Porphyrin-Based Dyes for Imaging Membrane Potential via Second Harmonic Generation

Fact Sheet

Project information

PORPH_IMP_SHG

Grant agreement ID: 255164
Status
Closed project

Start date 1 May 2010
End date 30 April 2012

Funded under:
FP7-PEOPLE

Overall budget:
€ 172,740.80

EU contribution
€ 172,740.80

Coordinated by:
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD
United Kingdom

Objective

Based on recently published work from Anderson's group in Oxford, this proposal aims to develop a new technique for optical imaging of membrane potential in living cells using second-harmonic generation (SHG) microscopy with porphyrin-based dyes. This technology should enable the function of neurons, and other excitable cells, to be monitored in real time, with high spatial resolution, in their native networks. The objectives of this project include (1) the synthesis of new porphyrins that bind efficiently to the plasma membranes of cells, exhibit strong voltage-dependent SHG and which avoid photo-damage and phototoxicity, and (2) the demonstration that these dyes can be used to monitor membrane potential in living cells. Prof. Anderson's group in Oxford has pioneered research into porphyrin-based nonlinear optical dyes for many years, and has great expertise in this area. The Department of Chemistry in Oxford has world-class facilities for this research. Ismael López Duarte will soon complete his PhD in the field of phthalocyanine chemistry, but he has no experience in the synthesis of porphyrins, nor of the design and testing of dyes for biological applications. This Fellowship will give him the opportunity to apply his expertise in synthesis to the creation of useful new biological probes. It will provide him with experience in a new and rapidly growing area of research and enable him to broaden his horizons.
Programme(s)

FP7-PEOPLE - Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Topic(s)

FP7-PEOPLE-2009-IEF - Marie Curie Action: "Intra-European Fellowships for Career Development"

Call for proposal

FP7-PEOPLE-2009-IEF

See other projects for this call

Funding Scheme

MC-IEF - Intra-European Fellowships (IEF)

Coordinator

THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD

Address

Wellington Square University
Offices
Ox1 2jd Oxford

United Kingdom

Website

Contact the organisation

Administrative Contact

Linda Pialek (Ms.)

Share this page

Permalink: https://cordis.europa.eu/project/id/255164/en

© European Union, 2019