DRF: Thesis SL-DRF-20-0532

RESEARCH FIELD

Chemistry / Condensed matter physics, chemistry & nanosciences

TITLE

Functionnalized nanoparticles for radiosensitization

ABSTRACT

This project involves the development of new delivery systems for drugs based on the degradation of polymers by irradiation. This new stimulus has never been explored for such applications. This permits to consider a coupled chemo- and radiotherapy beyond the simple trigger release. The objective is to perform the synthesis of a library of original amphiphilic copolymers, i.e. with a water-soluble/biocompatible part, together with a hydrophobic/radiosensitive part. The self-assembly into micelles or vesicles will lead to objects with a radiosensitive core where the drug will be located. The first advantage of these new systems is to control more finely the targeting of drug to the tumor cells and to avoid the side effects associated with chemotherapy and radiotherapy, by controlling the position of the irradiating beam and/or the absorbed doses.

LOCATION

Institut rayonnement et matière de Saclay
Service Nanosciences et Innovation pour les Materiaux, la Biomédecine et l'Energie
Laboratoire Innovation, Chimie des Surfaces Et Nanosciences
Place: Saclay
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