Journal of Physics: Conference Series 2012 vol.394 N1

Rotational dynamics of copper(II) amino acid complexes by EPR and NMR relaxation methods

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Abstract

Rotational dynamics of the copper(II) bis-complexes with glycine and L-aspartic acid has been studied by EPR and NMR relaxation methods in aqueous solutions at several temperatures. Dynamical parameters obtained by EPR were compared with nuclear magnetic relaxation dispersion (NMRD) results and were found to be in a good agreement. From EPR data dominating trans isomer for Cu(Gly)2 and cis isomer for Cu(L-Asp)2 2- was found. On the basis of distance of closest approach of protons to central ion inferred from NMRD and crystal structure data the average slope angles of axial water molecule to equatorial plane were calculated and axial coordination of only one water molecule in the Cu(L-Asp)2 2- complex was established.

http://dx.doi.org/10.1088/1742-6596/394/1/012030