Total Synthesis of Neurymenolide A

Significance: Neurymenolide A is an unusual \(\alpha\)-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 \(F\). \(\alpha\)-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.

SYNFACTS Contributors: Erick M. Carreira, Oliver F. Jeker

SYNFACTS 2012, 8(10), 1047  Published online: 19.09.2012
DOI: 10.1055/s-0032-1317279; Reg-No.: C00612SF