Nitration and Acylation reactions of 2,2'-Diethoxycarbonyl-bis(1H-indol-5-yl) methane

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The reactivity of 2,2'-diethoxycarbonyl-bis(indol-5-yl)methane toward strong electrophilic reagents has been investigated. Electrophilic substitution reactions, including nitration, acylation, and bromination, were carried out under Friedel–Crafts conditions. Nitration at room temperature was found to proceed efficiently, affording 3,3'-dinitro-2,2'-diethoxycarbonyl-bis(indol-5-yl)methane as the principal product, along with probable trinitro derivatives. Friedel–Crafts acylation under mild conditions resulted in the formation of 3-acetyl-2,2'-diethoxycarbonyl-bis(indol-5-yl)methane and 3,3'-diacetyl-2,2'-diethoxycarbonyl-bis(indol-5-yl)methane. Bromination at room temperature furnished 3-bromo- and 3,3'-dibromo-2,2'-diethoxycarbonyl-BIS(indol-5-yl)methane. These findings demonstrate the pronounced susceptibility of the indole fragments in this bis(indolyl)methane derivative toward electrophilic substitution.