There is a recent enormous interest in pyrazole derivatives, well-known nitrogen containing heterocyclic compounds, because of widespread biological activities such as antimicrobial and antidepressant activities [1]. In the current study, our aim is to characterize 4-benzoyl-1-(3-nitrophenyl)-5-phenyl-N-(4-sulfamoylphenyl)-1H-pyrazole-3-carboxamide (E1) and its derivatives by solution 1H and 13C NMR spectroscopy.

NMR spectroscopy, non-destructive and very powerful technique, is utilized to elucidate chemical structures, to detect hydrogen bonding interactions of E5-E7 that play important role in the properties of chemicals [2], and to differentiate between possible tautomeric structures of pyrazole carboxamide derivatives (see figure below).

The corresponding structure elucidation of the derivatives from the NMR spectra is done referring to our previous work [3]. Hydrogen bonding established via N-H⋯O was observed as downfield shift of isotropical chemical shifts in the 1H and 13C NMR spectra. The difference between the possible tautomeric structures is clarified by 1H NMR spectra. It was also possible to distinguish the 13C resonances of nitrogen-containing heterocyclic structures from the rest of the resonances in the 13C NMR spectra [4].

**REFERENCES**


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**Figure.** Possible tautomeric structures for E5 and E7.