

Volume: 3
Year: 2013
Symposium Edition: XXIV

ISMEC GROUP SERIES
[http:// mat520.unime.it/ismecacta/](http://mat520.unime.it/ismecacta/)
ISSN: 2239-2459

International Symposium on Metal Complexes

16th - 20th June • Burgos • Spain

*Acta of the International Simposia on Metal Complex



UNIVERSIDAD
DE BURGOS

International Symposium on Metal Complexes

16th - 20th June • Burgos • Spain

***Acta of the International Simposia on Metal Complex**



Begoña García, Editor

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

Guido Crisponi, Editor

University of Cagliari, Italy
President of the ISMEC group

ISMEC GROUP SERIES

Volume: 3

Year: 2013

ISSN: 2239-2459

Symposium Edition: XXIV

The **Acta of the International Symposia on Metal Complexes** (ISSN: 2239-2459) are published annually online by the ISMEC Group.

Editors:

Begoña García (*President of the Scientific Committee of ISMEC 2013*)

Departamento de Química
Facultad de Ciencias
Universidad de Burgos
Plaza de Missael Bañuelos s/n
09001 Burgos (Spain)
begar@ubu.es

Guido Crisponi (*President of the ISMEC Group*)

Dipartimento di Scienze Chimiche
Università degli Studi di Cagliari
Cittadella Universitaria
09042 Monserrato – Cagliari, ITALY
crisponi@unica.it

Scientific Committee of ISMEC 2013:

Begoña García	(University of Burgos, Spain)
Guido Crisponi	(University of Cagliari, Italy)
Antonio Bianchi	(University of Florence, Italy)
Etelka Farkas	(University of Debrecen, Hungary)
Enrique García-España	(University of Valencia, Spain)
Carlos C.F. Geraldes	(University of Coimbra, Portugal)
Juan Niclós	(University of Granada, Spain)
Henryk Kozłowski	(University of Wrocław, Poland)
José M. Leal	(University of Burgos, Spain)
Fernando Pina	(University of Nova Lisbon, Portugal)
Maria C. Rangel	(University of Oporto, Portugal)
Silvio Sammartano	(University of Messina, Italy)
M. Amélia Santos	(University of Técnica Lisbon, Portugal)
Fernando Secco	(University of Pisa, Italy)
Manuel Valiente	(University of Autónoma Barcelona, Spain)
Maurizio Remelli	(University of Ferrara, Italy)

Copyright:

Authors retain the copyrights of their acta, and their unrestricted use, distribution and reproduction in any medium are permitted, provided that the original work is properly cited. The use of general descriptive names, trade names, trademarks, and so forth in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations. While the advice and information in this journal are believed to be true and accurate on the date of its going to press, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher and the editors make no warranty, express or implied, with respect to the material contained herein.

Acta of the International Symposia on Metal Complexes

ISMEC GROUP SERIES

Volume: 3

Year: 2013

Symposium Edition: XXIV

<http://mat520.unime.it/ismecacta/>

ISSN: 2239-2459

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

Leonardo TOSO,^{a)} **Guido CRISPONI**,^{a)} Maria Amelia SANTOS,^{b)} Sergio M. MARQUES,^{b)} Valeria M. NURCHI,^{a)} Joanna I. LACHOWICZ,^{a)} Miriam CRESPO-ALONSO,^{a)} Delara MANSOORI,^{a,c)} Alicia DOMINGUEZ-MARTIN,^{c)} Juan NICLOS-GUTIERREZ,^{c)} Duane CHOQUESILLO-LAZARTE,^{c,d)} Maria Antonietta ZORODDU,^{e)} Massimiliano PEANA^{e)}

^{a)} Department of Chemical and Geological Sciences, University of Cagliari, Cittadella Universitaria, 09042 Monserrato, Cagliari, Italy; crisponi@unica.it

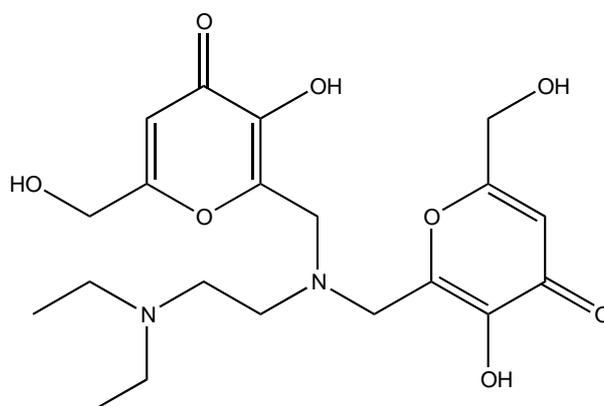
^{b)} Centro Quimica Estrutural, Instituto Superior Tecnico, Universidade Técnica de Lisboa, Av. Rovisco Pais, 1049-001 Lisboa, Portugal

^{c)} Department of Inorganic Chemistry, Faculty of Pharmacy, Campus Cartuja, University of Granada, E-18071, Granada, Spain

^{d)} Laboratorio de Estudios Cristalográficos, IACT, CSIC-Universidad de Granada, Av. de las Palmeras 4, E-18100 Armilla, Granada, Spain

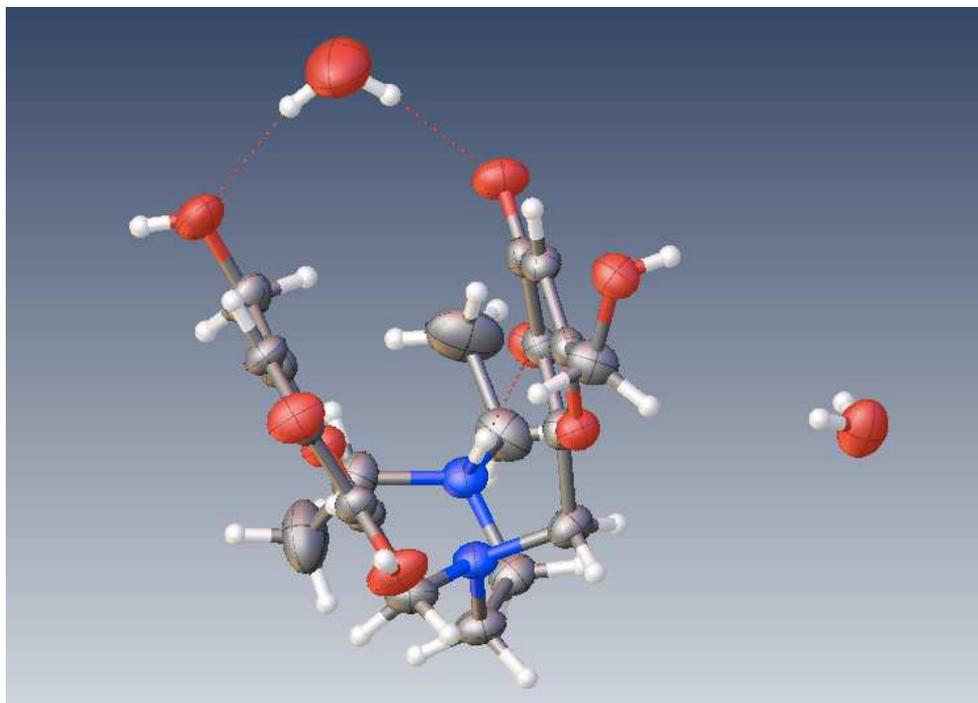
^{e)} Department of Chemistry and Pharmacy, University of Sassari, Via Vienna 2, 07100 Sassari, Italy

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)-4H-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-Gutiérrez J.; González-Pérez J.M.; Domínguez-Martín A.; Castiñeiras A.; Szewczuk Z. Iron(III) and aluminum(III) complexes with hydroxypyryone 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 hydroxypyryone 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 hydroxypyryone ligands. *J. Inorganic Biochemistry*, **2013** submitted