Synthesis of Maxipost

Significance: Maxipost is a post-stroke neuroprotective agent that acts by opening large conductance Ca$^{2+}$-activated (maxi-K) potassium channels. Previous syntheses of maxipost by asymmetric fluorination of oxindoles required protection of the oxindole nitrogen as the N-Boc derivative. The route depicted features the direct asymmetric catalytic fluorination of the oxindole using N-fluorobenzensulfonimide in the presence of 10 mol% of a chiral complex derived from scandium triflate and the amine oxide ligand.

Comment: Attempts to perform the maxipost synthesis on a 3.5 mmol scale resulted in decreased yield and enantioslectivity (53% yield, 86% ee) due to the low solubility of the substrate. By contrast, the asymmetric fluorination of oxindole on a 4.0 mmol scale gave in 93% yield and 97% ee. The small selection of the 29 examples described, showed that yields and enantioselectivities are generally high.