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16th - 20th June • Burgos • Spain

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Facultad de Ciencias, Universidad de Burgos, Spain
President of the Scientific Committee of ISMEC2013

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A new hydroxypyrone powerful chelator. From synthesis to Al^{III}, Fe^{III}, Cu^{II} and Zn^{II} complex formation equilibria, and structural characterization.

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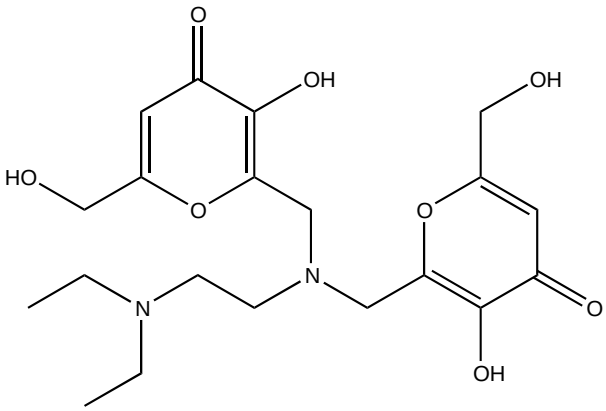
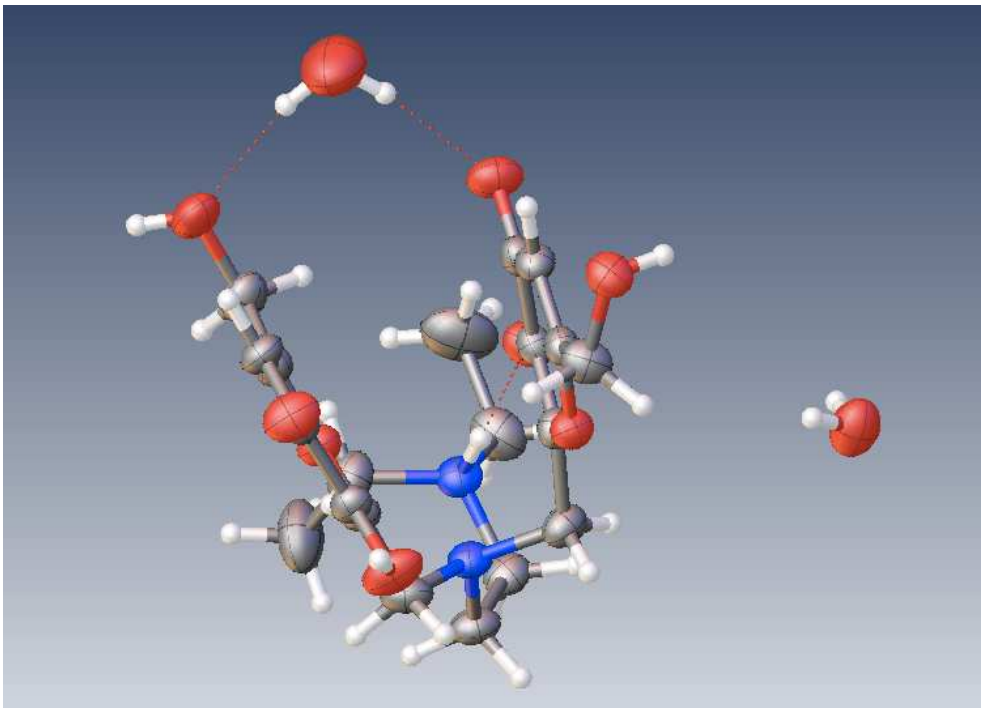
In the frame of our research interest on kojic acid derivatives as powerful chelators for the trivalent iron and aluminium cations [1-4], we have designed, synthesized, and characterized the new ligand 6,6'-(((2-(diethylamino)ethyl)azanediyl)bis(methylene))bis(5-hydroxy-2-(hydroxymethyl)-4*H*-pyran-4-one), L9.



In this communication will be present the study on protonation constants and on the complex formation equilibria with iron and aluminium and with the bivalent essential metal ions, zinc and copper.

X-ray structures of the ligand and of some of its metal complexes will be also presented.



References:

[1] Nurchi V.M.; Crisponi G.; Lachowicz J.I.; Murgia S.; Pivetta T.; Remelli M.; Rescigno A.; Niclós-Gutíerrez J.; González-Pérez J.M.; Domínguez-Martín A.; Castiñeiras A.; Szewczuk Z. Iron(III) and aluminum(III) complexes with hydroxypyrone ligands aimed to design kojic acid derivatives with new perspectives. *J. Inorganic Biochemistry,* **2010,** 104, 560–569

[2] Nurchi V.M.; Lachowicz J.I.; Crisponi G.; Murgia, S.; Arca M.; Pintus A.; Gans P.; Niclós-Gutiérrez J.; Dominguez-Martin A.; Castineiras A.; Remelli M.; Szewczuk, Z.; Lis T., Kojic acid derivatives as powerful chelators for iron(III) and aluminium(III). *Dalton Trans.* **2011,** 40(22), 5984-5998.

[3] Toso L.; Crisponi G.; Nurchi V.M.; Crespo-Alonso M.; Lachowicz J.I.: Santos M.A.; Marques S.M.; Niclos-Gutierrez J.; Gonzalez-Perez J.M.; Dominguez-Martin A.; Choquesillo-Lazarte D.; Szewczuk Z. A family of hydroxypyrone ligands designed and synthesized as iron chelators. *J. Inorganic Biochemistry*, **2013** accepted for publication

[4] Toso L.; Crisponi G.; Nurchi V.M.; Crespo-Alonso M.; Lachowicz J.I.: Arca M.; Santos M.A.; Marques S.M.; Niclos-Gutierrez J.; Gonzalez-Perez J.M.; Dominguez-Martin A.; Choquesillo-Lazarte D.; Szewczuk Z. Searching for new aluminium chelating agents: a family of hydroxypyrone ligands. *J. Inorganic Biochemistry*, **2013** submitted