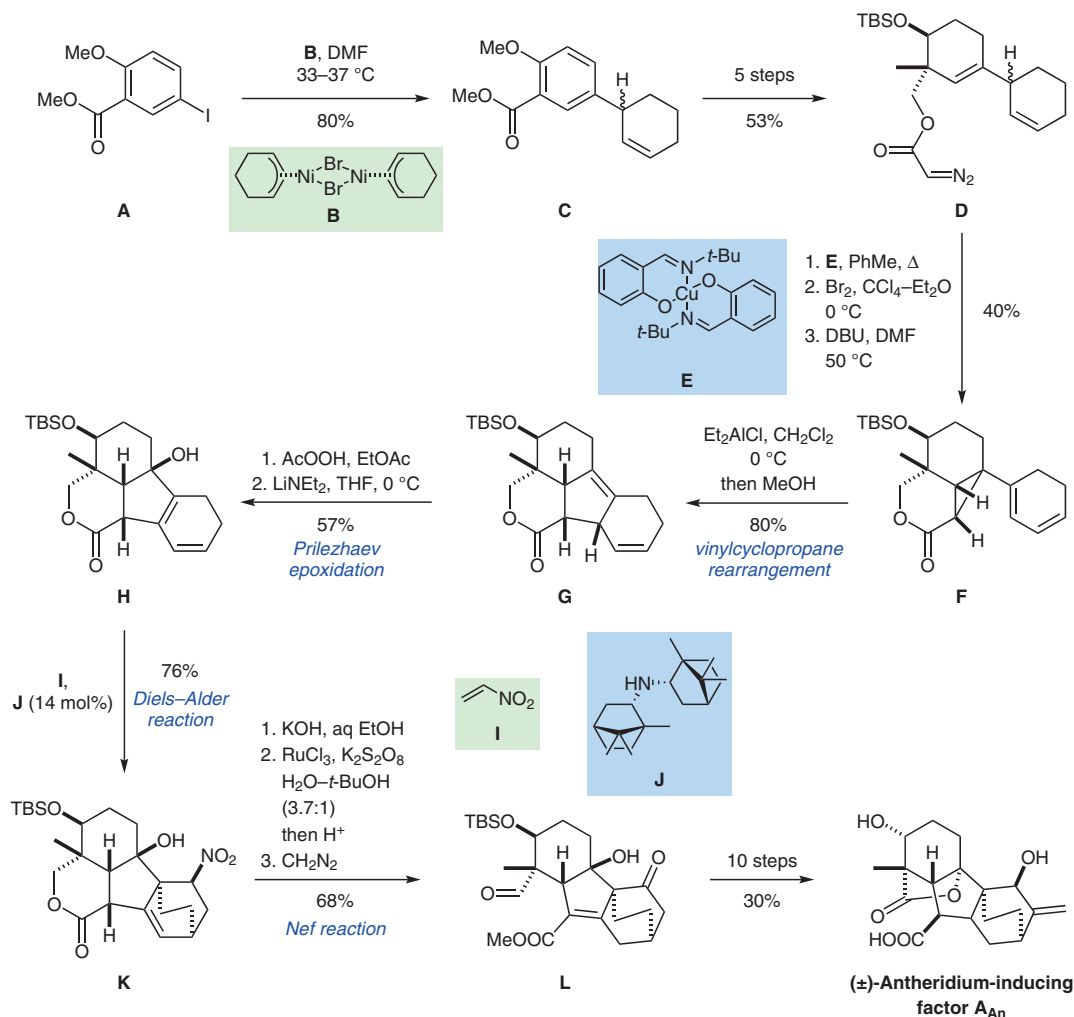


Total Synthesis of (±)-Antheridium-Inducing Factor  $A_{An}$ 

**Significance:** Corey and Myers reported the total synthesis and structural revision of (±)-antheridium-inducing factor  $A_{An}$ . The natural product is a plant hormone which stimulates development of sex organs in some ferns. Their synthetic strategy centers around an intramolecular cyclopropanation reaction mediated by copper complex **E**, a Lewis acid promoted vinylcyclopropane rearrangement and a Diels–Alder reaction with nitroethene (**I**) to access the core of the natural product.

**Comment:** The synthesis commenced with allylation of aryl iodide **A** and nickel complex **B**. Intramolecular cyclopropanation of diazo **D** mediated by copper complex **E** followed by bromination and elimination furnished diene **F**. Treatment with diethyl aluminum chloride initiated vinylcyclopropane rearrangement to skipped diene **G**. Diene **H**, accessed through epoxidation and elimination of **G**, underwent Diels–Alder reaction with nitroethene (**I**) to nitroalkane **K**, which was subsequently converted into ketone **L**.