures of primary rat oligodendrocyte precursor cells with primary rat embryonic dorsal root ganglion neurons. Myelination plays a key role in increasing nerve conduction velocity by insulating axons as well as in protecting axons from physical and biological stresses. Red staining indicates mature myelin sheath positive for a myelin marker protein, myelin basic protein (MBP), along axons (green). Each oligodendrocyte has a number of finger-like processes, which undergo morphological changes and finally produce MBP-positive myelin sheaths to wrap axons. Knockdown of small GTPase Rab35 by retrovirus-encoded small hairpin RNA enhances myelination. Thus Rab35 is a negative regulator for myelination. This coculture system provides a good tool for investigating myelination processes under conditions close to those in vivo. See the article by Miyamoto et al. on p. 1532 of the May 1, 2014, issue of MBoC. (Image: Yuki Miyamoto and Junji Yamauchi, National Research Institute for Child Health and Development)