Electrophilic Substitution Reactions of Indole Alkaloids with α,β-Unsaturated Carbonyl Compounds in the Presence of K10 Montmorillonite*

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Abstract—Reactions of indole, 1-methylindole, and 3-methylindole with dimethyl acetylenedicarboxylate in the presence of K10 montmorillonite as a catalyst led to the formation of the corresponding dimethyl 2,2-bis-(indolyl)butanedioates. The reaction of 2-methylindole with dimethyl acetylenedicarboxylate gave dimethyl 2-(2-methyl-1*H*-indol-3-yl)maleate and dimethyl 2-methyl-1*H*-1-benzoazepine-3,4-dicarboxylate. Dimethyl 1,5-dimethyl-1*H*-1-benzoazepine-3,4-dicarboxylate was obtained by treatment of 1,3-dimethylindole with dimethyl acetylenedicarboxylate using K10 clay as a catalyst.

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