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Unusual reactivity of DMAD (Dimethyl Acetylenedicarboxylate) with
N-alkyl-9-anthracenemethanamine

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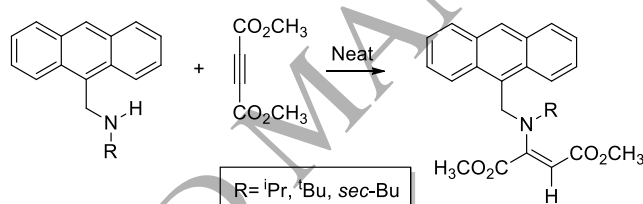
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Abstract

*This communication deals with the synthesis and characterization of a few *N*-alkyl-9-anthracenemethanamines and their reaction with dimethyl acetylenedicarboxylate (DMAD). Irrespective of reaction conditions, the corresponding dimethyl 2-((anthracen-9-ylmethyl)-amino)fumarates arising through a Michael-type addition reaction were exclusively formed in the reaction between these secondary amines and DMAD.*

Graphical abstract



Keywords: Anthracenemethanamine, Diels-Alder reaction, DMAD, Michael addition.

Specifications Table

Subject area	<i>Organic Chemistry, Spectroscopy.</i>
Compounds	<i>Anthracene-9-yl-methanamines</i>
Data category	<i>Spectral, synthesized.</i>
Data acquisition format	<i>¹H NMR, ¹³C NMR, IR, Mass spectra, m.p.</i>
Data type	<i>Process and analysis.</i>
Procedure	<i>Attempted Diels-Alder reaction of anthracenemethanamines with DMAD, resulted in 1,4 Michael adducts.</i>
Data accessibility	<i>Data is provided with this article</i>

1. Rationale

Dimethyl acetylenedicarboxylate abbreviated as DMAD (**1**) is well known for its high reactivity towards cycloadditions, Michael type addition and single electron transfer reactions [1-12]. Anthracenemethanamines such as **2**, on the other hand, are potential dienes, Michael donors and single electron donors. Reaction between such complementary pair of substrates is of considerable interest (Chart 1).

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