Category

Synthesis of Natural Products and Potential Drugs

Key words

isochrysohermidin

2-oxo-3-pyrroline dimer

inverse electrondemand Diels–Alder reaction

¹O₂ cycloaddition



D. L. BOGER*, C. M. BALDINO (THE SCRIPPS RESEARCH INSTITUTE, LA JOLLA, USA) d,l- and meso-lsochrysohermidin: Total Synthesis and Interstrand DNA Cross-Linking J. Am. Chem. Soc. 1993, 115, 11418–11425.

Total Synthesis of Isochrysohermidin

Significance: In 1993, Boger and Baldino described a concise synthesis of isochrysohermidin, a 2-oxo-3-pyrroline dimer first isolated from *Mercuralis leiocarpa*. Through their synthetic efforts, they were able to show the interstrand DNA cross-linking capabilities of isochrysohermidin.

Comment: C is accessed from **A** by an inverseelectron-demand Diels–Alder cycloaddition with **B** and is further elaborated to **D** by reductive ring contraction. *meso*- and *d*,*l*-isochrysohermidin are obtained by a singlet oxygen cycloaddition, followed by in situ decarboxylation.

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