N. A. STROTMAN ET AL. (BRISTOL-MYERS SQUIBB, NEW BRUNSWICK, USA)
Enantioselective Synthesis of a γ-Secretase Modulator via Vinylogous Dynamic Kinetic Resolution
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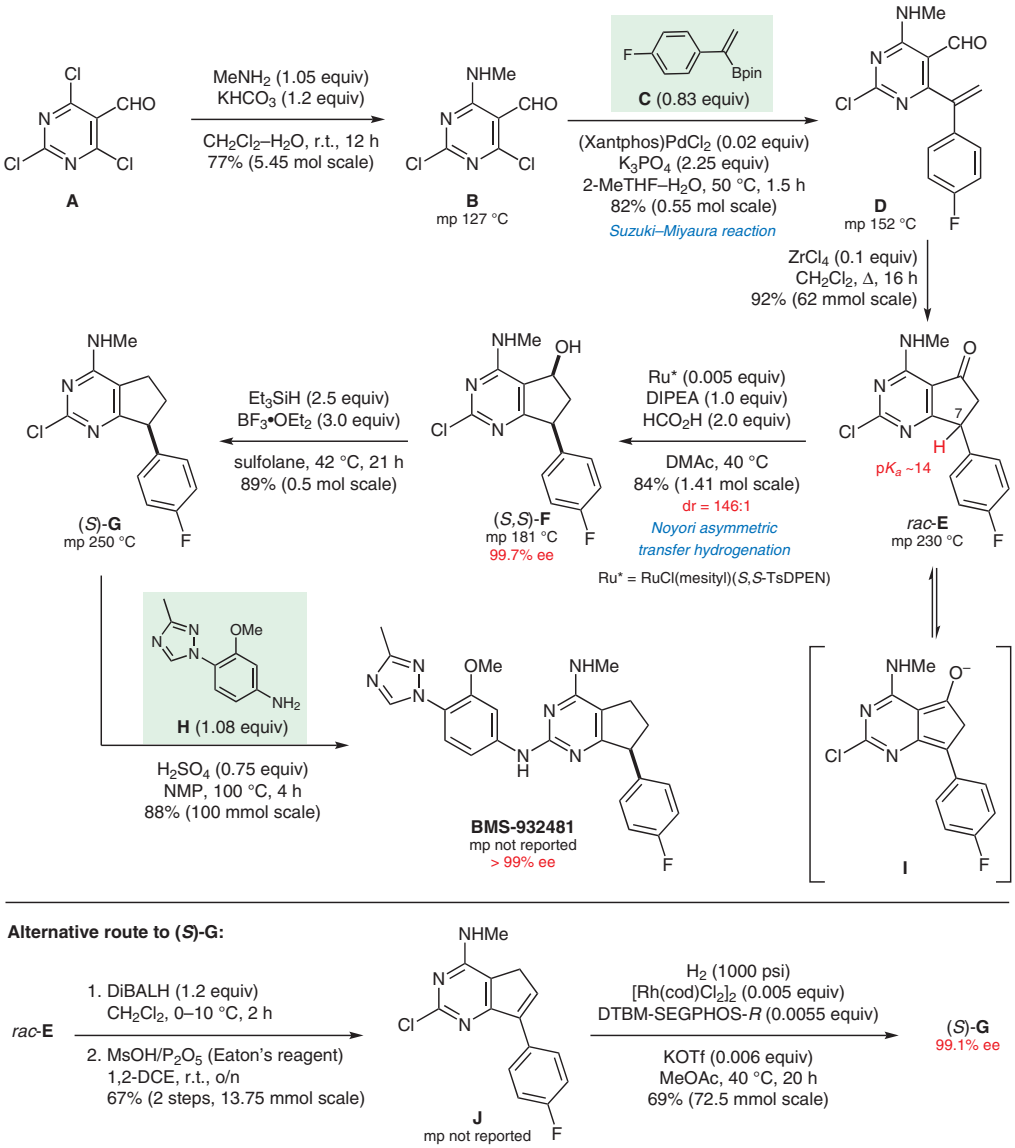
Synthesis of BMS-932481



Significance: BMS-932481 is a γ-secretase modulator that is of interest for the treatment of Alzheimer's disease. A six-step synthesis of BMS-932481 based on a vinylogous dynamic kinetic resolution (VDKR) of *rac*-**E** delivered the target molecule in 38% overall yield and >99% ee. The VDKR was a consequence of rapid epimerization via dienolate **I**.

Comment: An alternative seven-step synthesis of BMS-932481 based on a rhodium-catalyzed asymmetric hydrogenation of the alkene **J** proceeded in 16.3% overall yield and >99% ee. The high pressure of hydrogen required (1000 psi) and the expense of the rhodium catalyst were disadvantageous to this route.

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Category
Synthesis of Natural Products and Potential Drugs

Key words
BMS-932481
γ-secretase modulator
vinylogous dynamic kinetic resolution
asymmetric hydrogenation
Noyori asymmetric transfer hydrogenation
intramolecular hydroacylation