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Design and Stereoselective Preparation of a New Class of Chiral Olefin Metathesis Catalysts and Application to
Enantioselective Synthesis of Quebrachamine: Catalyst Development Inspired by Natural Product Synthesis
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Synthesis of (+)-Quebrachamine

Significance: Quebrachamine is an *Aspidosperma* alkaloid that is an adrenergic blocker. This synthesis is noteworthy for the highly enantioselective ring-closing cross-metathesis (**G** → **I**) using a chiral molybdenum catalyst which is stereogenic at the metal center.

Comment: The catalyst **H** was made by a diastereoselective desymmetrization (*dr* = 7:1) of a Mo bispyrrolide precursor with one equivalent of monosilyl-protected octahydrobinaphthol in benzene at room temperature. No improvement on the impressive enantiomeric ratio was seen when diastereoisomerically pure **H** was used.

Category

Synthesis of Natural
Products and
Potential Drugs

Key words

quebrachamine

enantioselective
ring-closing
metathesis

chiral molybdenum
catalysts

SYNFACT
of the month

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