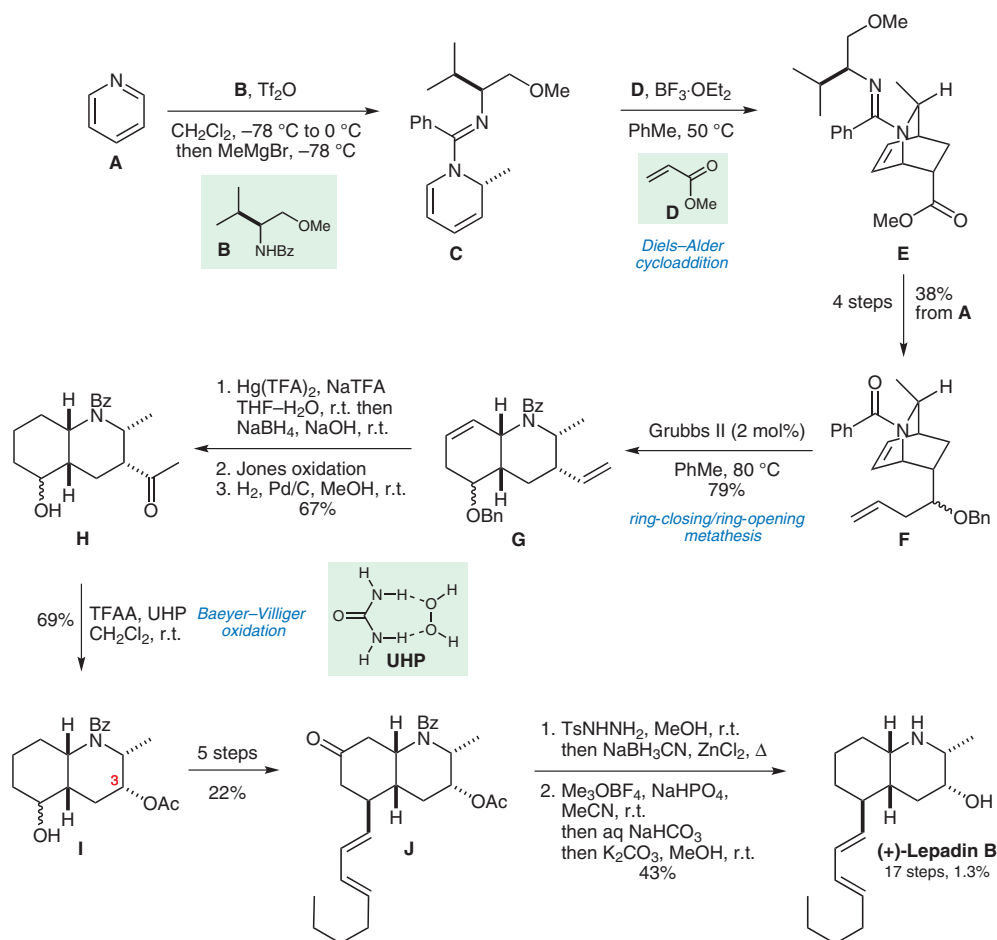


# Synthesis of (+)-Lepadin B



**Significance:** Lepadin B was isolated from the tunicate *Clavelina lepadiformis*. It is a potent blocker of neuronal nicotinic acetylcholine receptors which are involved in disorders such as Alzheimer's and Parkinson's diseases and nicotine addiction. The Barbe–Charette synthesis hinges on a ring-closing/ring-opening metathesis sequence to form the *cis*-fused decahydroquinoline core.

**Comment:** The synthesis commenced with a Diels–Alder reaction between a dearomatized pyridine and methyl acrylate installing four new stereocenters stereoselectively. Close investigation of the metathesis sequence revealed that it proceeded by a ring-closing/ring-opening pathway. A Baeyer–Villiger oxidation was used to introduce the oxygen at C3 in **I**.