



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO
DI FARMACIA
E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **05 Novembre 2024**
alle ore **14:00**

Emma Coschina

PhD candidate in Cellular and Molecular Biology at the University of Bologna

(ospite di Dr.ssa Gloria Ravegnini)

terrà un seminario in lingua italiana dal titolo:

**Advanced 3D bioprinting technique for the
development of in vitro cancer models**

Area tematica:
Cancer Biology

in presenza:

Aula B Farmacologia, via Irnerio 48, Bologna BO

Colleghi e studenti sono cordialmente invitati

ABSTRACT

3D bioprinting has emerged as a new technology for in vitro disease modelling, drug screening and personalized medicine. This new technique enables the generation of tumor models that closely mimic the high complexity of human tumor, where the cells are able to interact with other elements of the tumoral microenvironment. Endometrial carcinoma (EC) represents the most common gynaecological cancer in Western countries. Over the years, many improvements in the screening, detection and treatment of EC have been made, but the mechanisms of EC recurrence and resistance to chemotherapy are still unclear. In vitro cancer research mainly relies on conventional two-dimensional (2D) cell models which do not faithfully reproduce the in vivo complexity. Based on that, the aim of this work is to generate 3D bioprinted EC models, characterize them and compare them to the 2D EC model. EC cell lines were encapsulated in an alginate-based hydrogel. To investigate the differences between 3D and 2D, we evaluated cell proliferation, cell viability and miRNAs expression of three EC cell lines. Through miRNA analysis, we observed consistent differences in miRNA expression profiles between the 2D and 3D models. Interestingly, the pathways resulted upregulated in 3D, at both day 7 and 14, were mainly associated to cell migration, proliferation, apoptosis and tumor progression. In conclusion, we developed a promising long-term 3D EC culture model that offer different features compared to the conventional 2D models, presenting the potential to advance knowledge in EC biology research.

BIOGRAPHICAL SKETCHES

Emma Coschina is a second year PhD candidate in Cellular and Molecular Biology at the University of Bologna.

Emma holds a bachelor's degree in Biology from the University of Calabria and a Master of Health Biology from the University of Bologna with a thesis focused on the analysis of circulating microRNAs as potential predictive biomarkers in ovarian cancer. During the first year of her PhD program, she joined the University of Gothenburg, Sweden, as a visiting PhD student, from September 2023 to December 2023.

Her current research interests focus on the generation and characterization of 3D bioprinted in-vitro models of human endometrial cancer.