Curriculum Vitae Europass

Personal information

Name	Francesca Bufalieri
Work Address	Viale Regina Elena, 291 – 00161 – Rome, Italy
Work Number	+39-06-49255132
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Mother tongue	Italian
Other language	English

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user – C1/C2 Proficient Common European Framework of Reference for Languages

Education

PH.D. IN **MOLECULAR MEDICINE**

DECEMBER 22TH 2016 | SAPIENZA UNIVERSITY, ROME

C*um laude*

Thesis: “ERAP1: un nuovo bersaglio terapeutico per tumori dipendenti dalla via di segnale di Hedgehog”.

MASTER DEGREE IN **GENOMIC BIOTECNOLOGY**

MARCH 28TH 2013 | SAPIENZA UNIVERSITY, ROME

Cum laude

Thesis: “Studio dell’inibizione della demetilazione di H3K4 in cellule di mammifero”.

BACHELOR DEGREE IN **BIOLOCICAL SCIENCES**

JANUARY 18TH 2011 | SAPIENZA UNIVERSITY, ROME

Thesis: “Creazione di un database di modulazione genica indotta da radiazioni ionizzanti nei mammiferi”.

Current Position

March 1st 2017- 07/11/2021	*Postdoctoral researcher* Sapienza University, Dept of Molecular Medicine (Rome).

Previous Position

November 1ST 2016- January 31TH 2017	*Scholarship Holder* Istituto Pasteur Italia, Fondazione Cenci Bolognetti (Rome).
November 1ST 2013- October 31TH 2016	*Ph.D. student* Sapienza University, Dept of Molecular Medicine (Rome).
November 1ST 2013- October 31TH 2016	*Ph.D. scholarship* Center for Life Nano Science@Sapienza, Istituto Italiano di Tecnologia, Rome, Italy

Career breaks

June 3RD 2018- September 2ND 2018	*Parental leave*
December 27TH 2017- June 2ND 2018	*Maternity leave*

Most relevant competences acquired

December 2019	*FELASA – Federation of European Laboratory Animal Science Associations*. Cat. B (n. F023/09) Fondazione Santa Lucia IRCCS, Centro Europeo di Ricerca sul Cervello (CERC), Rome.

Technical skills

Cell culture manipulation: adherent and suspension cells, stem cells, primary culture from mouse and human tissue, transfection of nucleic acids. Proliferative, clonogenic and apoptotis assays. Luciferase assays. Extraction of DNA, RNA, miRNAs and proteins. Southern, Northern and Western blot. Immunoprecipitation and Chromatin-immunoprecipitation (ChIP). Ubiquitylation *in vivo* and *in vitro* Assays. Restrictions, cloning and mutagenesis. Gene Knock-down and silencing. Recombinant proteins preparation. Bacterial transformation, Miniprep, Maxiprep. Preparation, purification and infection of lentiviruses, work in class III laboratory. Vector design: primers design, digestions, ligations, cloning. Immunofluorescence, immunohistochemistry. Fluorescence and light microscopy. Mouse model breading and manipulation.

Research fields

- New multi-targeting approaches in Hedgehog-dependent cancers.

- Molecular mechanisms involved in GBM tumorigenesis.

Conferences

September 2015	SIPMET Young Scientists Meeting, Alba (CN) Poster: *ERAP1 is a novel drug target in the oncogenic Hedgehog signaling pathway*
April 2016	ABCD National Ph.D Meeting, Salerno Poster: *ERAP1 is a novel drug target in the oncogenic Hedgehog signaling pathway*
September 2016	FISV, Federazione Italiana Scienze della vita, Sapienza University (Rome) Oral presentation: *ERAP1 is a novel drug target in the oncogenic Hedgehog signaling pathway*
September 2019	SIPMeT Young Meeting, Plesso Didattico Morgagni, (Florence) Poster: *ERAP1 promotes the Hedgehog signaling and medulloblastoma development by controlling βTrCP/USP47 axis*
November 2019	61st Annual Meeting of The Italian Cancer Society, Naples Oral presentation: *ERAP1 promotes the Hedgehog signaling and medulloblastoma development by controlling βTrCP/USP47 axis*
November 2020	3rd Brainstorming Research Assembly For Young Neuroscientists, online congress Oral presentation: *The RNA-Binding Ubiquitin Ligase MEX3A Affects Glioblastoma Tumorigenesis by Inducing Ubiquitylation and Degradation of RIG-I*
June 2021	III International AICC exosome meeting, online congress *Member of scientific and organising committee*
December 2021	SIPMeT Young Scientist Meeting, Perugia Poster: *Glabrescione B encapsulated in self-assembling micelles inhibits tumor growth in preclinical models of Hedgehog-dependent medulloblastoma*

Awards

Poster Award "A.Gulino": "*Glabrescione B encapsulated in self-assembling micelles inhibits tumor growth in preclinical models of Hedgehog-dependent medulloblastoma"*

SIPMeT Young Scientist Meeting, December 10-11,2021, Perugia

Publications

- **Proteolysis-Targeting Chimera (PROTAC): Is the Technology Lookingat the Treatment of Brain Tumors?**
  Ludovica Lospinoso Severini, Francesca Bufalieri, Paola Infante, Lucia Di Marcotullio
  Front Cell Dev Biol. 2022. *Accepted*

- **ERAP1 as an emerging therapeutic target for medulloblastoma**
  Francesca Bufalieri, Doriana Fruci, Lucia Di Marcotullio
  Trends Cancer. 2021 Oct 19:S2405-8033(21)00195-3.

- **Harnessing the Activation of RIG-I Like Receptors to Inhibit Glioblastoma Tumorigenesis**
  Francesca Bufalieri, Irene Basili, Lucia Di Marcotullio, Paola Infante.
  Front Mol Neurosci, 2021 July; 14: 710171.

- **Glabrescione B delivery by self-assembling micelles efficiently inhibits tumor growth in preclinical models of Hedgehog-dependent medulloblastoma**
  Paola Infante, Alessio Malfanti , Deborah Quaglio, Silvia Balducci, Sara De Martin, Francesca Bufalieri, Francesca Mastrotto, Irene Basili , Mariangela Garofalo, Ludovica Lospinoso Severini, Mattia Mori, Isabella Manni, Marta Moretti, Carmine Nicoletti, Giulia Piaggio, Paolo Caliceti , Bruno Botta , Francesca Ghirga , Stefano Salmaso, Lucia Di Marcotullio.
  Cancer Lett. 2021 Feb; 499, 220–231.

- **The SHH/GLI signaling pathway: a therapeutic target for medulloblastoma**
  Ludovica Lospinoso Severini, Francesca Ghirga, Francesca Bufalieri, Deborah Quaglio, Paola Infante, Lucia Di Marcotullio.
  Expert Opin Ther Targets 2020 Sep 29;1-23.

- **DUBs Activating the Hedgehog Signaling Pathway: A Promising Therapeutic Target in Cancer**
  Francesca Bufalieri, Ludovica Lospinoso Severini, Miriam Caimano, Paola Infante, Lucia Di Marcotullio.
  Cancers (Basel) 2020 Jun; 12(6): 1518.

- **Dual SMO/BRAF Inhibition by Flavonolignans from *Silybum marianum***
  Antonia Diukendjieva, Maya M. Zaharieva, Mattia Mori, Petko Alov, Ivanka Tsakovska, Tania Pencheva, Hristo Najdenski, Vladimír Křen, Chiara Felici, Francesca Bufalieri, Lucia Di Marcotullio, Bruno Botta, Maurizio Botta, Ilza Pajeva.
  Antioxidants (Basel) 2020 May; 9(5): 384.

- **The RNA-Binding Ubiquitin Ligase MEX3A Affects Glioblastoma Tumorigenesis by Inducing Ubiquitylation and Degradation of RIG-I**
  Francesca Bufalieri, Miriam Caimano, Ludovica Lospinoso Severini, Irene Basili, Francesco Paglia, Luigi Sampirisi, Elena Loricchio, Marialaura Petroni, Gianluca Canettieri, Antonio Santoro, Luca D'Angelo, Paola Infante, Lucia Di Marcotullio.
  Cancers (Basel). 2020 Feb; 12(2): 321.

- **A Smo/Gli Multitarget Hedgehog Pathway Inhibitor Impairs Tumor Growth**
  Ludovica Lospinoso Severini, Deborah Quaglio, Irene Basili, Francesca Ghirga, Francesca Bufalieri, Miriam Caimano, Silvia Balducci, Marta Moretti, Isabella Romeo, Elena Lorichhio, Marella Maroder, Bruno Botta, Mattia Mori, Paola Infante, Lucia di Marcotullio.
  Cancers (Basel). 2019 Oct 9;11(10).

- **ERAP1 promotes Hedgehog-dependent tumorigenesis by controlling USP47-mediated degradation of β-TrCP**
  Francesca Bufalieri, Paola Infante, Flavia Bernardi, Miriam Caimano, Paolo Romania, Marta Moretti, Ludovica Lospinoso Severini, Julie Talbot, Ombretta Melaiu, Mirella Tanori, Laura Di Magno, Diana Bellavia, Stéphanie Puget, Enrico De Smaele, Gianluca Canettieri, Daniele Guardavaccaro, Luca Busino, Angelo Peschiaroli, Simonetta Pazzaglia, Giuseppe Giannini, Gerry Melino, Franco Locatelli, Alberto Gulino, Olivier Ayrault, Doriana Fruci, Lucia Di Marcotullio.
  Nat Commun. 2019 ;10(1):3304.

- **Targeting Hedgehog Signalling through the Ubiquitylation Process: The Multiple Roles of the HECT-E3 Ligase Itch**
  Paola Infante, Ludovica Lospinoso Severini, Flavia Bernardi, Francesca Bufalieri, Lucia Di Marcotullio.
  Cells. 2019 Feb; 8(2): 98.

- **Itch/β-arrestin2-dependent non-proteolytic ubiquitylation of SuFu controls Hedgehog signalling and medulloblastoma tumorigenesis**
  Paola Infante, Roberta Faedda, Flavia Bernardi, Francesca Bufalieri, Ludovica Lospinoso Severini, Romina Alfonsi, Daniela Mazzà, Mariangela Siler, Sonia Coni, Agnese Po, Marialaura Petroni, Elisabetta Ferretti, Mattia Mori, Enrico De Smaele, Gianluca Canettieri, Carlo Capalbo, Marella Maroder, Isabella Screpanti, Marcel Kool6, Stefan M. Pfister, Daniele Guardavaccaro, Alberto Gulino and Lucia Di Marcotullio.
  Nat Commun, 2018. 9 (1): 976.

- **Maml1 acts cooperatively with Gli proteins to regulate sonic hedgehog signaling pathway**
  Roberta Quaranta, Maria Pelullo, Sabrina Zema, Francesca Nardozza, Saula Checquolo, Dieter Matthias Lauer, Francesca Bufalieri, Rocco Palermo, Maria Pia Felli, Alessandra Vacca, Claudia Talora, Lucia Di Marcotullio, Isabella Screpanti, Diana Bellavia.
  Cell Death Dis. 2017. 8 (7), e2942.

- **Selective targeting of HDAC1/2 elicits anticancer effects through Gli1 acetylation in preclinical models of SHH Medulloblastoma**
  Sonia Coni, Anna Barbara Mancuso, Laura Di Magno, Giulia Sdruscia, Simona Manni, Silvia Maria Serrao, Dante Rotili, Eleonora Spiombi, Francesca Bufalieri, Maria Laura Petroni, Monika Kusio-Kobialka, Enrico De Smaele, Elisabetta Ferretti, Carlo Capalbo, Antonello Mai, Pawel Niewiadomski, Isabella Screpanti, Lucia Di Marcotullio, Gianluca Canettieri.
  Scientific Rep. 2017. 7,44079.

- **An High-Throughput In Vivo Screening System to Select H3K4-Specific Histone Demethylase Inhibitors**
  Cecilia Mannironi, Marco Proietto, Francesca Bufalieri, Enrico Cundari, Angela Alagia, Svetlana Danovska, Teresa Rinaldi, Valeria Famiglini, Antonio Coluccia, Giuseppe La Regina, Romano Silvestri, Rodolfo Negri.
  PLoS One, 2014. 9(1): e86002.

- **General features of the transcriptional response of mammalian cells to low- and high-LET irradiation**
  Nicoletta Giusti, Francesca Bufalieri, Valerio Licursi, Tiziana Castrignano', Mattia D'Antonio, Roberto Amendola, Rodolfo Negri.
  Rend. Fis. Acc. Lincei, (2014). 25 (Suppl 1):S69–S74.

- **The transcriptional response of mammalian cancer cells to irradiation is dominated by a cell cycle signature which is strongly attenuated in non-cancer cells and tissues**
  Francesca Bufalieri, Valerio Licursi, Mattia D'Antonio, Tiziana Castrignanò, Roberto Amendola, Rodolfo Negri.
  Int J Radiat Biol. (2012). 88(11): 822–829.

Roma, 07/02/2022

Francesca Bufalieri