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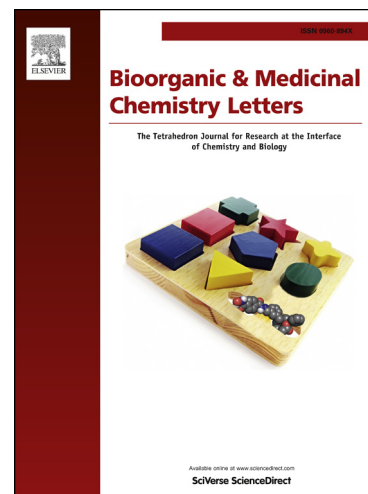
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**Synthesis of novel coumarin appended bis(formylpyrazole) derivatives:
Studies on their antimicrobial and antioxidant activities**

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Abstract

A series of novel coumarin pyrazole hybrids of biological interest were synthesized from the hydrazones, carbazones and thiocarbazones via Vilsmeier Haack formylation reaction. These intermediates and formyl pyrazoles were evaluated for antimicrobial and antioxidant activities. Among the series, compounds **6g** and **6h** showed excellent antimicrobial activity against different bacterial and fungal strains and compounds **7g**, **7h** were found to be potent antioxidant agents in both DPPH and hydroxyl radical scavenging assays. Further, detailed quantitative structure-activity relationship (QSAR) analysis indicated the molecular parameters that contribute to increased potency of inhibition. The above findings would further encourage our understanding in employing coumarin pyrazole hybrids as potential antibiotic agents for treating infections caused by pathogenic microbes and fungi. Further, it also paves the way for exploration of these compounds as potential therapeutic agents to treat conditions arising because of excessive oxidative damage.

Keywords: Antioxidant, antimicrobial, coumarin, DPPH, hydroxyl radical, MIC, pyrazole.

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