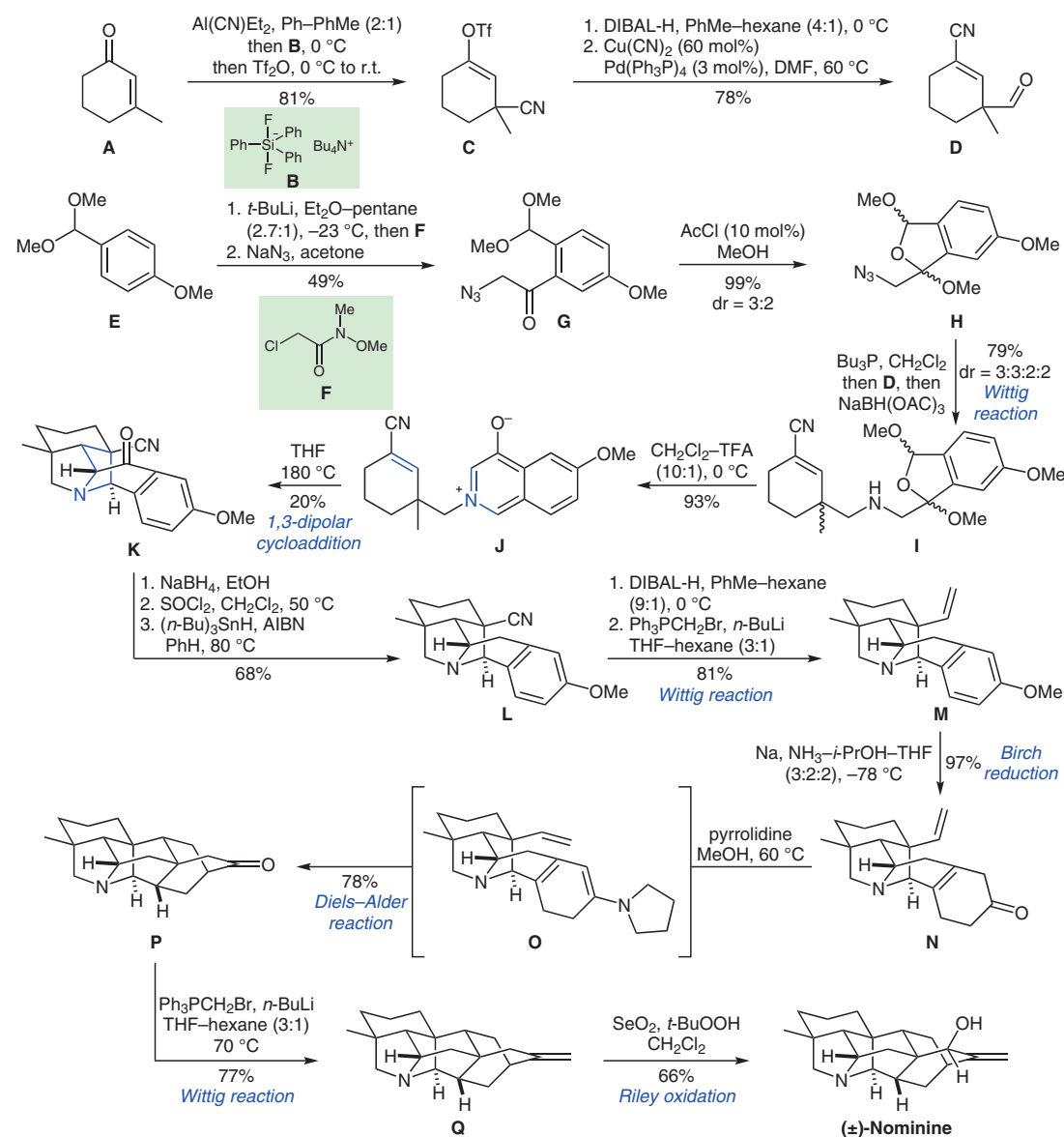


## Synthesis of (±)-Nominine



**Significance:** In 2006, Gin and co-workers reported a total synthesis of the diterpenoid alkaloid (±)-nominine. Key to their approach is a 1,3-dipolar cycloaddition to construct the pyrrolidine ring and a Diels–Alder reaction to construct the bicyclo-[2.2.2]octane of the natural product.

**Comment:** The 1,3-dipolar cycloaddition reaction to pyrrolidine **K** demonstrates a 20% yield due to the emergence of an isomeric side product. This side product can undergo thermal re-equilibration to eventually yield the desired isomer **K**, thus minimizing loss of material.