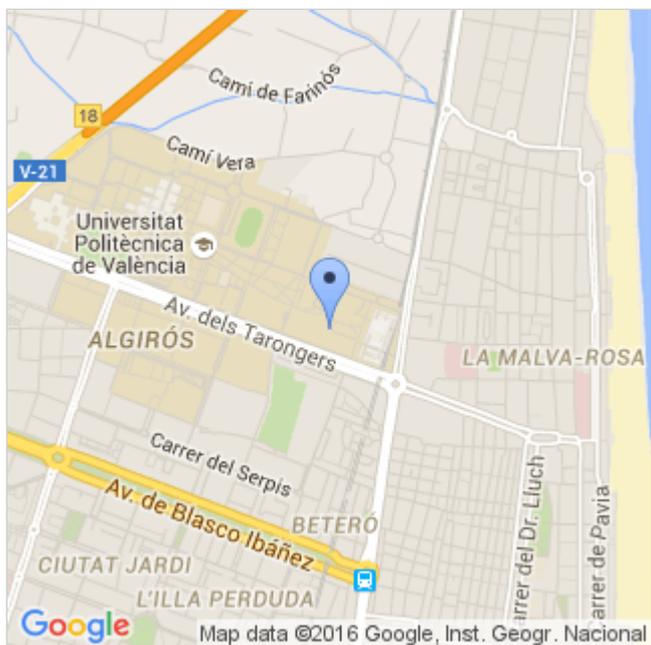# Expression of Interest

Contact Person/Scientist in Charge

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Universitat Politècnica de València (UPV)

Department / Institute / Centre

- **Name:** Department of Chemistry / Inst. de Rec. Molecular / Universitat Politècnica de València
- **Address:** Campus de Vera; Camino de Vera, s/n; Valencia (46022)
- **Province:** Valencia

Research Area

- Chemistry (CHE)
- Life Sciences (LIF)

Brief description of the institution:

Universitat Politècnica de València (UPV) is the single Spanish Technical University that features in the main University world rankings. It is within the top 5 Spanish Universities with the highest revenue from both public research and knowledge transfer activities, and a national leader in patent license income and start up creation. Constituted in 1971, it comprises nearly 30.000 students, over 2500 academics, and 17 university research centres of excellence.

UPV has a relevant experience in the participation in international research programmes, with over 100 FP7 projects and 40 H2020 projects in the period 2014-2015. UPV researchers are also actively involved all H2020 life program stages, from workprogramme drafting discussions, to project coordination. It is also taking part in several major partnering initiatives (JTIs, PPPs, KICs…).

Brief description of the Centre/Research Group (including URL if applicable):

UPVLC-SYM, which amass a huge expertise in the biosensing and bioMEMS topics, investigating in the development of immobilization procedures for different materials (organic and inorganic) and support shapes, and developing biosensing (this group holds several patents on this) and silicon-based photonic devices for the detection of proteins, antibodies and ssDNA.

Also, is a pioneering research group in the development of analytical capacities for CD based technologies (CD, DVD, Blu-ray, Lightscribe). Indeed, from the original digital data storing and reading concept, novel analytical methodologies have been developed for chemical and biochemical applications.

The team is composed by 16 people, including two university professors, and other permanent members, specialized on Analytical, Organic, Physic-Chemistry and Biochemistry fields.

http://idm.webs.upv.es

Project description:

Compact biophotonic platform for drug allergy diagnosis (COBIOPHAD).

The research work will be centered on synthesis and assay of antigenic determinants for beta-lactam antibiotic targets.

Drug hypersensitivity to antibiotics, mainly B-lactams (BLCs) affects more than 2.5 million European citizens. Currently, the allergy diagnosis is mainly based on the information given by invasive, single, and risky in vivo assays. In daily practice, few in vitro diagnostic methods are available and only used at the tertiary health services. These tests also lack of sensitivity and selectivity, resulting in an inaccurate diagnosis, analyze few drugs allergens, are time consuming (60-180 min), and expensive (30 €/allergen).

COBIOPHAD aims the development of an innovative in vitro diagnostic (IVD) device for diagnosis of IgEmediated drug allergies by building an integrated biophotonic system based on compact disc technology. For that, key enabling technologies will be integrated in order to achieve high sensitive, selective, multiplexed (10 BLCs), rapid, and low-cost (2.4 €/allergen) drug allergy test. The solution involves an advanced approach to the diagnosis and management of drug allergy with the aim to ameliorate patient safety.

The partners of the consortium comprises multidisciplinary knowledge on optics, electronics, advanced materials, biotechnology, smart microstructures, microfluidics, surface/organic chemistry, allergy, manufacturing systems, and telecom networking. Also, the key industrial actors, present in the consortium, will contribute to the manufacturing and placing the product on the IVD market.

The project deals to lead a relevant technological change within the in vitro drug allergy diagnosis.

http://cordis.europa.eu/project/rcn/199874_en.html

Applications

CV, letter of motivation, two recommendation letters, other professional information as: language/s speaked, etc.