

Ministero

dell'Università e della Ricerca

Partners:

- IBPM-CNR: Julie Martone

Finanziato

dall'Unione europea

nerationEL

- Università degli studi di Napoli "Federico II": Marcella Cesana
- Università degli studi di Roma "Tor Vergata": Federico Gherardini

<u>julie.martone@cnr.it</u>



Italia**domani**

Consiglio Nazionale

delle Ricerche

 $(\ \ \)$

Description:

The aim of this project is to understand how transcription factors (TFs) and long non coding RNAs (IncRNAs) function during development to determine whether dysregulation of developmental processes is causative for cancer initiation or necessary for cancer progression and metastasis. The proposed project is based on the hypothesis that TFs and IncRNAs may function together to orchestrate developmental processes exploited by cancer cells to maintain their fitness. Therefore, we propose to dissect placental development as a model platform to infer TFs and IncRNAs driven tumourigenesis and to investigate their mutual crosstalk.

Aims:

With this project we plan to explore TF-IncRNA networks in placental development and cancer. As an initial goal we will focus on TFEB as a representative TF at the crossroads of development and cancer and exploit its involvement in placentation to infer its role in cancer. To this end, we will explore lncRNAs functionally linked to TFEB. We will continue in parallel with the identification and functional definition of the oncogenic potential of novel TF-IncRNAs networks.

Expected results:

The characterization of the role of lncRNAs in modulating TF's mechanism of action will open multiple new avenues for pharmacological regulation of TF activity. Indeed, the aberrant role of a TF in cancer might require the interaction with a specific lncRNA, whose modulation would be easier and with fewer off-target effects than acting on a TF, which is notably able to strongly modify the expression of several targets, not necessarily involved in cancer.

Funded by the European Union – Next Generation EU, M4C2 – CUP B53D23016210006