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Synthesis of a Highly Aromatic and Planar Dehydro[10]annulene Derivative
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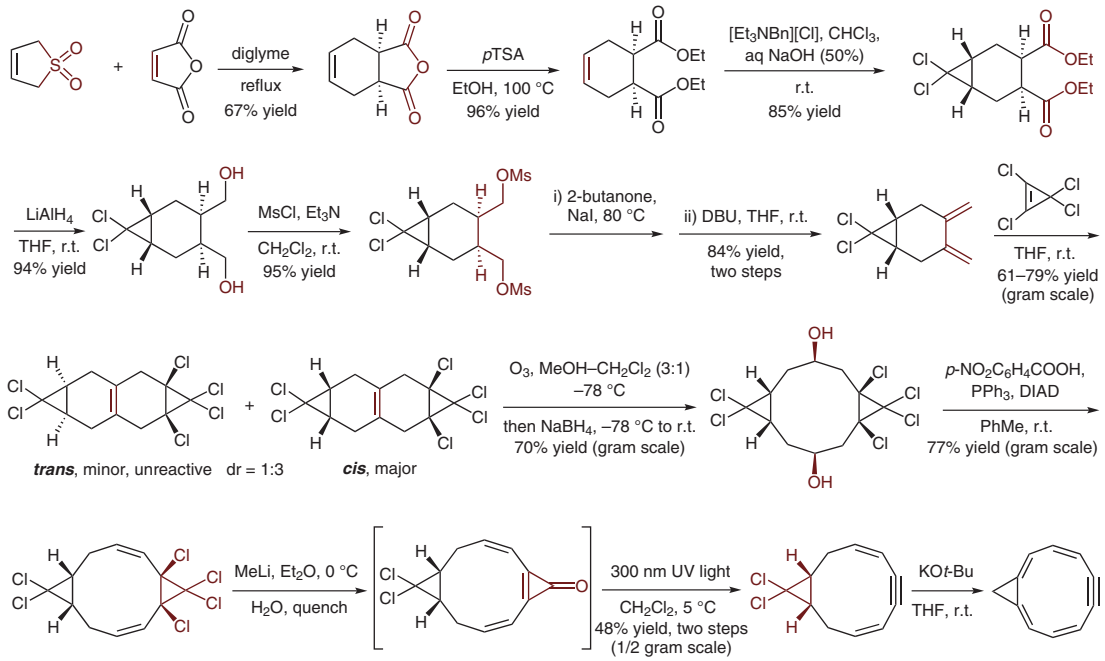
Cyclopropane-fused Dehydro[10]annulene



Significance: Large aromatic annulenes and their derivatives are attractive structures, for both their aromatic properties and synthetic challenges. Unlike the non-planar and non-aromatic [10]annulene, a planar and stable aromatic dehydro[10]annulene fused with a cyclopropane is accomplished here, showing both thermodynamic and kinetic stability. The designed synthetic strategy is noteworthy for the involvement of a strained aromatic system and an *endo*-to-*exo* cyclopropane isomerization process.

Comment: The experimental ^{1}H NMR spectrum of the purified product offers supportive evidence for the structure of dehydro[10]annulene. The presence of fused cyclopropane, which is important to the planarity of the annulene ring, is suggested not to interfere with the aromaticity. The final product of dehydro[10]annulene derivative is noted to be persisting for months at –20 °C and for weeks at room temperature without noticeable degradation.

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Category
Synthesis of Materials and Unnatural Products

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aromaticity
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