ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO
DI SCIENZE MEDICHE
E CHIRURGICHE

Modulo richiesta borsa di studio per attività di ricerca post-laurea

TUTOR

Ivana Kurelac

TITOLO DEL PROGETTO

TARGETING TET2 DEMETHYLASE IN COMPLEX I DEFICIENT OVARIAN CANCER

DESCRIZIONE DEL PROGETTO DI RICERCA

OBIETTIVO:

Targeting respiratory complex I (CI) has emerged in recent years as a promising anticancer strategy in a wide range of tumors. CI harnessing increases concentration of α-ketoglutarate and oxygen, both implicated in regulating the activity of the Ten Eleven Translocation (TET) enzymes. The objective of the project is to demonstrate that targeting TET enzymes decreases antitumorigenic potential of ovarian tumors with CI damage.

MATERIALI e METODI:

TET2 knock-down will be obtained in CI knock-out ovarian cancer cells by stable transduction of shRNA against the TET2 gene, to define in vitro and in vivo effect of TET2 targeting on cancer growth. In particular, incucyte will be used for 2D proliferation and Lifecyte for migratory capacity. Moreover, methylation status will be performed by 5hmC staining of chromatin via immunocytochemistry and 5mC staining via flow cytometry. In vivo tumorigenic potential of the generated models will be evaluated in NOD/SCID mice by following subcutaneous xenograft growth. T-test will be used to compare the averages.

RISULTATI/IMPATTO ATTESI:

By month 6 it is expected that the above described experiments will be concluded and that CI knock-out cells in which TET2 was knocked-down will show lower demethylation and tumorigenic potential compared to controls.

Commissione proposta *3 commissari +* *1 supplente*	*Prof.ssa Elena Bonora, DIMEC*
	Dr.ssa Chiara Diquigiovanni, DIMEC
	Dr.ssa Manuela Sollazzo, FABIT
	Prof.ssa Iommarini Luisa, FABIT - supplente

DESCRIZIONE DELLE ATTIVITA' DEL BORSISTA

Apart from the experimental work described above (cell culture, cytology, molecular and cell biology techniques), the fellow will participate at weekly lab meetings of the group "Genetica mitocondriale nella progressione dei tumori solidi", where both discussion of other projects and presentation of the proper are envisioned. Morever, the fellow will present the results on congresses, and contribute to scientific paper writing.

Scheda attività assistenziale *(se prevista)*

ATTIVITÀ ASSISTENZIALI DEL BORSISTA DI RICERCA/N. ORE SETTIMANA (max 18 ore settimanali)
Non applicabile
AZIENDA SANITARIA PRESSO CUI SI SVOLGERÀ L'ATTIVITÀ
Non applicabile