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Title:	Modular Assembly of Furotropones and Benzofurotropones, and Study of Their Physicochemical Properties
Authors:	Shirke, R.P. (/jspui/browse?type=author&value=Shirke%2C+R.P.) Ramasastry, S.S.V. (/jspui/browse?type=author&value=Ramasastry%2C+S.S.V.)
Keywords:	Fluorescence Ethanol Aromatic compounds Aldol reactions
Issue Date:	2015
Publisher:	American Chemical Society.
Citation:	Journal of Organic Chemistry, 80 (10) pp. 4893-4903
Abstract:	<p>A rapid and straightforward synthesis of a novel series of furo[2,3-d]tropones (or cyclohepta[b]furan-6-ones) has been developed starting from readily and commercially available materials. Directed α-lithiation of furan-3-carboxaldehydes and subsequent reaction with a variety of aldehydes efficiently provide, in one step, access to 3-formyl-2-furylcarbinols, which are otherwise only accessible with difficulty. The 3-formyl-2-furylcarbinols are further elaborated in two steps to the synthesis of furo[2,3-d]tropones in good yields via sequential bismuth(III)chloride-catalyzed furfurylation and an unusual base promoted cyclization strategy. Thus, diverse polysubstituted furotropones and benzofurotropones can be rapidly assembled. This methodology thereby offers a potential approach for the synthesis of several bioactive natural products containing cyclohepta[b]furan core and also for the buildup of complex molecular architectures through higher order cycloaddition reactions of tropones. Further, the new chromophores have been found to possess promising fluorescence properties. Selective fluorogenic sensing behavior of furotropones toward Fe^{3+} ions has also been elucidated.</p>
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