Metallodrugs as protein modulators

Batista de Almeida, Andreia Filipa

Publication List and Curriculum Vitae

Publications (published)

**authors contributed equally to the work*

• de Almeida, A.*, Martins, A.P*, Mósca, A. Wijma, H.J., Prista, C., Soveral, G., Casini, A. (submitted) Exploring the gating mechanisms of aquaporin-3: new clues for inhibitor's design? **(2016)** *Mol. Biosyst.* DOI: 10.1039/C6MB00013D **(In this thesis)**

• Tsitsa, I., Tarushi, A., Kalogiannis, S., Perdih, F., de Almeida, A., Papadopoulos, A., Casini, A., Turel, I., Psomas, G. (**2016**) Structure and biological perspectives of metal complexes of flumequine. *RSC Advances* 6: 19555-19570, DOI: 10.1039/C5RA25776J

• Wenzel, M.*, de Almeida, A.*, Bigaeva, E., Bertrand, B., Le Gendre, P., Bodio, E., Picquet, M., Casini, A. (**2016**) Fluorescent polynuclear metal complexes with anticancer properties: towards new theranostics. *Inorg. Chem.,* DOI: 10.1021/acs.inorgchem.5b02910 **(In this thesis)**

• Spinello, A., de Almeida, A., Casini, A. and Barone, G. (**2015**) The inhibition of glycerol permeation through aquaglyceroporin-3 induced by mercury(II): a molecular dynamics study. *J.Inorg. Biochem.* DOI:10.1016/j.jinorgbio.2015.11.027 **(In this thesis)**

• Casini, A. and de Almeida, A. (**2015**) Aquaporins in health and disease: New molecular targets for drug discovery. Chapter: Inorganic compounds as aquaporin substrates or as potent inhibitiors: a coordination chemistry point of view. *CRC Press/Taylor & Francis Group* **(In this thesis)**

• de Almeida, A., Soveral, G., Casini, A. (**2014**) Gold compounds as aquaporin inhibitors: new opportunities for therapy and imaging. *Med. Chem. Comm.* 5: 1444-1453 DOI: 10.1039/c4md00265b **(In this thesis)**

• Khan, R.A, Al-Farhan, K., de Almeida, A., Alsalme, A., Casini, A., Ghazzali, M., Reedijk, J. (**2014**) Light-stable bis(norharmane)silver(I) compounds: synthesis, characterization and antiproliferative effects in cancer cells. *J. Inorg. Biochem.* 140:1-5. DOI: 10.1016/j.jinorgbio.2014.06.019

• Madeira, A.*, de Almeida, *A.**, de Graaf, C., Camps, M., Zorzano, A., Moura, T. F., Casini, A. and Soveral, G. (**2014**), A Gold Coordination Compound as a Chemical Probe to Unravel Aquaporin-7 Function. *Chem. Bio. Chem.*, 15: 1487–1494. DOI: 10.1002/cbic.201402103 **(In this thesis)**

• Bertrand, B.*, de Almeida, A.*, van der Burgt, E. P. M., Picquet, M., Citta, A., Folda, A., Rigobello, M. P., Le Gendre, P., Bodio, E. and Casini, A. (**2014**), New Gold(I) Organometallic Compounds with Biological Activity in Cancer Cells. *Eur. J. Inorg. Chem.* DOI: 10.1002/ejic.201402248 **(Front cover pitcure) (In this thesis)**

• Rubbiani, R., Salassa, L., de Almeida, A., Casini, A. and Ott, I. (**2014**), Cytotoxic Gold(I) N-heterocyclic Carbene Complexes with Phosphane Ligands as Potent Enzyme Inhibitors. *Chem. Med. Chem*, 9: 1205–1210. DOI: 10.1002/cmdc.201400056 **(VIP paper, Front cover pitcure)**

• Frik, M., Jiménez, J., Vasilevski, V., Carreira, M., de Almeida, A., Gascón, E., Benoit, F., Sanaú, M., Casini, A. and Contel, M. (**2014**). Luminescent iminophosphorane gold, palladium and platinum complexes as potential anticancer agents. Inorg. Chem. Front. 1, 231-241 DOI: 10.1039/C4QI00003J **(Front cover pitcure)**

• Lease, N., Vasilevski, V., Carreira, M., de Almeida, A., Sanaú, M., Hirva, P., Contel, M. (**2013**). Potential anticancer heterometallic Fe-Au and Fe-Pd agents: initial mechanistic insights. *J. Med. Chem.*, 56 (14), pp 5806–5818 DOI: 10.1021/jm4007615

• Martins, A. P., Ciancetta, A., de Almeida, A., Marrone, A., Re, N., Soveral, G. and Casini, A. (**2013**), Aquaporin Inhibition by Gold(III) Compounds: New Insights. *Chem. Med. Chem.*, 8: 1086–1092. doi: 10.1002/cmdc.201300107 **(In this thesis)**

• de Almeida, A., Oliveira, B. L., Correia, J. D. G., Soveral, G., & Casini, A. (**2013**). Emerging protein targets for metal-based pharmaceutical agents: An update. *Coordination Chemistry Reviews*, 1–16. DOI:10.1016/j.ccr.2013.01.031 **(In this thesis)**

Publications (submitted)

**authors contributed equally to the work*

• de Almeida, A., Mósca, A., Soveral G., Casini, A. (submitted) Insights in the mechanism of aquaporin inhibition by gold compounds with N-donor ligands **(In this thesis)**

• Martins, A.P*, de Almeida, A.*, Mósca, A.*, Wijma, H.J., Madeira, A., Loureiro-Dias, M.C., Casini, A., Moura, T.F., Prista, C., Soveral, G., (submitted) Human aquaporin-7 expressed in yeast reveals pH gating **(In this thesis)**

• Boorsma, C.E., Putri, K.S.S., de Almeida, A., Maud, Thais, Brandsma, C., van den Berge, M., Olinga, P., Timens, W., Casini, A., Melgert, B.N. (submitted) The Role of Tartrate Resistant Acid Phosphatase in Alveolar Macrophages in the Context of Obstructive Pulmonary Diseases

• Khan, R.A.*, de Almeida, A.*, Al-Farhan, K., Alsalme, A., Casini, A., Ghazzali, M., Reedijk, J. (submitted) First-row transition-metal norharmane compounds as possible cytotoxic agents: new insights based on a coordination chemistry perspective

Publications (in preparation)

• de Almeida, A., Veelthuis, S., Schulze, M., Timens, W., Melgert, B.N., Casini, A. (*in preparation*) Role of aquaporins in diseases: aquaglyceroporin-3 in lung tissue and lung carcinoma

• de Almeida, A., Veelthuis, S., Schulze, M., Casini, A. (*in preparation*) Effects of anticancer treatment in aquaglyceroporin-3 expression

• de Almeida, A., Martins, A.P, Soveral, G., Casini, A. (*in preparation*) Dinuclear organogold(III) compounds as aquaglyceroporin-3 inhibitors

Curriculum Vitae

Andreia de Almeida

Citizenship: Portuguese **Birth Date:** 13 May 1986

Email: A.F.Batista.de.Almeida@rug.nl

For updated contact information and publication list, use the following QR-codes to access ResearchGate and LinkendIn profiles:

Work Exerience

01.April.2012 – 08.April.2016

PhD in the field of Medicinal Inorganic Chemistry

Metallodrugs as Protein Modulators

Pharmacokinetics, Toxicology and Targeting Group, Research Institute of Pharmacy, Rijksuniversiteit Groningen

Additional Scientific Training

05.Jan.2016 – 15.Jan.2016

Research Stay at Biological Transport Group

Prof. Graça Soveral, Faculty of Pharmacy, Universidade de Lisboa, Lisboa, Portugal

Study of the inhibition propertie of gold(III) complexes with N-donor ligands, as AQP3 inhibitors

01.Mar.2014 – 14.Mar.2014

Short-Term Scientific Mission at Mind the Byte, SL

Dr. Alfons Nonell Canals, Barcelona, Spain

Short-Term Scientific Mission (STSM) in the AScope of COST Action CM1106

Molecular modelling approaches to identify novel AQP inhibitors

01.Aug.2013 – 31.Aug.2013

Short-Term Scientific Mission at Biological Transport Group

Prof. Graça Soveral, Faculty of Pharmacy, Universidade de Lisboa, Lisboa, Portugal

Short-Term Scientific Mission (STSM) in the Scope of COST Action CM0902

Screening of copper complexes as AQP inhibitors

04.Feb.2013 – 15.Feb.2013

Research Stay at Medicinal Chemistry Group

Dr. Chris de Graaf, Faculty of Sciences, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

Computational Design and Synthesis of Drugs

01.Sep.2009 – 31.Jul.2010

Training at Biological Transport & Microbial Bioenergetics Group

Prof. Teresa Moura & Dr. Joana Matos, REQUIMTE (FCT-UNL), Caparica, Portugal

Prof. Mª Conceição Loureiro Dias & Dr. Catarina Prista, CBAA (ISA-UTL), Lisboa, Portugal

Investigation of transport and metabolism of glucose in S. cerevisiae

01.Mar.2008 – 31.Mar.2009

Training at Bio-Prot Group

Dr. Sofia Pauleta, REQUIMTE (FCT-UNL), Caparica, Portugal

Cloning of the periplasmic sensor domain of a histidine protein kinase, involved in the copper resistance regulation

Education

15.Dec.2011

Master in Structural and Functional Biochemistry (MSc, 120 ECTS)

Faculty of Science and Technology, Universidade Nova de Lisboa, Caparica, Portugal

Title of MSc thesis (1 year): *Mathematical modelling of kinetic and metabolic behaviour of S. cerevisiae: pH variations after a glucose pulse*

23.Jul.2009

Licenciatura in Biochemistry (BSc, 188 ECTS)

Faculty of Science and Technology, Universidade Nova de Lisboa, Caparica, Portugal

Title of BSc thesis (6 months): *Mathematical modelling of kinetic and metabolic behaviour of S. cerevisiae: pH variations after a maltose pulse*

Extra Scientific Activities

Dec.2015

Organization and Volunteer Staff at CEMM 2015

International Symposium on Clinical and Experimental Metallodrugs in Medicine: Cancer Chemotherapy (CEMM)

Workshop in "Translational Research)

Sullivan Center, Univerisity of Hawaii Cancer Center, Honolulu, USA

Aug.2014

Volunteer Staff at MCB Symposium

Symposium organized by the Division of Medicinal Chemistry and Bioanalysis (MCB) of the Groningen University Institute for Drug Exploration (GUIDE) and the Department of Analytical Biochemistry

Groningen Institute of Pharmacy, Groningen, The Netherlands

Feb.2013

Organization and Volunteer Staff of COST Action Meeting

WG1 + WG5 Joint Meeting of the COST Action CM1105

Groningen Institute of Pharmacy, Groningen, The Netherlands

Jun.2010

Volunteer Staff at XVIII Yeast Biology Meeting

National meeting "Prof. Nicolau van Uden", organized by the Portuguese Microbiology Society

Instituto Superior de Agronomia, Universidade Técnica de Lisboa, Lisboa, Portugal

May.2009

Organization, Planning and Volunteer Staff at Biochemistry JORTEC

Meeting organized by students, with invited lectures, open to the academic community.

Faculty of Science and Tecnology, Universidade Nova de Lisboa, Caparica, Portugal

April.2009 &
April 2009

Volunteer Staff at EXPO-FCT

Annual open-day at Faculty of Science and Tecnology, Universidade Nova de Lisboa, Caparica, Portugal

Sep.2008
Sep.2009

Tutoring

Tutoring of seven junior students in Biochemistry.

Faculty of Science and Tecnology, Universidade Nova de Lisboa, Caparica, Portugal