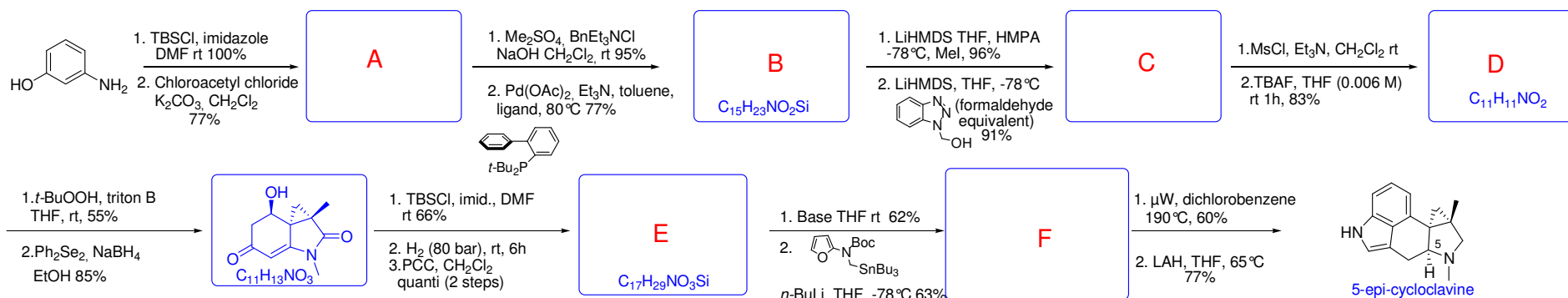


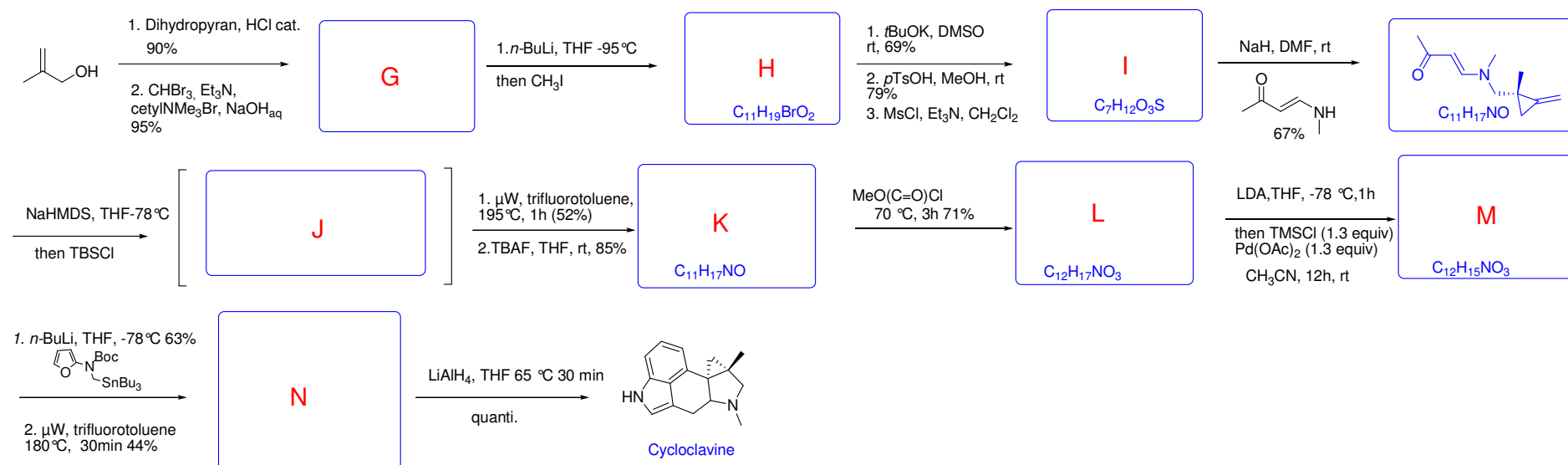
Syntheses of Cycloclavine (answers)

Cycloclavine is an ergot alkaloids which was first isolated from the African morning glory (*Ipomea hildebrandtii*) in 1969 by Hoffman and co-workers. Although no biological properties were reported, a psychotropic activity cannot be ruled out due to its structure. Here are described two approaches of the synthesis of cycloclavine. A first approach unfortunately led to the 5-epicycloclavine whereas a second more successful strategy based essentially on cycloaddition led to the (+/-) cycloclavine. Find the missing A-N intermediate structures.

1st generation synthesis: Synthesis of (+/-) 5-epi-Cycloclavine

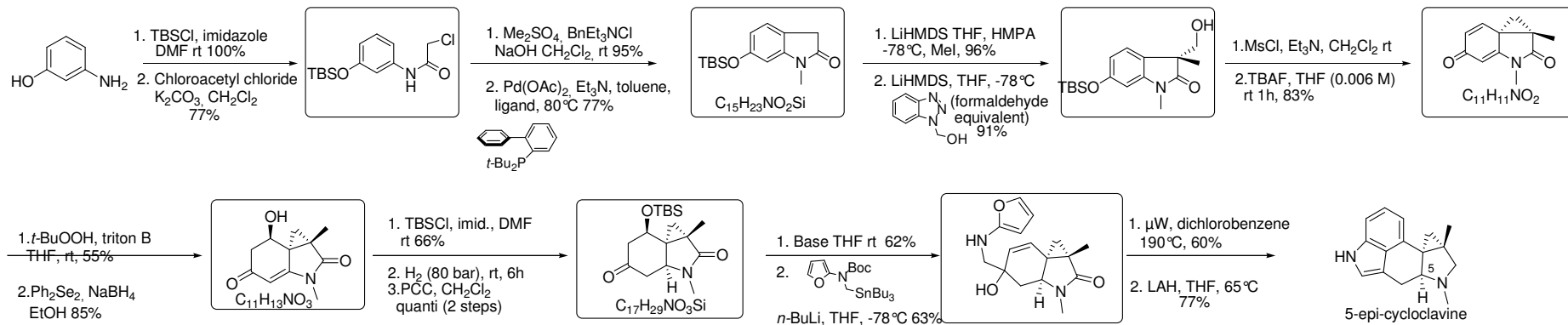


2nd generation synthesis: Synthesis of (+/-)Cycloclavine

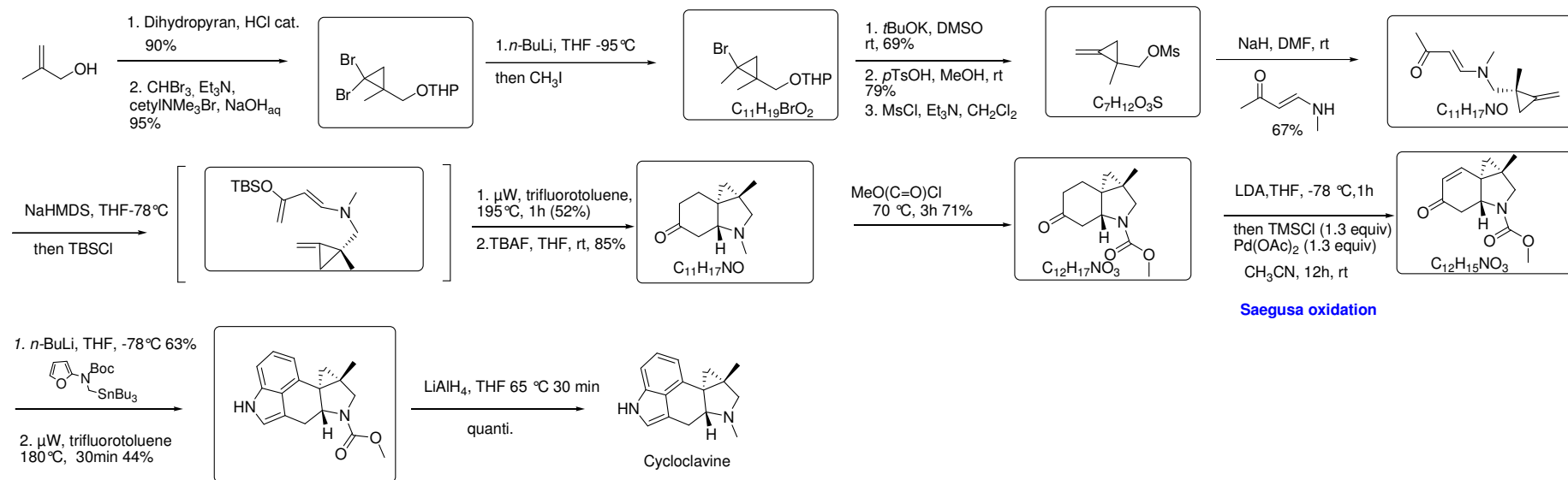


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Synthesis of (+/-) 5epi-Cycloclavine



Synthesis of (+/-)Cycloclavine



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