Titolo (provvisorio): Composite hydrogels for the sustained release of bioactive molecules

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**Descrizione**

**Motivazione e campo di applicazione**

Design, fabrication and characterization of composite hydrogel microparticles to be used as carriers for bioactive molecules (e.g. antioxidants).

**Obiettivi generali e principali attività**

Hydrogels have been extensively used in various biomedical applications such as drug delivery and biosensing. More recently, the possibility of formulating natural hydrogels with inorganic nanoparticles has opened the way to the fabrication of composite materials displaying better mechanical properties and thus able to modulate the release of encapsulated molecules. In this respect, the air-dynamically driven encapsulation and the spray-drying techniques will be used to fabricate hydrogel microparticles embedded with nanosystems and antioxidant molecules. Different polysaccharide hydrogels will be evaluated.

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

To gain practical experience in the development, engineerization and characterization of composite hydrogel microparticles for applications in sustained drug release.

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

**Informazioni aggiuntive**

**Numero massimo di studenti:** 1