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Mechanochemical synthesis, simultaneous double cycloaddition reactions of bisnitrones and potential anticancer activities of the bis cycloadducts

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Solid phase synthesis of bisnitrones and cycloaddition reactions of some bisnitrones using mechanochemical procedure has been reported. Change in reaction rate and yields of the bisnitrones as well as bis cycloadducts are the key factors which is highly encouraging after comparing microwave and conventional cycloaddition procedures. This study reports synthesis of terephthalaldehyde and glyoxal derived bis-nitrones and their cycloaddition reactions with activated alkenes and electron deficient alkynes along with significant anticancer activities of a few bis-cycloadducts.

Keywords: Mechanochemistry, Bisnitrones, Intermolecular cycloaddition reaction, Bis-isoxazolidine, Isoxazolines, Anticancer activity