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Iridium-Catalyzed Enantioselective Polyene Cyclization


Mimicking Nature: Enantioselective Cationic Polyene Cyclization


Comment: The authors report the development of a highly enantioselective polycyclization method using the combination of Lewis acid activation with iridium-catalyzed allylic substitution. This strategy relies on direct use of branched, racemic allylic alcohols and furnishes a diverse and unique set of carbo- and heteropolycyclic ring systems in good yield and ≥99% ee.

Selected examples:

- 90% yield >99.5% ee
- 89% yield 99.5% ee
- 71% yield 99% ee
- 90% yield >99.5% ee

Tricyclization:

43% + 24% (via unreacted intermediate) >99.5% ee

gonane-type skeleton