Category

Synthesis of Natural Products and Potential Drugs

Key words

GDC-0068

serine/threonine kinase

Akt inhibitor

Favorskii ring contraction

Noyori asymmetric transfer hydrogenation

pyrimidine *N*-oxide rearrangement

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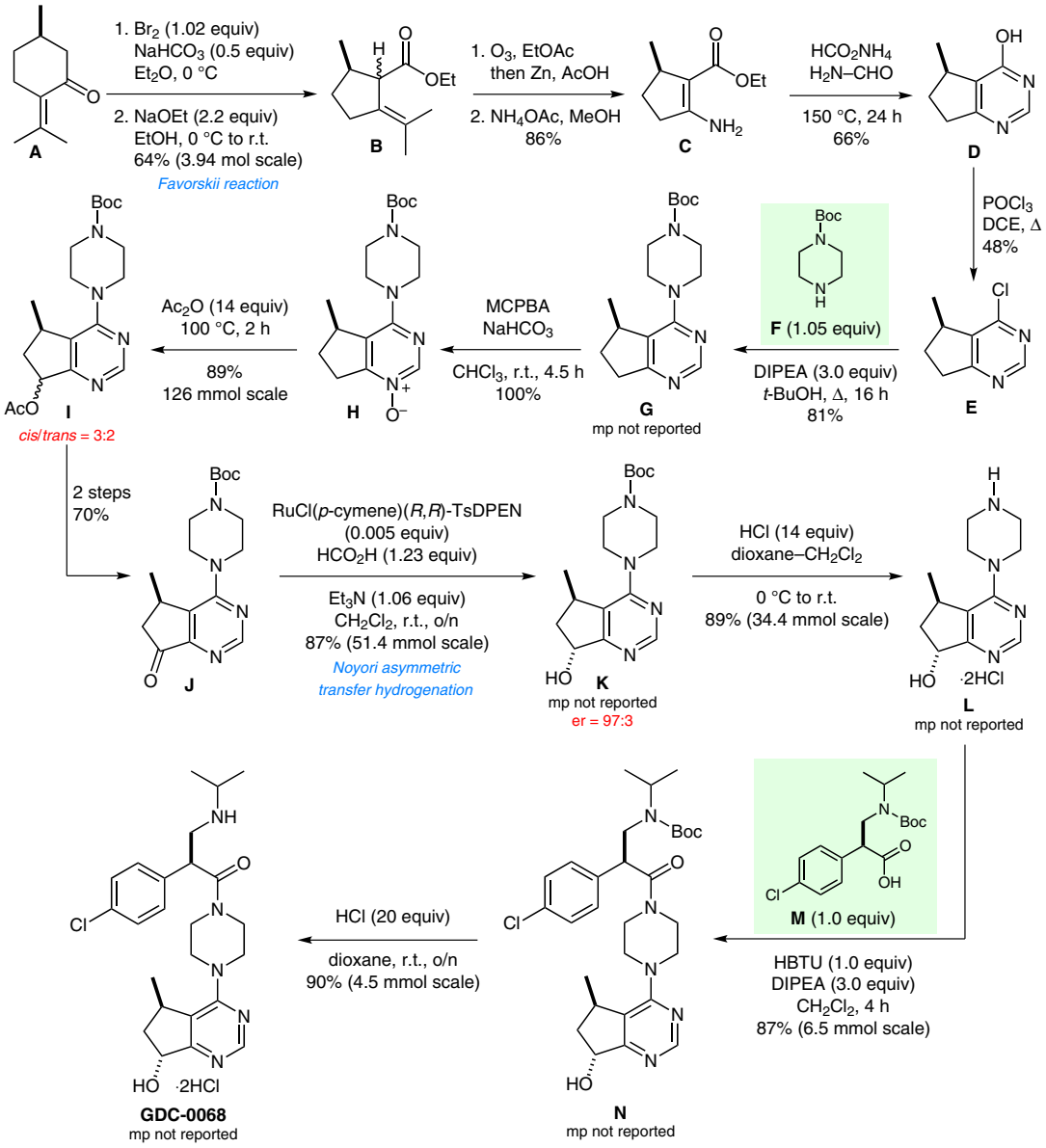
Discovery and Preclinical Pharmacology of a Selective ATP-Competitive Akt Inhibitor (GDC-0068) for the Treatment of Human Tumors

J. Med. Chem. **2012**, *55*, 8110–8127.

Synthesis of Akt Inhibitor GDC-0068



Significance: Akt is a kinase that controls cellular processes by phosphorylating substrates involved in apoptosis, transcription, cell cycle progression and translation. GDC-0068 is an Akt inhibitor that is in clinical trials for the treatment of cancer.

Comment: Key steps in the synthesis depicted are (1) the use of a Favorskii ring contraction in the conversion of (*R*)-pulegone (**A**) to the ester **B** and (2) the Noyori asymmetric transfer hydrogenation of ketone **J**.

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