A Simple Synthesis of 1-Substituted Diethyl Pyrrole-3,4-dicarboxylates

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A series of 1-substituted diethyl 1H-pyrrole-3,4-dicarboxylates 4a–o were prepared in 14–93 % yield by acid-catalysed treatment of diethyl 2,3-bis[(E,E)-(dimethylamino)-methylidene]succinate (2) with various aliphatic and (hetero)aromatic primary amines 3a–o. The configuration of the C=C double bonds in the bis-enaminone 2 was determined by 1H NMR and HMBC spectroscopy.

Key words: Pyrroles, Enaminones, Amines, Cyclisations, Heterocycles