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Title:	Condensation of malononitrile with salicylaldehydes and o-aminobenzaldehydes revisited: Solvent and catalyst free synthesis of 4H-chromenes and quinolines
Authors:	Choudhury, A.R. (/jspui/browse?type=author&value=Choudhury%2C+A.R.)
Keywords:	Catalyst-free Catalyst-free synthesis Chromene derivatives
Issue Date:	2012
Publisher:	The Royal Society of Chemistry
Citation:	RSC Advances, 2 (28), pp. 10556-10563
Abstract:	The reaction of malononitrile with salicylaldehyde under solvent and catalyst free conditions was re-investigated using mechanochemical mixing, thermal heating and a direct crystallization process. The resulting condensation product by all three types of molecular activation, was found to be (2-amino-3-cyano-4H-chromene-4-yl)malononitrile, which is not the previously reported benzofuran-2-carbonitrile. The structure of the resulting chromene derivative was confirmed by FT-IR, MS, 1H, 13C NMR and single crystal and powder X-ray diffraction. The reaction pathway under neat conditions (mechanochemical mixing) at ambient temperature was monitored by IR spectral measurements. The versatility of the current green protocol was examined through the reaction of eleven derivatives of o-hydroxybenzaldehyde with malononitrile to obtain 2-amino-3-cyano-4H-chromene derivatives. In addition, malononitrile was further reacted with o-aminobenzaldehydes under neat conditions to yield quinoline derivatives.
Description:	Only IISERM authors are available in the record.
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