Synthesis of benzyl substituted naphthalenes from benzylidene tetralones

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Abstract

A convenient and efficient synthesis of novel highly substituted dimethoxybenzylnaphthalenes, which are precursors to several dihydroxynaphthoic acids, is described. The approach involves the use of aldol chemistry to provide a number of benzylidene tetralones, which are converted to the target naphthalenes in three steps, with good to excellent yields. Grignard reaction of intermediate benzyl tetralones provided 1-substituted benzyl naphthalenes. The reported synthesis is flexible and scalable and provides access to naphthalenes having a variety of substitution patterns. These benzyl substituted naphthalenes are being converted to naphthoic acids and the bioactivities of these compounds are currently being investigated.