Synthesis of LY2886721

**Significance:** LY2886721 is a BACE inhibitor that is of interest for the treatment of Alzheimer’s disease. In the key intramolecular dipolar cycloaddition, nitrone \((Z)-E\) underwent kinetic selection to afford a mixture of cycloadducts \((\text{dr} = 6:1)\) from which the desired isoxazolidine \(F\) was isolated in 55% yield by crystallization.

**Comment:** Minimizing formation of a desfluoro impurity during hydrogenolysis of the isoxazolidine ring and removal of the benzyl chiral auxiliary \((H \rightarrow I)\) was a key challenge. The final acylation occurred without competing acylation of the aminothiazine nitrogen to afford LY2886721 in 17% overall yield on a multi-kilogram scale.