

Pre-call for PhD and Post-Doc Research Positions

Athens, 27.02.2018

The Biomimetics and Nanobiotechnology team of the Institute of Biology, Medicinal Chemistry & Biotechnology, NHRF, is inviting young fellows with

- a) Msc diploma and
- b) PhD in Chemistry, Biology, Chemical Engineering, Biotechnology or relevant

to express their interest in carrying out:

- a) PhD or
- b) Post-doctoral research

in the following research field:

Bioactive compounds isolation from culture growth medium and their protection via nanoencapsulation

Apart from bioactive compounds contained in the cells of cultivated microalgae (especially *Spirulina* sp.), high amounts of bioactive compounds is expected to maintain in the growth medium (free of cells). Therefore, a study of the growth media content in terms of proteins, lipids and polysaccharides, as well as other bioactive compounds that are released by the cells, should be conducted. Especially in the case of *Spirulina* sp. cultures, a special interest is expressed over the isolation of phycocyanin (protein) and phycocyanobilin (pigment) from dry as well as fresh mass. These pigments can be used in foods and cosmetics and present bioactive compounds with high health beneficial impact.

Isolated bioactive compounds need protection by environmental threats leading to oxidation and degradation. Their protection can be achieved by their encapsulation in gels and other relative media. Due to the restrict material that are allowed to be used in foods and cosmetics, encapsulation should take place in media based on natural polymers such as gelatin, pectin and starch.

References:

1. Zoumpantioti, M., Karavas, E., Skopelitis, C., Stamatis, H., Xenakis, A. Lecithin organogels as model carriers of pharmaceuticals. 2004. **Progress in Colloids and Polymer Science**. 123: 199

2. Minic, S.L. Milcic, M., Stanic-Vucinic, D., Radibratovic, M., Sotiroudis, T.G., Nikolic, M.R., Cirković Velicković,T. 2015. Phycocyanobilin, a bioactive tetrapyrrolic compound of blue-green alga Spirulina, binds with high affinity and competes with bilirubin for binding on human serum albumin. **RSC Advances**. 5: 61787

Qualifications:

PhD candidates: Biology, Chemistry, Biotechnology, Chemical Engineering or relative Degree and Masters Diploma (Msc).

Post-doc candidates: Biology, Chemistry, Biotechnology, Chemical Engineering or relative Degree and PhD. Laboratory experience on protein, polysaccharides, lipids and other bioactive compounds isolation from growth media. Laboratory experience on in vitro drug release studies will be considered as an advantage. Resent research publications.

Fellows who are interested should send their CV and communication details for two recommendation letters, via email to Dr. Maria Zoumpanioti at mariaz@eie.gr under the subject: "Pre-call for PhD and Post-Doc Research Positions".