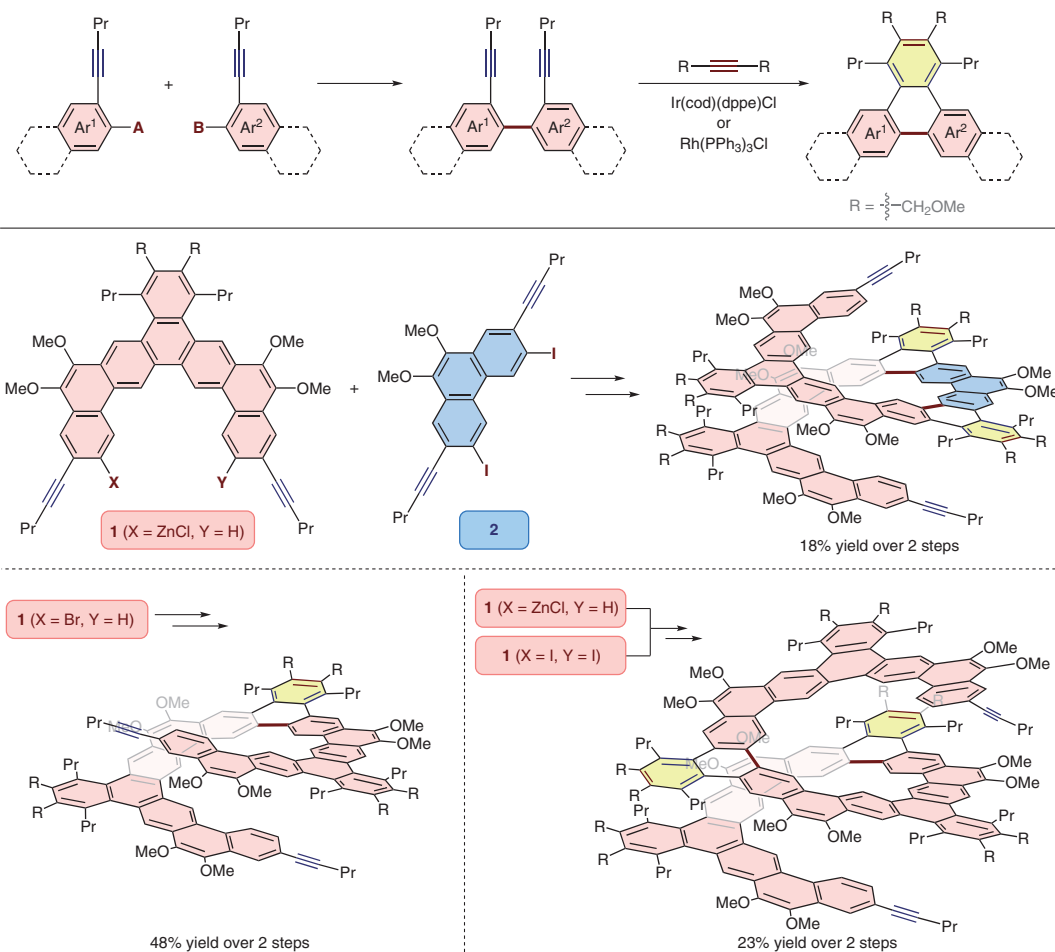


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Expanded [23]-Helicene with Exceptional Chiroptical Properties via an Iterative Ring-Fusion Strategy

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Expanded [23]-Helicene



Significance: Large helical structures are unique and sometimes irreplaceable molecular scaffolds serving special functions. By combining linear and angular ring-fusion modules, a set of expanded helicenes are designed and synthesized via convenient procedures, demonstrating extraordinary chiroptical properties reaching into the visible range.

Comment: The key step to attaining the large helicenes first requires the assembly of polyaryl precursors comprising one or more 2,2'-diethynyl-biphenyl moieties. Then, iridium- or rhodium-catalyzed [2+2+2] reactions are performed to accomplish helicenes composed of 15, 19, and 23 rings in the circuit.

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Category

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chiroptical
properties
[2+2+2] reaction

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