

This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Neurology				
Parkinson's disease (PD)	Nuclear factor (erythroid-derived 2)-like 2 (NFE2L2); NRF2; heme oxygenase decycling 1 (HMOX1; HO-1; Hsp32)	<p><i>In vitro</i> and mouse studies identified NRF2 pathway activators that could help treat PD. Chemical synthesis and testing of vinyl sulfone analogs in a mouse cell-based assay identified a lead compound that increased expression of the Nrf2 target gene <i>Hmox1</i> compared with vehicle. In mouse dopaminergic neurons, the compound increased levels of Nrf2, Hmox1 and other antioxidant proteins in the Nrf2 pathway compared with vehicle. In a mouse model of chemically induced PD, the compound decreased dopaminergic neuron loss and motor function deficits compared with vehicle. Ongoing work includes optimization of the lead compound.</p> <p>Biogen Idec Inc. markets the NRF2 pathway activator Tecfidera dimethyl fumarate to treat multiple sclerosis (MS).</p> <p>XenoPort Inc.'s XP23829, an oral prodrug of monomethyl fumarate (MMF) that induces and activates the NRF2 pathway, is in Phase I trials to treat MS.</p> <p>SciBX 7(7); doi:10.1038/scibx.2014.205 Published online Feb. 20, 2014</p>	Patented by the Korea Institute of Science and Technology and the University of Ulsan; available for licensing	<p>Woo, S.Y. <i>et al. J. Med. Chem.</i>; published online Jan. 27, 2014; doi:10.1021/jm401788m Contact: Ki Duk Park, Korea Institute of Science and Technology, Seoul, South Korea e-mail: kdpark@kist.re.kr Contact: Onyou Hwang, University of Ulsan College of Medicine, Seoul, South Korea e-mail: oyhwang@amc.seoul.kr</p>