

1. Interested institution:

The Spanish National Research Council (CSIC). C/ Serrano 117, 28006, Madrid (Spain)

www.csic.es

Applied Organometallic Chemistry (QOA) Instituto de Síntesis Química y Catálisis Homogénea (ISQCH).

Facultad de Ciencias-Universidad de Zaragoza

Plaza S. Francisco s/n. 50009 Zaragoza Spain

www.unizar.es/icma/depart/qoa/web/

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2. Brief Description of the Institution

The Spanish National Research Council (CSIC) is the largest public institution dedicated to research in Spain and the third largest in Europe. Belonging to the Spanish Ministry of Economy and Competitiveness through the Secretary of State for Research, Development and Innovation, its main objective is to develop and promote research that will help bring about scientific and technological progress, and it is prepared to collaborate with Spanish and foreign entities in order to achieve this aim. It has a staff of more than 13,000 employees, among these about 3,300 are permanent researchers and about 4,300 are pre- and post-doctoral researchers. The CSIC has 70 fully own institutes or centres distributed throughout Spain. In addition, it has 53 Joint Research Units with universities or other research institutions. There is also a delegation in Brussels and Rome.

CSIC has considerable experience in both participating and managing R&D projects and training of research personnel. Under the 7th Framework Programme CSIC has signed approximately 700 actions (including 97 coordinated by CSIC and 47 ERC projects). Funding wise, CSIC is listed the 1st organisation in Spain and the 5th in Europe in the 7th Framework Programme, with a total FP7 contribution of over 260 million euros. During the first calls of H2020, CSIC has had an intense participation in all programmes. It has been remarkable the participation in certain calls, such as ERC and Marie Curie, as well as in ICT, NMBP and Societal Challenges. In March 2015 CSIC has obtained 90 projects with a total financial contribution of 40 million euros.

3. Please tick the areas of research (as established in Marie Skłodowska Curie Actions)

"EXPRESSION OF INTEREST" FOR HOSTING MARIE S. CURIE FELLOWS IN SPANISH INSTITUTIONS (CALL MSCA IF 2015)

☒ Chemistry (CHE)

- ☐ Social Sciences and Humanities (SOC)
- ☐ Economic Sciences (ECO)
- ☐ Information Science and Engineering (ENG)

☐ Environmental Sciences and Geology (ENV)

- ☐ Life Sciences (LIF)
- ☐ Mathematics (MAT)
- ☐ Physics (PHY)

4. Research / Project Description

MOLECULAR THERAPY AGAINST CANCER AND ALZHEIMER

The aim of the project is the design of new kind of ligands and its noble metals complexes (9th,10th and 11th group) with tailored properties for biomedical applications, mainly anti-proliferative properties against different cancer cell-lines, anti Alzheimer action and the study of their interaction mechanisms.

We shall found those different properties, mainly in gold complexes and in its metal group, Cu y Ag, and with Pd y Pt as well, by the use of polyfunctional phosphane (P-N, eg. PTA, P(NMe₂)₃) and thiol (N-SH, eg. 2-thiolpyridine, 2-thiolpyrimidine) that could be modified by introduction of organic pendants groups (P-NR, N-SR). This synthesis of the new ligands is directed to properties such as water solubility, polyfunctional behaviour with two or more metallic centers, or synthesis of biophosphanes, by incorporation of aminoacids ends, able to pass through the cell or brain membranes.

With this synthesis "a la carte" we synthesise complexes with the properties we wanted such as hydrophilicity, hydrophobicity or a good relation between them (log P = 0), etc. Nitrogen and C-ortho- or other cyclo-metallated gold (III) complexes mainly with NC-, NCN-, CCN-, CNC- y NNN-donor ligand will be tested as antitumoral agents and from the best we will study the action mechanisms.

The new ligands and their water soluble complexes will be tested to interact with Cu(II) present in the clew of A β -amiloide characteristic of Alzheimer disease (AD). Our objective in this part is to find ligands and/or complexes synthesised in this project able to remove Cu(II) of these clews and prevent the formation of ROS (which are one of the causes of the AD), and the study of the involved mechanisms.

5. Who can apply?

At the deadline for the submission of proposals (10/09/2015), researchers (*):

- shall be in possession of a doctoral degree or have at least four years of full-time equivalent research experience.
- must not have resided or carried out their main activities in the country of Spain for more than 12 months in the 3 years immediately prior to the abovementioned deadline.

6. Contact person

Mariano Laguna. Instituto de Síntesis Química y Catálisis Homogénea. Applied Organometallic Chemistry (QOA)

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7. Applications: documents to be submitted and deadlines

- CV
- motivation letter

Please note that:

- Deadline of the next call for proposals for Marie Skłodowska – Curie Individual Fellowships is **September, 10th 2015**.
- Oficina Europea is only responsible for the display of the expressions of interests received by the institutions; further contact and information requests will take place directly between the host institutions and the interested researchers.

(*) Further details on the Call and additional eligibility criteria can be found at the [Participants' Portal](#)