Titolo (provvisorio): Nano-in-micro drug formulations for cystic fibrosis

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**Descrizione**

**Motivazione e campo di applicazione**

Design, fabrication and characterization of drug delivery systems able to overcome the limitations of current therapeutic protocols in the treatment of cystic fibrosis (CF)

**Obiettivi generali e principali attività**

Chronic pulmonary infections by Pseudomonas aeruginosa are characteristic of CF patients, which are currently treated by antibiotics. However, the efficacy of such treatment protocols in CF patients is limited by the overproduction of a viscous and highly complex mucus, which limits drug bioavailability and targeting at the site of infection. In this respect, functionalized nanoparticle-based drug delivery systems will be specifically developed to overcome the mucus barrier. Moreover, the developed nanoformulations will be encapsulated in micro-containers for their efficient pulmonary delivery through inhalation.

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

To gain practical experience in the development and engineerization of a multifunctional system to overcome a specific problem starting from the knowledge of the pathophysiological characteristics of a diseased tissue.

**Luogo/i in cui si svolgerà il lavoro:** DIBRIS, University of Genoa

**Informazioni aggiuntive**

Numero massimo di studenti: 2