

Quadrupole Splitting and Paramagnetic Iron Core Structure in Iron-Dextran Complexes: A Mössbauer Effect Study

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The pharmaceutically important iron-dextran complexes (ferritin models) were studied by Mössbauer spectroscopy in frozen solution at 87 K and in lyophilized form at 297 and 87 K. The quadrupole splittings of the lyophilized forms of iron-dextran complexes measured at 297 and 87 K were slightly different. The quadrupole splittings of several complexes in lyophilized form and frozen solutions measured at 87 K were also different. Slight differences in the quadrupole splitting were found for various iron-dextran complexes. Mössbauer spectra of iron-dextran complexes were better fitted using two quadrupole split doublets. Slight differences in the corresponding quadrupole splittings and doublet ratios were observed for various complexes.

Key words: Iron-dextran Complexes; Mössbauer Spectroscopy; Paramagnetic Iron Core; Quadrupole Splitting.