

CURRICULUM FORMATIVO E PROFESSIONALE**PERSONAL INFORMATION
RESEARCH EXPERIENCE****Federica Feo****October 2021 – present****Research fellow**

AOU Meyer IRCCS, Firenze

Project name: LysoLate- “LATE ONSET LYSOSOMAL STORAGE DISORDERS (LSDs) IN THE DIFFERENTIAL DIAGNOSIS OF NEURODEGENERATIVE DISEASES: DEVELOPMENT OF NEW DIAGNOSTIC PROCEDURES AND FOCUS ON POTENTIAL PHARMACOLOGICAL CHAPERONES (PCs)”.

Supervisor: Prof. ssa Amelia Morrone

October 2020 – September 2021**Research fellow**

Dipartimento di Neuroscienze, Psicologia, Area del Farmaco e Salute del Bambino (NEUROFARBA) – Università degli Studi di Firenze, Firenze

Project name: “Errori Congeniti del Metabolismo: sviluppo di nuovi metodi diagnostici e studi funzionali e farmacologici”

Internship at AO Meyer, Firenze

Supervisor: Prof. ssa Amelia Morrone

February - September 2020**Research fellowship post-doc**

Dipartimento di Biologia - University of Naples “Federico II”, Naples

Internship at CEINGE- Advanced Biotechnologies, Napoli

Supervisor: Prof. ssa Caterina Missero

February 2017- February 2020**PhD student in Molecular Medicine and Medical Biotechnology**

University of Naples “Federico II”, Naples

Internship at CEINGE- Advanced Biotechnologies, Napoli

PhD project: Dissecting the function of the transcription factor Foxe1 in non-melanoma skin cancers.

Supervisor: Prof. ssa Caterina Missero

June 2018**Assistant at EADV-ESDR Summer Research Workshop**

CEINGE- Advanced Biotechnologies, Napoli

Project: “Advanced molecular biology tools in dermatological research”- EADV-ESDR.

January – March 2013**Lab Analyst**

Internship at O.P. “A. Maresca”.

Principal Activity: Clinical analysis in Microbiology and Virology, Clinical Chemistry, Immunometric analysis.

Supervisor: Dott. G. Vitiello

EDUCATION

- 20 January 2024** **Registration at “Albo dei Biologi”**
Consiglio Direttivo dell’Ordine dei Biologi della Toscana e dell’Umbria
N° of registration: ToU_A4203
- 22 July 2021** **Habilitation - Abilitazione all’esercizio della professione di Biologo sez. A**
University of Naples “Federico II”, Naples
- 16 April 2020** **PhD in “ Molecular Medicine and Medical Biotechnology ”**
University of Naples “Federico II”, Naples
Internship at CEINGE- Advanced Biotechnologies
PhD project: Dissecting the function of the transcription factor Foxe1 in non-melanoma skin cancers.
Supervisor: Prof. Caterina Missero

Assessment: Excellent.
- 15 June 2016** **Master Degree in Biology.**
University of Naples “Federico II”, Naples
Internship at the Department of Biology.
Title of thesis: Functional characterization of the transcription factor Foxe1 in the Non Melanoma Skin Cancer cells.
Scientific field: Molecular Biology.
Main Supervisor: Prof. Caterina Missero

Marks: 110/110.
- 11 November 2011** **Bachelor Degree in Molecular Biology.**
University of Naples-Federico II, Naples.
Internship at the Department of Biology.
Title of the thesis: Hybridization *in toto* of the neural crest marker Sox9 in *Xenopus laevis* embryos treated with PSNPs.
Scientific field: Evolutionary biology.
Main Supervisor: Prof. Rosa Carotenuto

Marks: 110/110 cum laude.

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPOKEN		WRITTEN
	Listening	Reading	Oral Interaction	Oral Expression	
English	B1	B1	B1	A2	B1
French	A2	A2	A2	A2	A2

Levels: A1/A2: Basic - B1/B2: Autonomous - C1/C2 Advanced

Self-evaluation form

Competence and organizational skills

Excellent attitude to team working. High scientific knowledge of skin biology, physiology and pathophysiology. High scientific knowledge of rare genetic metabolic disorders, in particular Lysosomal storage diseases (LSDs). Good ability to work independently and to manage others work. Track record of oral presentations to scientific meetings. High attitude to support troubleshooting and networking. Flexibility and reliability. Strong communication skills and goal oriented person. Knowledge of data collection and interpretation.

TECHNICAL SKILLS

Cell culture: culture, maintenance and propagation of normal and cancer human/murine cell lines. Isolation and culture of primary mouse keratinocytes from mouse epidermis. Plasmid DNA transfection in human and murine cells and preparation of stable cell clones. Transient gene silencing through "RNA interference". Wound healing assay. Boyden chamber assay. Cell adhesion assay. Tumorsphere assay. BrdU cell proliferation assay. Preparation of retroviral and lentiviral vectors in HEK293T cells. Lentiviral and retroviral transduction of mammalian cells. Clonogenic Assay. hHDFn conversion to iKC assay. Immunofluorescence staining. Reprogramming of skin fibroblasts derived from patients into induced pluripotent stem cells (iPSCs). Molecular characterization and evaluation of pluripotency in iPSC lines. iPSC *in vitro* differentiation in the three germ layers. Induction of neuronal differentiation. Molecular characterization of Neural Precursor cells (NPCs). Pharmacological chaperones *in vitro* treatments. Lymphocyte isolation and culture from peripheral blood. Isolation of leucocytes from peripheral blood.

Molecular Biology: amplification of DNA fragments by PCR, extraction and purification of total RNA from cultured cells and analysis of gene expression by Real Time-PCR. Extraction and purification of total DNA from cultured cells. Extraction of total proteins from cells and analysis by SDS-PAGE and Western Blotting. Preparation of nuclear and cytoplasmic extracts from cells. Co-immunoprecipitation assays. ChIP assay. Luciferase assays. Analysis and validation of genetic variants. Analysis of 'short tandem str-repeats'. Cytogenetic analysis.

Mouse models: Mice genotyping, intraperitoneal injection of tamoxifen in CRE-ER conditional knock out mice. Chemical carcinogenesis (DMBA/TPA). BrdU proliferation assay *in vivo* by intraperitoneal injection.

Hystology: isolation and paraffin or Optimal Cutting Temperature (OCT) embedding of mouse tissues and organs. Sectioning by microtome of mouse tissues. Hematoxylin and eosin staining of tissue sections. Immunofluorescence staining of tissues. Immunohistochemical staining. Image acquisition by widefield and confocal fluorescence microscopes.

Bioinformatics: Functional clustering and Gene Ontology analysis (DAVID). RNAseq analysis. Bioinformatics platforms (NCBI, UCSC Genome Browser, geneMANIA, Metascape, EnrichR, GREAT, MEMEChIP, Galaxy, GSEA). Statistical scientific Data Analysis (calculation of mean, standard deviation, T-test, ANOVA, regression, sample size determination and hypothesis testing). Programs: Office (professional use of Excel, Word, PPT).

ADDITIONAL INFORMATION

Patent B

PUBLICATIONS

TBX1 and Basal Cell Carcinoma: Expression and Interactions with Gli2 and Dvl2 Signaling. Caprio C., Varricchio S., Bilio M., **Feo F.**, Ferrentino R., Russo D., Staibano S., Alfano D., Missero C., Ilardi G. and Antonio Baldini. *International journal of molecular sciences*, 2020.

Fluorescent In Situ Staining and Flow Cytometric Procedures as New Pre-Diagnostic Tests for Sialidosis, GM1 Gangliosidosis and Niemann-Pick Type C. Claudia Capitini, **Federica Feo**, Anna Caciotti, Rodolfo Tonin, Matteo Lulli, Domenico Coviello, Renzo Guerrini, Martino Calamai, Amelia Morrone. *Biomedicines*, 2022.

Biocompatible and Printable Ionotronic Sensing Materials Based on Silk Fibroin and Soluble Plant-Derived Polyphenols. Irene Chiesa, Carmelo De Maria, Rodolfo Tonin, Francesca Ripanti, Maria Rachele Ceccarini, Carlotta Salvatori, Lorenzo Mussolin, Alessandro Paciaroni, Caterina Petrillo, Emanuele Cesprini, **Federica Feo**, Martino Calamai, Amelia Morrone, Antonino Morabito. *ACS Omega* 2022.

Generation of human induced pluripotent stem cell line (AOUMEY001-A) from a patient affected by Congenital disorders of glycosylation (ALG8-CDG) using self-replicating RNA vector. Rodolfo Tonin, **Federica Feo**, Silvia Falliano, Lorenzo Ferri, Laura Giunti, Martino Calamai, Elena Procopio, Francesco Mari, Valerio Conti, Ilaria Fanelli, Franco Bambi, Renzo Guerrini, Amelia Morrone. *Stem Cell Research* 73, 2023.

Identification of GM1-Ganglioside Secondary Accumulation in Fibroblasts from Neuropathic Gaucher Patients and Effect of a Trivalent Trihydroxypiperidine Iminosugar Compound on Its Storage Reduction. Costanza Ceni, Francesca Clemente, Francesca Mangiavacchi, Camilla Matassini, Rodolfo Tonin, Anna Caciotti, **Federica Feo**, Domenico Coviello, Amelia Morrone, Francesca Cardona, Martino Calamai. *Molecules*, 2024.

Generation of a human induced pluripotent stem cell line from a patient with GM3 synthase deficiency using self-replicating RNA vector. Rodolfo Tonin, **Federica Feo**, Silvia Falliano, Laura Giunti, Martino Calamai, Elena Procopio, Francesco Mari, Vittorio Scirucchio, Valerio Conti, Ilaria Fanelli, Franco Bambi, Renzo Guerrini, Amelia Morrone. *Stem Cell Research* 77, 2024.

Participation in Congresses

Feo F., Antonini D., Missero C. Functional characterization of the transcription factor FOXE1 in Non Melanoma Skin Cancers. ABCD Congress. September 2019. Bologna – Italy.

Feo F., Missero C. Dissecting function of the transcription factor FOXE1 in the pathogenesis of Non Melanoma Skin Cancers. EMBO Workshop. Cellular signalling and cancer therapy. September 2018. Cavtat - Croatia.

Feo F., Missero C. Dissecting function of the transcription factor FOXE1 in the pathogenesis of Non Melanoma Skin Cancers. EMBO Practical Course. Current methods in cell biology. September 2017. Heidelberg – Germany

F Feo, L Ferri, E Procopio, M A Donati, A Caciotti, M Sibilio, M Rigoldi, V Leuzzi, R Battini, A Fiumara, D Concolino, F Manti, F Deodato, P Prontera, G Molinaro, S Savasta, M C Maggio, R Guerrini, A Morrone. Le potenzialità dell'approccio NGS per la diagnosi delle malattie da accumulo lisosomiale. XI Congresso SIMMESN. December 2021.

Tonin R., Rinaldi M., **Feo F.**, Cardona F., Matassini C., Ramat S., Caremani L., Della Bona M., la Marca G, Mannaioni G., Renzo Guerrini, Amelia Morrone. Screening biochimico della GCase e del gene GBA in una popolazione di 223 pazienti affetti da PD. XI Congresso SIMMESN. December 2021.

Federica Feo, Lorenzo Ferri, Elena Procopio, Silvia Falliano, Maria Alice Donati, Anna Caciotti, Michelina Sibilio,

Miriam Rigoldi, Vincenzo Leuzzi, Roberta Battini, Agata Fiumara, Daniela Concolino, Filippo Manti. The performance of a targeted-resequencing NGS panel in the diagnosis of Lysosomal Storage Diseases. SSIEM Annual Symposium 2022.

Marina Rinaldi, Rodolfo Tonin, **Federica Feo**, Silvia Falliano, Francesca Cardona, Camilla Matassini, Silvia Ramat, Luca Caremani, Alessandra Govoni, Maria Luisa Della Bona, Giancarlo la Marca, Guido Mannaioni, Renzo Guerrini. Biochemical screening of GCCase and the GBA gene analysis in a population of 252 patients with Parkinson disease. SSIEM Annual Symposium 2022.

Rinaldi M., Tonin R., **Feo F.**, Falliano S., Cardona F., Clemente F., Matassini C., Ramat S., Caremani L., Govoni A., Della Bona M., la Marca G., Guerrini R., Morrone A. GBA genotype- Parkinson's phenotype correlation in a cohort of 252 patients from the Tuscany Region. 24th ESGLD Workshop and Graduate Course. September 2022.

Federica Feo, Claudia Capitini, Anna Caciotti, Rodolfo Tonin, Matteo Lulli, Domenico Coviello, Renzo Guerrini, Martino Calamai, Amelia Morrone. Fluorescent In Situ Staining and Flow Cytometric Procedures as New Pre-Diagnostic Tests for Sialidos, GM1 Gangliosidosis and Niemann-Pick Type C. 24th ESGLD Workshop and Graduate Course. September 2022.

F. Feo, A. Caciotti, L. Tramacere, S. Ramat, R. Tonin, S. Falliano, A. Govoni, A. Paoli, F. Marin, D. Mei, E. Parrini, R. Guerrini, A. Morrone. LSDs ad insorgenza tardiva nella diagnosi differenziale delle Malattie neurodegenerative. XIII CONGRESSO NAZIONALE SIMMESN 2023.

Federica Feo, Rodolfo Tonin, Marina Rinaldi, Anna Caciotti, Elena Procopio, Daniele Bani, Renzo Guerrini, Amelia Morrone. Development of a cellular model for Morquio A Syndrome. SSIEM Annual Symposium 2024.

Anna Caciotti, **Federica Feo**, Luciana Tramacere, Silvia Ramat, Alessandra Govoni, Luca Caremani, Giulia Grigioni, Davide Mei, Silvia Falliano, Francesca Marin, Lorenzo Ferri, Antonella Paoli, Marina Rinaldi, Giancarlo la Marca, Daniela Ombrone, Renzo Guerrini, Amelia Morrone. Alta prevalenza di varianti nel gene GALC in pazienti adulti con neurodegenerazione ad eziologia ignota. XIV CONGRESSO NAZIONALE SIMMESN 2024.

2018: Assistant at EADV-ESDR Summer Research Workshop - Advanced molecular biology tools in dermatological research (4-8 June 2018 - Naples, Italy)

2018: Member of *Società Italiana Biofisica e Biologia molecolare* (SIBBM)

Awards

2018: Member of Associazione Biologia Cellulare e del Differenziamento (ABCD)

2018: Travel Grant at EMBO Workshop "Cellular signalling and cancer therapy". From 14 – 18 September 2018 in Cavtat, Croatia.

2017: EMBO Practical Course "Current methods in cell biology". From 11 - 19 September 2017 in Heidelberg, Germany.

2016: Student Travel Grant at SIBBM congress "From Single Cell Analysis to precision medicine". From 16-18 June, Naples, 2016.

Firenze, 01.10.2020

2018: Assistant at EADV-ESDR Summer Research Workshop - Advanced molecular biology tools in dermatological research (4-8 June 2018 - Naples, Italy)

2018: Member of *Società Italiana Biofisica e Biologia molecolare* (SIBBM)

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2016: Student Travel Grant at SIBBM congress "From Single Cell Analysis to precision medicine". From 16-18 June, Naples, 2016.

Firenze, 14.11.2024

Firma

Federica Feo

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