Prof. Enzo Alessio

Elenco Pubblicazioni, Brevetti, Seminari e Invited Lectures

Nov. 2014

PUBBLICAZIONI

1) E. Alessio, G. Zassinovich, G. Mestroni
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166) A. Rilak, I. Bratsos,* E. Zangrando, J. Kljun, I. Turel, Z. D. Bugarčić, **E. Alessio***
New Water-Soluble Ruthenium(II) Terpyridine Complexes for Anticancer Activity: Synthesis, Characterization, Activation Kinetics, and Interaction with Guanine Derivatives.
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NAMI-A is Highly Cytotoxic Toward Leukaemia Cell Lines: Evidence of Inhibition of KCa3.1 Channels.
Dalton Trans. **2014**, *43*, 12150 – 12155. DOI: 10.1039/C4DT01356E.

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An irresolute linker: separation, and structural and spectroscopic characterization of the two linkage isomers of a Ru(II)-(2-(2′-pyridyl)pyrimidine-4-carboxylic acid) complex.
Dalton Trans. **2014**, *43*, 12160-12163. DOI: 10.1039/C4DT01282H.

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1) G. Mestroni, G. Zassinovich, **E. Alessio**
Processo per la riduzione catalitica di composti nitroaromatici.
Italian Patent F 3103 (N. 21953 A/82).

2) G. Mestroni, G. Zassinovich, **E. Alessio**
Process for catalytically reducing nitroaromatic compounds.
United States Patent 4.535.162; deposited Aug 13, 1985

3) **E. Alessio**, G. Mestroni
Process for the catalytic synthesis of aromatic urethanes from nitroaromatic compounds.
Italian Patent F 3297 (N. 21401 A/84), Montedison S.p.A. Extended worldwide.

4) G. Mestroni, **E. Alessio**, F. Quadrifoglio, S. Cauci, G. Sava and S. Zorzet
Complessi trans di rutenio come agenti antineoplastici
Italian Patent N. 20180 A/87 (1987).

5) **E. Alessio**, G. Mestroni, S. Pacor, G. Sava, S. Spinelli
Ruthenium(III) complexes as antineoplastic agents.
Italian Patent 20385 A/89 (1989).
International Patent WO90/13553.

6) G. Mestroni, **E. Alessio**, G. Sava
New salts of anionic complexes of Ru(III) as antimetastatic and antineoplastic agents.
Italian Patent MI96A001359 (1996).
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7) G. Mestroni, **E. Alessio**, G. Sava, E. Iengo, S. Zorzet, A. Bergamo
Ruthenium complexes with high antitumoral and antimetastatic activities.
Italian Patent MI99A002256 (1999)
European Patent EP00/10566 (2000)

8) G. Mestroni, **E. Alessio**, G. Sava, E. Iengo, S. Zorzet, A. Bergamo
Ruthenium dimeric compounds suitable as antimetastatic and antineoplastic agents
Italian Patent, MI99A000811 (1999)
European Patent EP00/03484 (2000)

9) **E. Alessio**, G. Mestroni, G. Sava, A. Bergamo
New anionic and neutral complexes of Ru(III) with nitrogen oxide.
Italian Patent TS2001A000005 (2001)
European Patent EP02/03256 (2002)

10) **E. Alessio**, E. Zangrando, B. Serli, J. Bratsos, G. Sava, A. Bergamo
Complessi dicarbossilati del rutenio(II) e loro impiego come antitumorali.
Italian Patent MI2005A001817 (2005).

LECTURES at SYMPOSIA and CONFERENCES

1. Catalytic reductive carbonylation of nitroaromatic compounds to aromatic urethanes using Palladium + 1,10-Phenanthroline derivatives as catalyst precursors.
   XVII Congresso Nazionale di Chimica Inorganica - Cefalù, 15 - 19 October 1984.
   Oral communication

2. Ruthenium complexes as potential antitumor drugs
   Congresso Interdivisionale della Società Chimica Italiana, Perugia, 7-11 October 1989.
   Oral communication

3. Molecular weathervanes: restricted rotation about metal-ligand s nitrogen bonds in substituted derivatives of *cis*-$RuCl_2(dmso)_4$.
   IV Convegno Nazionale "Interazione di Metalli e Composti con Biomolecole", S. Agnello (Na) 13-15 April 1993.
   Oral communication

4. Restricted rotation phenomena about metal-ligand σ bonds in octahedral coordination compounds: an NMR and structural approach.
   XXII Congresso Nazionale di Chimica Inorganica, Villasimius (Ca) September 26 – October 1 1993.
   Oral communication

5. The development of antitumor active ruthenium-sulfoxide complexes.
   CERC3 Young Chemists Workshop 1994 "Coordination Chemistry in the Context of Biological and Environmental Studies", Tolouse (France), July 4-7 1994.
   Invited oral contribution

6. Selective S to O linkage isomerization in dimethylsulfoxide complexes of ruthenium induced by coordination of CO.
   XXIII Congresso Nazionale di Chimica Inorganica, Bressanone (Bz), October 2-7 1994.
   Oral communication

7. The development of antitumor active ruthenium-sulfoxide complexes.
   Third Greek, Italian, Portuguese, Spanish Meeting in Inorganic Chemistry, Senigallia (Italy), June 9-14 1995.
   Invited oral contribution

8. Ruthenium compounds and pyridyl-porphyrins as building blocks for self-assembling supramolecular arrays.
   VII Convegno Nazionale "Interazione di Metalli e Composti con Biomolecole", S. Agnello (Na), April 12-14 1996.
   Oral communication

9. The development of antitumor active ruthenium-sulfoxide complexes.
NATO Advanced Study Institute "Cytotoxic, Mutagenic and Carcinogenic Potential of Heavy Metals Related to Human Environment," Przesieka (Poland), June 15-26 1996.
Invited lecture

10. From simple coordination compounds to "advanced" coordination chemistry.
XXIV Congresso di Chimica Inorganica, Mondello (Pa), June 25-29 1996.
"Nasini Award" plenary lecture

11. Ruthenium compounds and pyridyl-porphyrins as building blocks for self-assembling supramolecular arrays.
Sixth International Conference on The Chemistry of the Platinum Group Metals, York (UK), July 21-26 1996.
Oral communication

12. Ruthenium compounds and pyridyl-porphyrins as building blocks for self-assembling supramolecular arrays.
31 International Conference on Coordination Chemistry (ICCC31), Vancouver (Canada), August 18-23 1996.
Oral communication

13. Strategies toward the construction of supramolecular systems by self-assembly of building blocks: a set of coordination compounds with mono-coordinated bridging ligands.
XXV Congresso Nazionale di Chimica Inorganica, Alessandria, September 1-4 1997.
Oral communication

14. The development of ruthenium antitumor drugs.
Final COST D1 Meeting "Coordination Chemistry in the Context of Biological and Environmental Studies", Bergen (Norway), September 11-13 1997.
Plenary lecture

15. The role of coordination chemistry in the design and synthesis of supramolecular arrays of porphyrins
VII ESF Conference "Design of Functional Systems - Inorganic Environmental and Medicinal Challenges", San Feliu de Guixols (Spain), September 4 - 9 1998.
Invited lecture

16. Ruthenium compounds with antimetastatic properties.
5th International Symposium on Applied Bioinorganic Chemistry, Corfù (Greece), April 13-17 1999.
Invited session lecture

17. Novel supramolecular arrays of pyridylporphyrins and ruthenium coordination compounds.
7th International Conference on The Chemistry of the Platinum Group Metals, Nottingham (UK), July 25-30 1999.
Oral communication

18. Metal-mediated supramolecular assemblies of porphyrins
Meeting of COST Working Group D11/0004/98, Bristol (UK), May 25-28 2000,.
Oral presentation

19. Recent developments in ruthenium-dimethylsulfoxide chemistry pertaining to antitumor agents.
International Conference on DNA conformation, modification and recognition in biomedicine, Brno (Czech Republic), July 2-5 2000.
Invited lecture

20. The development of ruthenium antitumor drugs.
Final Meeting of COST D8 "The chemistry of metals in medicine", Dublin (Ireland), March 29-31 2001.
Plenary lecture

21. Ruthenium anticancer drugs
6th FIGIPS Meeting in Inorganic Chemistry, Barcellona (Spain), July 15-20, 2001.
Invited session lecture

22. Ruthenium anticancer drugs
10th International Conference on Bioinorganic Chemistry (ICBIC X), Florence (Italy), August 26-31 2001.
Invited session lecture

23. From molecular squares of porphyrins to supramolecular assemblies of higher order.
5° Congresso Nazionale di Chimica Supramolecolare, Frascati (Roma), September 30 - October 3 2001.
Plenary lecture

24. Ruthenium anticancer drugs
1st Workshop on Pharmaco-bio-metallics, Certosa di Pontignano (Siena), November 23-25 2001.
Oral communication

25. Metallacycles of porphyrins as building blocks in the construction of higher order assemblies through axial coordination of bridging ligands: solid state characterization of molecular sandwiches and molecular wires."
ELETTRA IX Users' Meeting, Trieste, December 3-4, 2001.
Invited lecture.

26. Novel Ruthenium-Dimethyl sulfoxide Nitrosyls as Possible NO-Releasing Agents
35th International Conference on Coordination Chemistry (ICCC35), Heidelberg (Germany), July 21-26, 2002.
Invited session lecture

27. Metal-mediated supramolecular assemblies of porphyrins
Third International Conference on Porphyrins and Phthalocyanines, New Orleans (USA), July 11-16 2004.
Invited symposium lecture

28. Anticancer ruthenium complexes
7th European Biological Inorganic Chemistry Conference (EUROBIC7), Garmish-Partenkirchen (Germany), August 29 - September 2 2004.
Invited session lecture

29. Metal-mediated nanoscopic assemblies of chromophores for molecular electronics, light energy conversion, and molecular recognition.
Kick-off Meeting of COST Action D31 "Organizing non-covalent chemical systems with selected functions", Prague (Czech Republic), November 4-6 2004.
Oral presentation

30. Metal-mediated supramolecular assemblies of porphyrins.
1st Working Group Meeting of COST Action D31/003/04, Grado (Italy), May 20-22, 2005.
Oral presentation

31. Ruthenium and other non-platinum anticancer drugs
1st European Conference on Chemistry for Life Sciences, Rimini (Italy), October 4-8, 2005.
Invited lecture

32. Design of novel, innovative metal anticancer drugs
Final Meeting of COST Action D20, Brno (Czech Republic), July 15-18, 2006
Session lecture

33. The development of ruthenium anticancer compounds
38th Convention of the South African Chemical Institute, Durban (South Africa), December 3-8, 2006.
Plenary lecture

34. Metal-mediated nanoscopic assemblies of chromophores for molecular electronics, light energy conversion, and molecular recognition.
COST D31 Mid-term Meeting, Athens, March 28-30, 2007.
Session lecture

35. Ruthenium-dmso anticancer complexes
Metal Containing Anticancer Agents, Jerusalem, April 14-17, 2007.
Invited lecture

36. Synthetic strategies and structural aspects of metal-mediated multi-porphyrin assembliesII International Symposium on Macrocyclic and Supramolecular Chemistry, Salice Terme (Italy), June 24-28, 2007.
Invited lecture

37. Recent advances in anticancer ruthenium compounds.
13th International Conference on Biological Inorganic Chemistry (ICBIC XIII), Vienna (Austria), July 15-20, 2007
Session lecture

38. Ruthenium anticancer compounds: challenges and expectations.
9th European Biological Inorganic Chemistry Conference (EUROBI9), Wroclaw (Poland), September 2-6, 2008.
Keynote lecture

39. Sorting out metal anticancer compounds with a focus on ruthenium.
COST Action D39, Meeting of Working Group 006, Leiden (The Netherlands), November 25-26, 2008.
Invited lecture

40. Chemical strategies for metal anticancer drugs
COST D39 Working Group meeting, Trieste, May 22-23, 2009.
Invited lecture

41. Metal-mediated nanoscopic assemblies of chromophores for molecular electronics, light energy conversion, and molecular recognition.
COST D31 Final Action Meeting, Warsaw (Poland), May 28-29, 2009.
Oral report presentation

42. A categorization of metal anticancer compounds based on their mode of action.
COST D39 Action Meeting, Debrecen (Hungary), September 24-25, 2009.
Keynote lecture

43. Ruthenium-porphyrin conjugates for anticancer activity.
10th European Biological Inorganic Chemistry Conference (Eurobic10), Thessaloniki (Greece), June 22 – 26, 2010.
Keynote lecture

44. Ruthenium anticancer drugs
49th Meeting of the Serbian Chemical Society, Kragujevac (Serbia), May 13-14, 2011.
Plenary lecture

45. Pyridyl- and bpy-substituted Porphyrins as Ligands in Supramolecular and Medicinal Chemistry
5th EuCheMS Conference on Nitrogen Ligands, Granada (Spain), September 4-8, 2011.
Plenary lecture

46. What did we learn from 30 years of 'promising' ruthenium anticancer compounds?
Gordon Research Conference on Metals in Medicine, Andover (New Hampshire, USA), June 24-29, 2012.

Invited lecture

47. ^{99m}Tc(I)/Re(I)-porphyrin conjugates for multimodal molecular imaging
First Whole Action Meeting of COST CM1105, Granada (Spain), September 17 – 18, 2012.
Oral presentation

48. Porphyrin-metal conjugates for solar energy conversion, ion transport and medicinal chemistry.
Italian Meeting on Porphyrins and Phthalocyanines-1, Roma, 1-3 Luglio 2013.
Oral presentation

49. New water-soluble Re(I)-porphyrin conjugates for PDT and nuclear medicine applications.
1st Symposium on functional metal complexes that bind to biomolecules, Barcelona (Spain), September 9-10, 2013.
Oral presentation

50. Inorganic Chemistry in a Biological Context
NIOK/HRSMC AMOCC Summer School 2014, Deurne (NL), July 2014.
Series of 4 invited lectures for Ph D students

CONFERENCES

1. Complessi di rutenio e piridilporfirine quali building blocks per la costruzione di sistemi supramolecolari auto-assemblanti.
   Dipartimento di Scienze Chimiche, Università di Ferrara (Italy), December 18, 1996.

2. Composti di coordinazione quali building blocks per la costruzione di sistemi supramolecolari ordinati.
   Dipartimento di Scienze Chimiche, Università di Camerino (Italy), May 15, 1997.

3. Composti antitumorali inorganici: il caso del rutenio.
   Dipartimento di Chimica, Università di Firenze (Italy), June 13, 1997.

4. Composti supramolecolari contenenti porfirine e composti di coordinazione
   Istituto di Fotochimica e Radiazioni d'Alta Energia (FRAE), CNR di Bologna (Italy), March 22, 2000.

5. The development of ruthenium-dimethylsulfoxide anticancer complexes
   Institute of Inorganic Chemistry, University of Vienna (Austria), October 21, 2002.

6. Beyond NAMI-A: the search for new potential anticancer ruthenium-dimethylsulfoxide complexes.
   Department of Chemistry, University of Leiden (The Netherlands), Sept 29, 2003.
7. Costruzione di sistemi supramolecolari di porfirine mediata da centri metallici.
   Istituto di Fotochimica e Radiazioni d'Alta Energia (FRAE), CNR di Bologna (Italy), May 20, 2004.

8. Il ruolo della chimica inorganica nello sviluppo di farmaci antitumorali: il caso dei composti del rutenio.
   Dipartimento di Chimica, Università di Firenze (Italy), June 23, 2004.

9. Costruzione di sistemi supramolecolari di porfirine mediata da centri metallici
   Dipartimento di Chimica, Università di Parma (Italy), June 24, 2004.

10. Anticancer ruthenium complexesScuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste (Italy), July 27, 2004.

11. Metal-mediated supramolecular assemblies of porphyrins for photophysical applications
    Univeristy of Lousanne (CH), May 29, 2006.

12. Metal-mediated supramolecular assemblies of porphyrins for photophysical applications
    Institut Català de Investigacion Quimica (ICIQ), Tarragona (Spain), October 6, 2006.

13. Metal-mediated assemblies of porphyrins for photophysical applications
    University of Leiden (The Netherlands), September 25, 2007.

14. Metal-mediated assemblies of chromophores for photophysical applications
Universitè Louis Pasteur, Strasbourg (France), October 12, 2007.

15. Metal-mediated assemblies of porphyrins for photophysical applications
University of Zurich (CH), April 11, 2008.

16. Ruthenium anticancer compounds
Universitè Louis Pasteur, Strasburg (France), May 29, 2008.

17. Metal-mediated assemblies of porphyrins for photophysical applications
Universitè Louis Pasteur, Strasburg (France), June 5, 2008.

18. Metal-mediated assemblies of porphyrins for photophysical applications.
University of Twente, Enschede (The Netherlands), November 24, 2008.

19. A categorization of metal anticancer compounds based on their mode of action.
Dipartimento di Chimica, Università di Firenze (Italy), June 12, 2009.

20. Platinum and ruthenium anticancer drugs
University of Ljubljana (Slovenja), April 21, 2010.

21. Beyond NAMI-A: recent developments in ruthenium anticancer compounds
University of Marburg (Germany), May 23, 2011.

22. Metal-mediated assemblies of porphyrins for photophysical applications
Technical University of Dortmund (Germany), May 24, 2011.

23. Metal-mediated assemblies of porphyrins for photophysical applications
University of Gottingen (Germany), May 25, 2011.

24. Beyond NAMI-A: recent developments in ruthenium anticancer compounds
University of Munster (Germany), May 26, 2011.

25. Beyond NAMI-A: recent developments in ruthenium anticancer compounds
University of Bochum (Germany), May 27, 2011.

26. What I learned from 25 years of 'promising' ruthenium anticancer compounds
University College Dublin (Ireland), November 2, 2012.