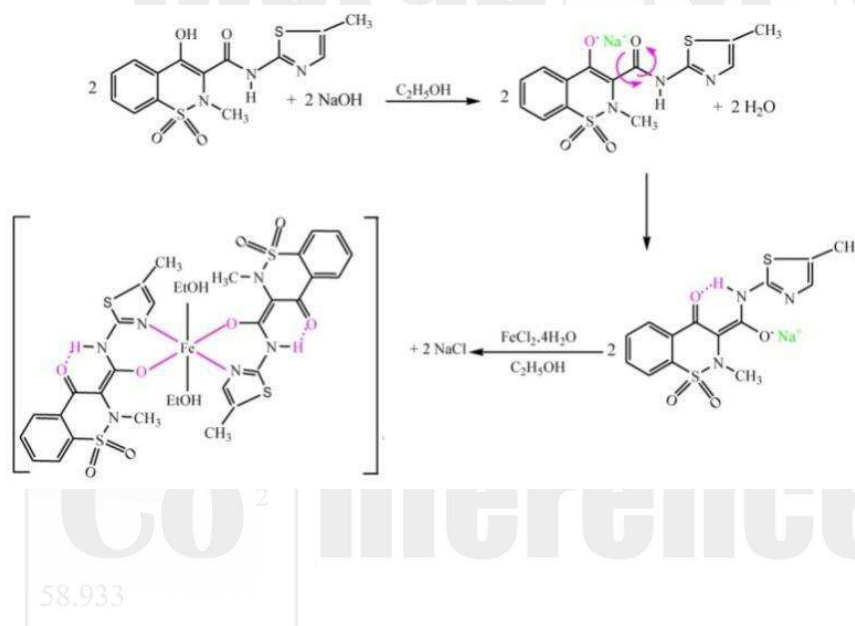


Synthesis, characterization and in vitro studies on the interaction of Fe(II)-meloxicam complex with DNA and BSA

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A new mononuclear complex of Fe(II) with the non-steroidal anti-inflammatory drug meloxicam (H₂mel, 4-hydroxy-2-methyl-N-(5-methyl-2-thiazolyl)-2H-1,2-benzothiazine-3-carboxamide-1,1-dioxide), was synthesized and fully characterized by UV-Vis and IR spectroscopies. The results showed that two Hmel⁻ anions with ZZZ conformation chelate the metal center through the thiazole nitrogen atom and the amidic oxygen atom at the equatorial positions (with a trans arrangement) and a strong intramolecular hydrogen bond between the amide N-H function and the enolate O atom stabilizes the ZZZ conformation of meloxicam ligands. Its interaction with bovine serum albumin (BSA) and deoxyribonucleic acid (DNA) was monitored by UV-Vis spectroscopy and the results showed that the complex has a significant interaction with BSA and DNA. The interaction of the complex with DNA was monitored by a blue shift and hyperchromism in the UV-Vis spectra attributed to an electrostatic binding mode. In addition, the microenvironment and the secondary structure of BSA are changed in the presence of the complex.



References

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