

WORKING EXPERIENCES

(11/2018 – Today)

Post-Doctoral fellowship at Bambino Gesù Pediatric Hospital

Department of Oncohematology, Bambino Gesù Pediatric Hospital Rome, Italy.
Dr. Rossella Rota's Lab

- Laboratory methods application: 2D and 3D cancer cell culture, cell transfection, generation of stable cell lines with lentivirus, western blot, protein, RNA and DNA extraction from cultured cells, Plasmid DNA extraction (miniprep, maxiprep), immunofluorescence, confocal microscopy, Flow cytometry analysis, ChIP and CoIP assays, luciferase reporter assay, CRISPR/CAS9 system, Proximity ligation assay, High-throughput drug screening, proteomic and phospho-proteomic samples preparation, Bioinformatic dataset analysis (ChIP-seq, RNA-seq, copy number alteration, patients survival, cell dependency analysis, DNA-methylation).

Theme of projects: 1) Role of the protein SKP2 in rhabdomyosarcoma and myogenic differentiation. 2) Targeting CDKs as a combination strategy in pediatric PAX3-FOXO1 rhabdomyosarcoma

(04/2018 – 10/2018)

Post-Doctoral fellowship at European Institute of Oncology (IEO)

Department of experimental oncology, European Institute of Oncology (IEO) Milan, Italy.
Prof. Pier Paolo Di Fiore Laboratory.

- Laboratory methods application: Cancer cell culture, cell transfection, generation of stable cell lines with lentivirus, western blot, protein, RNA and DNA extraction from cultured cells and mice tissues, Plasmid DNA extraction (miniprep, maxiprep), immunofluorescence, confocal microscopy, mice handling, breast cancer and bladder cancer patient derived xenograft, human and murine tumour digestion, determination of sphere forming efficiency, in vivo bladder carcinogenesis.

Theme of projects: 1) Role of the tumour suppressor NUMB in bladder cancer. 2) Role of the cyclin dependent kinase CDK12 in breast cancer.

- (11/2014 – 01/2018) **PhD in Biochemistry and Molecular Biology**
 Department of experimental medicine and surgery, University of Rome “Tor Vergata”, Prof G. Melino’s (gm89@le.ac.uk) Laboratory. Supervisor: Prof. Massimiliano Agostini (M.Agostini@med.uniroma2.it)
- Laboratory methods application: Cancer cell culture, human and murine primary keratinocytes culture, cell transfection, migration and proliferation assays, cloning techniques, PCR, RT-PCR, qRT-PCR, western blot, protein, RNA and DNA extraction from cultured cells and mice tissues, Plasmid DNA extraction (miniprep, maxiprep), immunofluorescence, confocal microscopy, Flow cytometry analysis (PI, EdU, ROS), ChIP and CoIP assays, luciferase reporter assay, CRISPR/CAS9 system, subcellular protein fractionation, mice handling, genotyping and weaning, colonies management, in vivo skin carcinogenesis, biotin tracer assay, transdermal diffusion assay.
- Theme of thesis:** ZNF750 represses breast cancer cell migration by inhibiting the expression of LAMB3 and CTNNAL1.
 Phenotypic characterization of ZNF750 KO mouse.

- (07/2011 – 08/2011) **Stage**
 Farnigea Farmaceutici s.r.l., R&D laboratory
- Good manufacturing practice in pharmaceutical industry, standard operating procedures of the research laboratory, good laboratory practice related to pharmaceutical laboratory technologies and development, standard operating procedures relating to the formulation activities and documentation; basics of laboratory equipment for analysis and development of formulations (viscometer, HPLC, pH meter, technical and analytical scales); regulatory affairs training.
- Type of business or sector:** Pharmaceutical company

EDUCATION AND TRAINING

- (12/2012 – 10/2014) **Master’s Degree in “Genetic and Molecular Biology (110/110 cum laude)**
 University of Rome “La Sapienza”
 Department of Biology and Biotechnology C. Darwin, Prof. Paolo Costantino’s laboratory.
 Supervisor: Prof. Giovanna Serino (giovanna.serino@uniroma1.it)
- Master’s thesis Laboratory activities: cloning techniques, PCR, PCR colony, RT-PCR, yeast two hybrid system, western blot, DNA and RNA from plant, protein extraction from plant and *S. Cerevisiae*, plasmid DNA extraction(miniprep), site directed mutagenesis
- Theme of thesis:** 1) Molecular substrate identification of F-box protein CFK1 of *Arabidopsis thaliana*; 2) Molecular interactors identification of subunit 6 of CSN complex of *Arabidopsis thaliana*.
- (10/2007 – 12/2012) **Bachelor’s Degree in Biological sciences**
 University of Rome “La Sapienza”
 Department of Biology and Biotechnology C. Darwin, Prof. Paolo Costantino’s laboratory.
 Supervisor: Prof. Giovanna Serino

- Bachelor's thesis Laboratory activities: PCR, RT-PCR, genomic DNA extraction from Plant tissues, Plasmid DNA extraction, electrophoresis on agarose gel, cloning techniques, E.Coli transformation, GUS assay for histochemical analysis.

Theme of thesis: Genotypic analysis of mutant plants for genes DAG3 and DOF24 in *Arabidopsis thaliana*.

PERSONAL COMPETENCES

Native language Italian

Other language

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken Production	
English	B2	B2	B2	B2	B2
Trinity College, Watford, Ireland and Berlitz English School, Boston, USA					

Communication skills High aptitude for teamwork, gained during university laboratory work. Ability to relate and integrate into new reality in a very short time. High reliability, strong willingness to listen and in helping others.

Organizational and management skills Good skills of collaboration and project management. Capacity in analysis and organization of data and information. Excellent mediation skills, problem solving and group organization.

Professional skills Technical skills and competences:

- **Molecular biology and biochemical techniques:** PCR, RT-PCR, qRT-PCR, electrophoresis on agarose gel, Western blot, protein extraction (from Plant tissues, cancer cell culture, primary human e murine keratinocytes and mice tissues), DNA extraction (from Plant tissues, cancer cell culture, primary human e murine keratinocytes and mice tissues), RNA extraction (from Plant tissues, cancer cell culture, primary human e murine keratinocytes and mice tissues) Plasmid DNA extraction (miniprep, midiprep and maxiprep), cloning techniques, site directed mutagenesis, yeast two hybrid system, ChIP assay, ColP assay, CRISPR/CAS9 system, subcellular protein fractionation, immunofluorescence, luciferase reporter assay.
- **Cellular biology techniques:** cancer cell culture, primary human and murine keratinocytes culture, keratinocytes differentiation in vitro, murine keratinocytes isolation from mice skin, human and murine tumour digestion, flow cytometry analysis (PI, EdU, ROS), optical microscopy, stereomicroscopy, confocal microscopy, trans-well migration/invasion assay, clonogenic assay, cell transfection, gene silencing, generation of stable cell lines with lentivirus, E.Coli and Agrobacterium transformation.
- **Transgenic model:** mouse handling, colonies management, mice weaning, genotyping, dissection, biotin tracer assay, transdermal diffusion assay, In vivo skin carcinogenesis, in vivo bladder carcinogenesis, breast cancer and bladder cancer patient derived xenograft, *Arabidopsis thaliana* manipulation and growth, seed germination assay, plant transformation with Agrobacterium tumefaciens, genotyping of *Arabidopsis thaliana* mutant plants, GUS assay for histochemical analysis.
- **Bioinformatics:** SerialCloner, Geneious, CBIportal for cancer genomics, OncoPrint, Chemoprofiling, UALCAN, David for geneontology, UCSC Genome Browser (ChIP-Seq, RNA-Seq analysis), GEO Datasets, Geo Profile, MatInspector, IGV, UCSC Xena, GEPIA 2, GSEA, R² platform, KMplotter, ImageJ.

Digital skills	Excellent knowledge of Windows and MAC/OS operating system, Microsoft Office (Access, Excel, PowerPoint, Word), Internet Explorer, Safari and Mail Browser. Good knowledge of Adobe Photoshop and Illustrator.
Other skills	Amateur musicians of classic and acoustic guitar.
Driving licence	B
Further informations	<hr style="border: 1px solid blue;"/>

Publications

* Equal contribution

- Pomella, S., Sreenivas, P., Gryder, B.E., Wang, L., **Cassandri, M.**, Baxi, K., Hensch, N.R., Carcarino, E., Song, Y., Yohe, M., Amadio, B., Caruana, I., De Stefanis, C., De Vito, R., Locatelli, F., Chen, Y., Chen, E.Y., Houghton, P., Khan, J., Rota, R., and Ignatius, M.Y.. Liaison between SNAI2 and MYOD enhances oncogenesis and suppresses differentiation in Fusion-Negative Rhabdomyosarcoma. *Nat. Commun.* (2021).
- Perrone, C.*, Pomella, S.*, **Cassandri, M.***, Braghini, M.R., Pezzella, M., Locatelli, F., Rota, R. FAK signalling in Rhabdomyosarcoma. *Int. J. Mol. Sci* (2020).
- **Cassandri, M.**, Fioravanti, R., Pomella, S., Valente, S., Rotili, D., Del Baldo, G., De Angelis, B., Rota, R., and Mai, A.. CDK9 as a Valuable Target in Cancer: From Natural Compounds Inhibitors to Current Treatment in Pediatric Soft Tissue Sarcomas. *Front. Pharmacol.* 11 (2020).
- Butera A., **Cassandri M.**, Rugolo F., Agostini M., Melino G. The ZNF750-RAC1 axis as potential prognostic factor for breast cancer. *Cell Death Discovery* (2020).
- **Cassandri, M.**, Butera, A., Amelio, I., Lena, A.M., Montanaro, M., Mauriello, A., Anemona, L., Candi, E., Knight, R.A., Agostini, M., and Melino G.. ZNF750 represses breast cancer invasion via epigenetic control of prometastatic genes. *Oncogene* (2020).
- **Cassandri, M.**, Smirnov, A., Novelli, F., Pitolli, C., Agostini, M., Malewicz, M., Melino, G., and Raschella, G.. Zinc-finger proteins in health and disease. *Cell Death Discovery*. (2017).
- Rossetti A., Petragano F., Milazzo L., Vulcano F., Macioce G., Codenotti S., **Cassandri M.**, Pomella S., Cicchetti F., Fasciani I., Antinozzi C., Di Luigi L., Maggio R., Festuccia C., De Felice F., Vergine M., Fanzani A., Rota R., Polimeni A., Tombolini V., Gravina G.L., Marampon F. Romidepsin (FK228) fails in counteracting the transformed phenotype of rhabdomyosarcoma cells but efficiently radiosensitizes, *in vitro* and *in vivo*, the alveolar phenotype subtype. Under review on *Int. J. Radiat. Biol.*
- Tiago T., Hummel B., Galli V., Vinet J., Morelli F., Basile V., Mediani L., Antoniani F., Pomella S., **Cassandri M.**, Garone MG, Silvestri B., Cimino M., Mouly V., Poser I., Rosa A., Alberti S., Rota R., Ben-Zvi A., Sawarkar A., Carra S. HSPB3 is a specialized nuclear chaperone engaged in muscle cell differentiation by acting on LBR and gene expression. Submitted on *Nat. Cell Biol.*
- Pomella, S.*, **Cassandri, M.***, Cossetti, C., Phelps, D., Perrone, C., Colletti, M., Wachtel, M., Carcarino, E., Gualtieri, A., Pignata, L., Walters, Z.S., De Salvo, M., Di Giannatale, A., Di Giorgio, E., Rodriguez, S., Roma, J., Gallego, S., Keller, C., Schafer, B., Carlesso, N., Brancolini, C., Guccione, E., Shipley, J., Miele, L., Houghton, P., Locatelli, F., Rota, R.. A MyoD-SKP2-p57^{kip2} loop is deregulated in embryonal rhabdomyosarcoma and negatively impacts myogenic differentiation. *Manuscript in preparation*

- **Cassandri, M.***, Pomella, S.*, Perrone, C., Pezzella, M., De Angelis, B., Quintarelli, C., Calin, G., Barr, F., Shipley, J., Locatelli, F., and Rota, R. Impact of DNA-methyltransferases alterations on adult and pediatric cancers: an *in silico* analysis. *Manuscript in preparation*.
- Conferences
- Poster at ACC 4th annual meeting: New technologies and strategies to fight cancer 20-22 November 2019 Aula Magna Palazzo del Rettorato, University of Rome “Sapienza”.
Poster Title: NOTCH inhibition leads to MET activation in Rhabdomyosarcoma cells. Clara Perrone, Michele Pezzella, Giulia Pericoli, Antonio Camera, Biancamaria Cembrola, Silvia Pomella, **Matteo Cassandri**, Cristina Cossetti, Maria Vinci, Emmanuel de Billy, Concetta Quintarelli, Franco Locatelli, Biagio De Angelis, Rossella Rota
 - Speaker at the “10th Tuscany retreat on cancer research and apoptosis: genetic profiling, resistance mechanisms and novel treatment concepts in cancer “at Palazzo di Piero, Chiusi, Tuscany, Italy, 5th-12th of August 2017
Talk Title: Role of ZNF750 in Breast cancer
- Certificates and Courses
- EORTC-PAMM Educational course “(Pre)-clinical pharmacology of anticancer drugs made (amusingly) simple”. Palazzo della Gran Guardia, Verona, February 2019.
 - Third edition of the course of access to use the service facilities for animal experimentation, University of Rome Tor Vergata.
 - State exam for Biologist
- Reviewer activity
- Reviewer activity for PloS one.