Enantioselective Synthesis of \([9\)- and \([11\)-Helicene-Like Molecules: Double Intramolecular \([2+2+2\] Cycloaddition


**Significance:** Higher order helicene-like molecules are difficult to synthesize enantioselectively due to steric constraints. The authors report the enantioselective synthesis of \([9\)- and \([11\)-helicene-like molecules \(4\) and \(6\) via double intramolecular \([2+2+2\] cycloaddition of hexalynes, catalyzed by a cationic rhodium/chiral bis(phosphine) complex. Notably, molecules \(4\) and \(6\) both contain completely ortho-fused ring systems.

**Comment:** The authors report that the second cycloaddition is difficult to achieve because it proceeds through the highly sterically encumbered intermediate \(3\). The diastereoselective synthesis of an \([11\)-helicene-like molecule was reported previously (P. Sehnal et al. Proc. Natl. Acad. Sci. 2009, 106, 13169), but the reported molecule contained three para-fused rings.