Marianna Ielasi

[redacted] [redacted] [redacted]

[redacted] 27/04/1992

Education

SEPT 2019 - JULY 2023

Master degree in Cellular and Molecular Biology (LM-6)
Alma Mater Studiorum Università di Bologna

https://corsi.unibo.it/2cycle/MolecularCellBiology

Experimental thesis in molecular biology: *Crosstalk between energy metabolism and the control of cell cycle at the origin of genomic instability within osteosarcoma*
Relator: prof. Giovanni Capranico
Co-relator: Dr.Fernando Gianfrancesco
Final graduation: 110/110

SEPT 2015 - OCT 2019

Bachelor degree in General and Applied Biology (L-13) - cellular and molecular biology curriculum
Università degli Studi di Napoli Federico Secondo

http://www.dipartimentodibiologia.unina.it/corsi-di-laurea/laurea-in-biologia-generale-e-applicata/

Experimental thesis in genetic: *ESpZscan4/LNGFR/dCas9/gRNA transgenic cell line validation by Real Time-PCR*
Relator: Tiziana Angrisano
Final graduation: 110L/110

Laboratory Experience

NOV 2021 - JUN 2023

Extramoenia curricular internship at Genetic and Biophysic Institute (IGB) – National Research Council of Italy (CNR)

https://www.igb.cnr.it/

At Dr. Fernando Gianfrancesco's Bone Disease and Tumors Laboratory.
Dr. Gianfrancesco's laboratory has identified a novel mutation (PFN1 c.318_321delTGAC) responsible for the onset of an early and aggressive variant of Paget's disease of Bone, with high propension for the development of osteosarcoma. Indeed, this PFN1 mutation consists in a loss-of-function wich leads to mitotic defects like cytokinesis failure, anaphase chromosomes bridges, lagging chromosomes, formation of micronuclei and chromotripsis, wich are all known causes for the genomic instability that characterize osteosarcoma. The aim of my project was to analize the proteome of mitotic PFN1 KO RPE1 cells with bioinformatic tools, in order to acquire more information about the molecular events underlying such defects, and try to identify the molecular pathway involved.
In this regard, I sinchronized RPE1 PFN1 WT and PFN1 KO cells in the M phase of the cell cycle in order to to further analyze their proteome through mass spectrometry: 165 proteins resulted de-regulated in the KO, so I used some bioinformatic tools (DAVID, Metascape, STRING, Reactome) to analyze them and make an hypotesis about the possible molecular pathway involved. Then I tested my hypotesis via western blots. The bioinformatic analysis of the RPE1 PFN1 KO proteome highlighted

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not only, as expectable, a downregulation of the proteins involved in the regulation of cell cycle progression and mitotic division, but, much more astonishing, an upregulation in the proteins of the energetic metabolism. It is now to discover if eventually there is a pfn1 moonlight function on the metabolism or if this is rather a result of the genomic instability gained due to the PFN1 KO.

Wet lab skills

- Cell culture: maintenance, freezing/thaw, cell count for precise cell number plating, cell plating on coverslips, cell cycle synchronization protocols
- Cell fixation and immunofluorescence staining
- Protein/DNA/RNA extraction
- Protein quantification via BCA/Bradford assay
- Western blotting
- SDS-PAGE
- Oligonucleotide design
- Agarose gel electrophoresis
- PCR, gel band purification, sample preparation for a sequencing facility
- DNA cloning
- DNA transfection
- generic lab equipment use: biological and chemical hood, inverted optical microscope, an overview of the confocal fluorescence microscope, centrifuges, block-heater, thermocycler, pHmeter, IBlot dry blotting system, spectrophotometer, nanodrop, multilabel plate reader, UV transilluminator, GelDoc.

Dry lab skills

- Microsoft office software
- GraphPad
- ImageJ
- Metascape
- DAVID
- STRING
- REACTOME
- KEGG pathways
- Ensembl
- Primer3

Additional responsabilities

- Lab waste disposal
- Lab solutions preparation
- Cell room cleaning shifts (biological hood, incubator)

Soft lab skills

- Lab meetings attendance and data exposure
- Journal club presentation
- Collaborative, supportive, enthusiastic team work

Scientific activity

Participation to the poster "Profilin 1 depletion interferes with the p53-mediated apoptotic response in osteosarcoma", presented at the European Calcified Tissue Society Conference in Liverpool on 15-18 april 2023: https://www.linkedin.com/in/marianna-ielasi-64575428b/overlay/1635539349931/single-media-viewer/?profileId=ACoAAEZpd5UB_ITftJ1B3Y89imLJhA1Q56RILnY

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Language skills

- Italian: native speaker
- English – B2 (spoken and written production); C1 (spoken and written comprehension)

Professional Memberships

Currently preparing the state exam for the Italian National Biologist Order membership.

References

- Federica Scotto di Carlo, Post-Doctoral Researcher at the Institute of Genetics and Biophysics (IGB), National Research Council of Italy (CNR), Naples, Italy/ Institute Curie, Paris, France
  [redacted]
- Prof. Tiziana Angrisano, Associated Professor at Federico Secondo University of Naples, Italy
  [redacted]
- Dr. Fernando Gianfrancesco, Research Director at the Institute of Genetics and Biophysics (IGB), National Research Council of Italy (CNR), Naples, Italy
  [redacted]

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