

Mechano-chemical Synthesis and Spectroscopic Characterization of Hemin Complexes with Some Amino Acids

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ABSTRACT

The mechano-chemical reactions of hemin with arginine (Arg), histidine (His), lysine (Lys), methionine (Met) and tryptophan (Trp) were monitored using IR and Mössbauer spectroscopies. According to IR spectra, with exception of Arg, these basic amino acids don't react at the peripheral propionic acid groups of hemin which is related with their relatively low basicity. Arg also forms a penta-coordinated complex with hemin at the iron site, as revealed by the Mössbauer spectra of the hemin–Arg milled mixtures. The hemin–Arg solid state reaction is completed in 1:3 molar ratio suggesting that this is the stoichiometry of

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