



## Scheda di Offerta Tesi

**Titolo (provvisorio):** In vitro electrochemical monitoring of allergic reactions

**Relatore/i:** Raiteri Roberto, Stephan S. Keller (DTU, Denmark)

**E-mail:** Roberto.Raiteri@unige.it

**Indirizzo:** Via Opera pia 11a 16145 Genova

**Tel.:** (+39) 010 33 52762

### Descrizione

#### Motivazione e campo di applicazione

Although a lot of research has been conducted to investigate the mechanisms behind allergic reactions, there is still a lack of knowledge on several fundamental phenomena related to allergy

#### Obiettivi generali e principali attività

The goal of this project is the development of an in vitro model which could provide real-time electrochemical monitoring of degradation of mast cells triggered by allergic reactions. Carbon microelectrodes will be fabricated and mast cells will be cultured on such electrodes. The release of histamine upon mast cell activation will be studied using different electrochemical methods (cyclic voltammetry, impedance spectroscopy, amperometry)

#### Obiettivi di apprendimento (strumenti tecnici e analitici, metodologie sperimentali)

The student will be trained in:

- microfluidics fabrication
- electrochemical methods (cyclic voltammetry, electrochemical impedance spectroscopy, amperometry)
- cell laboratory work (cell culturing, staining, microscopy)
- general experimental practice (planning, execution, and documentation of experiments)

**Luogo/i in cui si svolgerà il lavoro:** Department of Health Technology, Technical University of Denmark, Kongens Lyngby, Denmark

### Informazioni aggiuntive

**Numero massimo di studenti:** 1