DIPARTIMENTO DI FARMACIA E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **giovedì 28 Ottobre 2021**
alle ore **14:30**

in streaming:

https://teams.microsoft.com/l/meetup-join/19%3aN09c0NIyEssBnF7ObCyDOQwkgDWm1qdd9f7F2nJV9fw1%40thread.tacv2/1631519544944?context=%7b%22Tid%22%3a%22e99647dc-1b08-454a-bf8c-699181b389ab%22%2c%22Oid%22%3a%225a941351-ef41-4aa4-8771-fa50a6d62ca1%22%7d

oppure *in presenza*:

Aula 1, FaBiT, via Belmeloro 6, Bologna (green pass e prenotazione richiesti) *

Dr. Ezio Rosato, Ph.D.

Department of Genetics and Genome Biology, University of Leicester, UK

(moderatori Proff. Marco Rinaldo Oggioni e Giovanni Perini)

terrà un seminario dal titolo:

MULTIPLE PATHS TO MAGNETORECEPTION

Colleghi e studenti sono cordialmente invitati

Commissione Ricerca e Attività Correlate - FaBiT

*** Per la partecipazione in presenza è necessario essere in possesso del green pass e dare comunicazione della propria presenza mediante mail a: francesco.flandi@studio.unibo.it entro il 28 ottobre ore 10:00 in modo da garantire la conformità con la capienza massima dell'aula (89 posti)**

ABSTRACT

Many animals, from insects to vertebrates, use the Earth's magnetic field for navigation. Still, magnetoreception is one of the major mysteries remaining in biology. We do not exactly know the nature of the magnetoreceptor, whether one or multiple receptors exist, and the signalling pathways involved. Fortunately, many animals that do not migrate possess a magnetic sense, including the fruit fly Drosophila melanogaster. This makes possible to use neuro-genetics to establish the identity of the magnetoreceptor and signal transduction mechanisms. The favoured hypothesis to explain magnetosensitivity is based on a quantum phenomenon. This is triggered by a light activated electron transfer between flavin adenine dinucleotide (FAD) and a chain of four tryptophan (Trp) residues within the photoreceptor protein, CRYPTOCHROME (CRY). This hypothesis, called the Radical Pair Mechanism, is currently centred on CRY. Here we show that full length CRY although sufficient is not necessary for magnetoreception. We provide evidence to suggest that non-canonical (i.e., non CRY-dependent) radical pairs are able to elicit magnetic responses in cells.

BIOGRAPHICAL SKETCH

In my laboratory, we are interested in behaviour, namely those observable processes initiated by an animal in response to extrinsic and/or intrinsic changes to the environment. Behaviour is a product of the brain; therefore, we use it as a convenient tool for the analysis of the nervous system.

The main focus of my research are biological rhythms that I investigate using genetic, molecular and imaging tools applied to the model system Drosophila melanogaster. A particular interest of my laboratory is studying the mechanism of action of Cryptochrome, a blue-light sensitive protein involved in circadian rhythms, neuronal excitability, and detection of magnetic fields. https://www2.le.ac.uk/departments/genetics/people/rosato.