ABSTRACT

Oxadiazoles are five membered heterocyclic compounds. They have two nitrogen atoms, one oxygen atom and two carbon atoms. 1,3,4-oxadiazoles have gained much attraction among different isomeric structures because it is an important construction motif for the design of new pharmaceutical drugs. 1,3,4-oxadiazole derivatives have broad biological activity spectrum. They have potential as anticancer, antiviral, anti-inflammatory, antibacterial, antifungal, analgesic antihypertensive and anticonvulsant. A series of oxadiazole derivatives have been synthesized and evaluated. 1,3,4- tricarboxylic acid has been used as precursor. The product is formed by converting hydrazide of acid into oxadiazole ring. Hydrazide has nitrogen covalently bonded with four substituents and is very important for the formation of five membered heterocyclic compounds. The reagents used for the conversion are KOH and CS_2. KOH facilitates the nucleophilic attack on the electrophilic carbon of carbon disulphide. The oxadiazole ring is derivatized by using different alkylating agents in the presence of an aprotic solvent and sodium hydride. The completion of reaction and purity of the products was affirmed by thin layer chromatography. The synthesized series of compounds was characterized by different analysis techniques like, Elemental analysis, FTIR, and melting point assessment. The biological potential of the compounds was evaluated by Anti-oxidant and Anti-bacterial studies. The results obtained confirmed the formation of this series of compounds and revealed that some of the synthesized moieties have shown great potential against free radical scavenging and exhibited decent anti-bacterial activity against gram positive and gram negative bacterial strains.