Stereo-Controlled Synthesis of Prostaglandins F\textsubscript{2\alpha} and E\textsubscript{2} (dl)


Comment: Bicycloheptane D was accessed through Diels–Alder reaction between diene B and C. Subsequent Baeyer–Villiger oxidation followed by hydrolysis and iodolactonization furnished lactone G, which was transformed into the natural products by a sequence involving two olefinations.

Significance: In 1969, Corey and co-workers reported a landmark total synthesis of prostaglandins PGF\textsubscript{2\alpha} and PGE\textsubscript{2} which play an important role as hormones in mammalian tissue. Strategic application of a [2,2.1]-bicycloheptane enabled expedient access to the highly substituted cyclopentane core.