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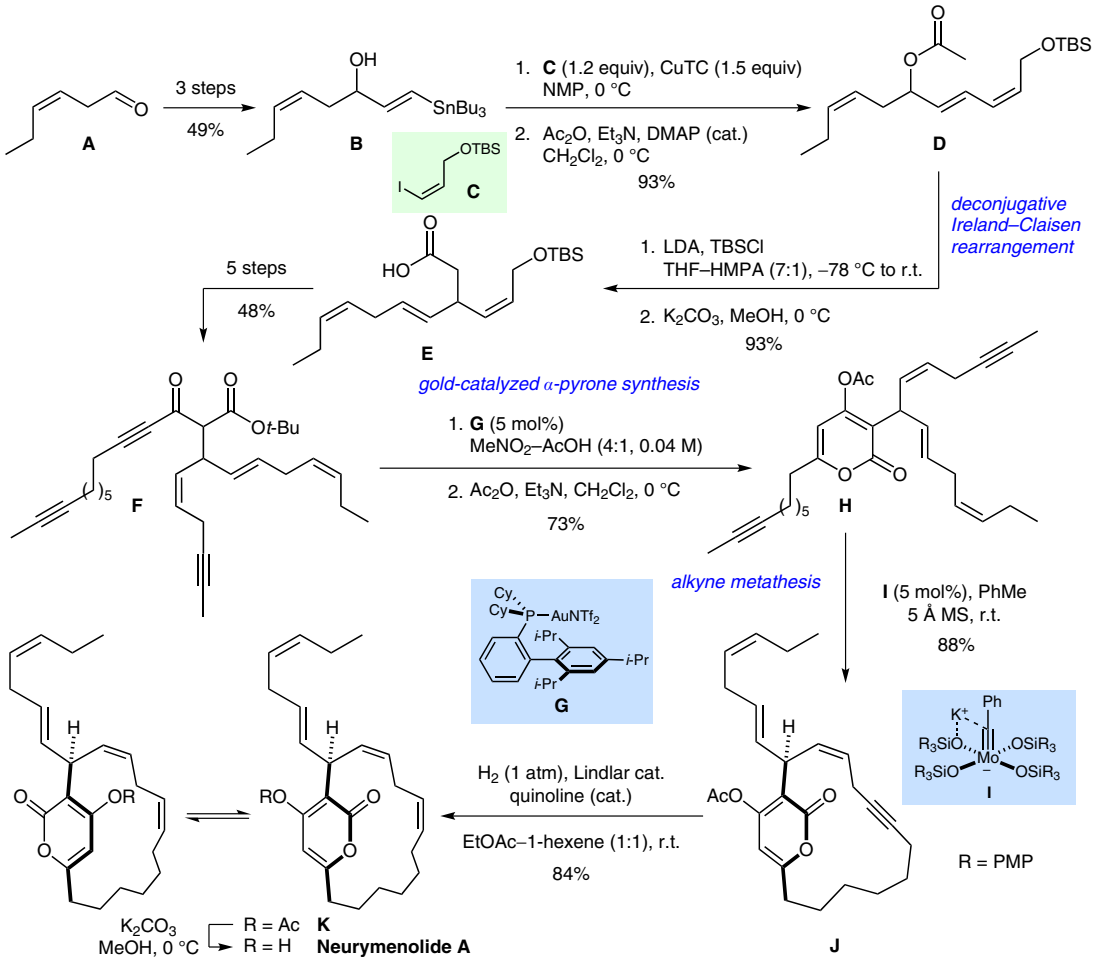
Total Synthesis of Neurymenolide A Based on a Gold-Catalyzed Synthesis of 4-Hydroxy-2-pyrones
Angew. Chem. Int. Ed. **2012**, *51*, 6929–6933.

Total Synthesis of Neurymenolide A



Significance: Neurymenolide A is an unusual α-pyrone macrolide that was isolated in 2009 from the Fijian red alga *Neurymenia fraxinifolia*, exhibiting a broad scope of biological activity. This work represents the first total synthesis of the natural product and features a series of remarkably selective transition metal-catalyzed transformations to build up the highly sensitive cyclophane scaffold.

Comment: The route is based on a novel gold-catalyzed pyrone synthesis that allowed for selective alkyne activation within intermediate **F**. α-Pyrone **H** was subjected to efficient alkyne metathesis to construct macrocycle **J**. Neurymenolide A acetate (**K**) exists as a mixture of interchanging atropisomers and the synthetic material obtained was identical to a sample derived from natural sources. Deprotection of **K** led to rapid degradation.

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Category
Synthesis of Natural Products and Potential Drugs

Key words
neurymenolide
α-pyrones
alkyne metathesis
gold
molybdenum

SYNFACT of the month

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