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Total Synthesis and Structure Assignment of the Anthrone C-Glycoside Cassialoin  

Synthesis of Cassialoin

Significance: A significant development in the synthesis of cassialoin is the use of the α-ketol F as a selectively protected stereogenic anthrone surrogate in which the diastereotopic faces are differentiated thereby allowing control of the C-glycosidation reaction (F + G → H) at C10.

Comment: A regioisomer (17%) was formed in the cyclocondensation reaction of A and B. The α-ketol F was obtained as a single diastereoisomer. The epoxidation–reduction of glycal K (66%) installed the correct stereochemistry at C1′ and C2′.