

**TOTAL SYNTHESIS OF *N*-BENZYL β,β -DIKETOESTER AND
ITS DERIVATIVES**

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ABSTRACT

TOTAL SYNTHESIS OF *N*-BENZYL β,β -DIKETOESTER AND ITS DERIVATIVES

The purpose of this whole study was to synthesize *N*-benzyl β,β -diketoester and its derivatives due to the excessive improvement of the synthetic route. The tetramic acid can be found abundantly in nature and have wide range of biological activities which include fungicidal action in tumor inhibition, anti-viral activity and anti-ulcerative properties. There are several steps involve in this study which is *N*-protection of ethyl iodoacetate **1** with benzylamine **2** producing glycine ethyl ester **3** (67%) by using THF as the solvent, followed by condensation step by coupling with methyl malonyl chloride in dry benzene to give diester **4** (50%) and finally Dieckmann cyclization with strong base the *t*-buOK give out pyrrolidine-2,4-dione **5** (70%). Successively, an alkyl group was inserted at the C-3 position of the *N*-benzyl β,β -diketoester which leading to the derivatives of *N*-benzyl β,β -dieketoester **6** (67%). The overall yield of the synthesise of *N*-benzyl β,β -diketoester and its derivatives is 10.55% in four steps. All the synthesized compounds were analyzed by using Nuclear Magnetic Resonance (NMR) and also Fourier-Transform Infrared (IR) Spectroscopy.