Università degli Studi di Ferrara
Dipartimento di Morfologia, Chirurgia e Medicina Sperimentale

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Dipartimento di Morfologia, Chirurgia e Medicina sperimentale
Via Luigi Borsari, 46 - 44121 Ferrara
Telefono: 0532 – 455752 email: dmcs@unife.it
Partita Iva 00434690384 - Codice Fiscale 80007370382

CALL FOR A POSTDOCTORAL RESEARCH POSITION

funded by European Funds to regione Emilia Romagna - POR FESR 2014-2020 ASSE 1 AZIONE 1.2.2 under the research project "Development and pilot validation of medical portable biophotonic imaging device integrated with Lipid-Omic testing methodology" (Project acronym BiophotOmics).

Title of the position (#1): Development of bio-molecular and microscopic analysis on normal and pathological cell membrane for the realization of diagnostic and prognostic tests.

Brief project description:

Development of an innovative medical device KET photonic and –omics approach based: a) photonic technology to develop a biophotonic portable device with a customized software tool for dark field hyperspectral microscopy on human samples, such as a blood drop; b) innovative testing with coupled biophotonic and lipidomic technology for integrated hyperspectral analysis on cell membrane fatty acids as an innovative global health marker, in particular on erythrocytes cell membrane.
The new testing methodology on cell membrane will be set up on erythrocytes and lymphocytes cell models, on animal and human samples of dismetabolic, hemato-oncology and neurologic (such as Alzheimer, Parkinson, multiple sclerosis) diseases.
The project is focused on the needs of the red-biotech sector for a non-invasive, low cost and easy to use analysis, regarding fragile and disabled figures (Homecare) and for precision and personalized medicine, linked to nutrition and lifestyle.

Work Plan Activities:

1) Set up appropriate integrated analysis combining lipidomics and advanced microscopy (fluorescence and electron microscopy) on human cell models in vitro and from animal models, on blood samples from (human) healthy donors. Effects of different nutritional conditions in all models.

2) Correlate lipidomics and microscopy data on pathological (dismetabolic, hemato-oncology and neurologic) cell membrane derived samples.

3) Develop integrated biophotonic and advanced conventional microscopy analysis on in vitro and animal models corresponding to human dismetabolic, hemato-oncology and neurologic diseases. Extension of the analysis on human derived samples.

4) Assess and validate biophotonic analysis interfaced with lipidomics and biochemical analysis. Calibration of the test.

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Profile of Candidate:

Any National, foreign or stateless candidate(s) that hold the following requirements:

- PhD in biomedical sciences or any related area;
- Strong experience in cellular and molecular biology, including transfection and gene expression modulation by siRNA, shRNA (mandatory);
- Experience with mammalian cell culture (mandatory);
- Experience with gene expression analysis (mandatory);
- Experience with cloning, and transduction (highly valued);
- Experience in hemato-oncology (highly valued);
- Experience in microscopy (highly valued);
- Experience with techniques of cell labelling for microscopy analysis (highly valued);
- Experience of biochemistry (desirable);
- Course and/or License to work with laboratory animals (desirable);
- Experience with cancer in vivo models (desirable);
- High quality publication track record, with first authorship publications in high quality peer-reviewed scientific journals (highly valued);
- Experience with bioinformatics (valued as a complement to the other listed qualities)
- Excellent knowledge of written and spoken English;
- Good communication and presentation skills;
- Availability to work abroad in collaborating laboratories if necessary (highly valued).

Start Date and workplace:

The contract, after public competition, is expected to start in September 2019 for 12 months and will be renewable for other 12 months; the activities will be mainly developed in the Laboratory of Biomarkers, Biomolecular Targets and Personalized Medicine in Oncology, Dept. of Morphology, Surgery and Experimental Medicine, University of Ferrara. The activities may be developed for short(er) periods in other necessary locations to their execution.

Gross annual earnings:

Gross annual remuneration is 23.822 € (corresponding to a net monthly remuneration around 1450 €).

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If interested please contact Prof. Luca Maria Neri e-mail: luca.neri@unife.it sending:

a) Detailed CV
b) Motivation Letter in English explaining why the interest in the project and why the candidate would be an asset to it;
c) Two reference letters (optional but desirable).

Prof. Dr. Luca M. Neri, MD
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Section of Human Anatomy
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