



## Synthesis, Spectroscopic, Thermal and *in-vitro* Biological studies of some pyrazolone based Fe(III) heterochelates

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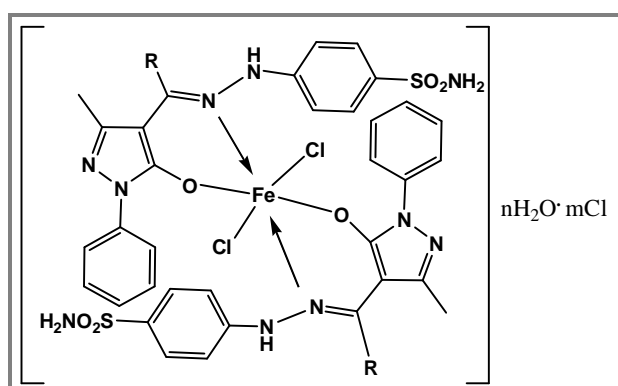
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### ABSTRACT

In this work novel organic based compound sulphonamide phenyl hydrazone derivatives and their thermal and biological activities were investigated. A new series of sulphonamide phenyl hydrazone containing ligand and their Fe(III) based heterochelate were synthesized by various acyl chloride. The structure of sulphonamide phenyl hydrazone ligands were confirmed by <sup>1</sup>H NMR, IR, Elemental analysis and their heterochelates were confirmed by thermal studies (TGA/DTG & DSC) and FAB Mass spectroscopy. All the synthesized compounds were screened for their In-Vitro biological study against Gram+ve (*Bacillus megaterium*) and Gram-ve (*E.coli*) microorganism. The results confirmed that sulphonamide phenyl hydrazone based heterochelates have a great potential and significant for further investigation.

### Graphical Abstract



TGA/DTG Analysis of  $[Fe(L_4)Cl_2] \cdot 2H_2O$ .

**Keywords:** Heterochelate, Biological Activity, Sulphonamide phenyl hydrazone, Acyl pyrazolone, Schiff base, Thermal Studies.