

Curriculum Vitae of Francesca Chiarini

PERSONAL DATA (Francesca Chiarini, Date of Birth 04-06-1978, **Researcher**)

NARRATIVE BIOSKETCH

Francesca Chiarini graduated in Biological Sciences at the University of Bologna in 2005 and from January 2006 to 2011 she worked at the Cellular Signaling Laboratory, Dept. of Biomedical Sciences, University of Bologna, where she was involved in investigating signal transduction pathways as innovative targets for the therapy of acute leukemias.

She established the relevance of PI3K/Akt/mTOR signal transduction, which is overactive in acute myeloid and lymphoid leukemias, and correlates with enhanced drug-resistance and poor prognosis. This cascade regulates a wide range of physiological cell processes, that include differentiation, proliferation, apoptosis, autophagy, metabolism, motility, and exocytosis.

She was also involved in the study of the role of PI-PLC beta1 and PI3K/Akt network, and their downstream targets in Myelodysplastic syndromes (MDS), which are clonal hematopoietic stem cell disorders, characterized by ineffective hematopoiesis in one or more of the bone marrow lineages.

In December 2011 she became a Researcher at the National Research Council of Italy and her studies continue to focus on mechanisms which sensitize cancer cells to treatments, to identify patients' specific signatures differentiating cases at higher sensitiveness/resistance to standard chemotherapy and targeted treatments. These results could be translated into clinical applications with the intent of increasing patient survival and reduce toxicities.

During her carrier, she established a long-lasting collaboration with the Division of Pediatric Oncology of the S.Orsola-Malpighi University Hospital in Bologna, which is the hub center of the Italian Association of Hematology and Oncology (AIEOP) network for Emilia-Romagna, in charge of the clinical and laboratory diagnosis of leukemic pediatric patients.

She collaborated with the Department of Hematology and Oncology of the Bambin Gesù Hospital in Rome and with the University of Padua, for an AIRC grant collaboration.

She currently collaborates with Dr. Katia Scotlandi, head of Experimental Oncology Laboratory at Rizzoli Orthopedic Institute in Bologna, to study the role of lamin A/C in bone sarcomas and she actively collaborates with international researchers, such as Prof J. Barata (Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa), and Prof S. Dovat (Department of Pediatrics, Division of Hematology and Oncology, Penn State Cancer Institute).

She also collaborates with Diatheva Biotech Company for the testing of a new human bivalent single-chain fragment variable diabody (anti-CD99) on T-cell Acute Lymphoblastic Leukemia (T-ALL).

In her career she instructed national and international students in molecular biological techniques. Her responsibilities also include the training of PhD students and the supervision of undergraduate students conducting their research thesis and dissertations.

Recently she was funded by the Italian Ministry of Education, University and Research (MIUR) for the development of a project entitled Epigenetic Regulation of Nuclear Inositides in Bone Marrow Microenvironment and MDS/AML Progression: New Targets, Therapy and Drugs.

Her results are published in Leukemia, Cancer Research, and Journal of Hematology and Oncology Journals. She is the first author of Trends in Pharmacological Sciences and BBA reviews. She is author or coauthor of a total of 70 papers. H-index:32 (Scopus).

EDUCATION AND TRAINING

Jan 07 –Dec 09	<p>University of Bologna, Department of Biomedical Sciences</p> <p>PhD in Human Morphological and Molecular Sciences</p>
Jul 2005	<p>University of Bologna, Department of Experimental Pathology</p> <p>Degree in Biological Sciences</p> <ul style="list-style-type: none"> • Studying the role of the chemokine receptor CCR7 in the metastatic process in murine mammary cancer.
Sept 03 – Jul 05	<p>University of Bologna, Department of Experimental Pathology</p> <p>Internship within research activity in the laboratory of “Immunology and Biology of Metastases” (Cancer Research Section, University of Bologna, Italy) directed by Prof. Pier-Luigi Lollini. She supported the laboratory staff in experimental procedures. In particular, her studies aimed to analyze the efficacy of prophylactic and therapeutic cancer cell vaccines in mice transgenic for the rat Her-2/neu oncogene.</p>

RESEARCH AND PROFESSIONAL EXPERIENCE

Feb 2016	<p>Winner Cancer Grant Program BD Biosciences</p> <p>http://www.bdbiosciences.com/us/applications/research/research-grants/m/researchresearchgrants/winners/cancergrants</p>
16 Dec 11-	<p>National Research Council, Institute of Molecular Genetics - UOS Bologna c/o Research Institute "Codivilla-Putti" I.O.R. Istituti Ortopedici Rizzoli</p> <ul style="list-style-type: none"> - Studying the role of Lamin A/C and its processing in migration, invasion and differentiation of bone sarcomas - Studying druggable signaling pathways that influence sensitivity to treatments in acute leukemia and MDS (myelodysplastic syndrome) settings -Identifying patients specific signatures differentiating cases at higher risk/resistance to standard chemotherapy in MDS and acute leukemia - Assessing the efficacy of treatments to be used <i>in vivo</i> in patients, with the intent of helping in designing more effective therapeutic protocols, in which traditional chemotherapeutic agents are combined with signal transduction inhibitors
Jan 10–15 Dec 11	<p>University of Bologna, Department of Biomedical Sciences</p> <p>-Responsible for performing most of the translational studies which were an integral part of a phase II national clinical trial (GIMEMA, AML1107, NCT00775593), where elderly patients with AML have been treated with a combination of temsirolimus, an allosteric mTOR inhibitor and clofarabine, a chemotherapeutic drug at low dosage.</p>
Jan 07 – Dec 09	<p>University of Bologna, Department of Biomedical Sciences</p> <p>-Study of signal transduction pathways as innovative targets for the therapy of acute leukemias.</p>

	<p>-Actively involved in establishing the relevance of PI3K/Akt/mTOR signal transduction, which is overactive in acute myeloid and lymphoid leukemias, where it correlates with enhanced drug-resistance and poor prognosis.</p> <p>-Study of the role of PI-PLCbeta1, PI3K/Akt network and their downstream targets in Myelodysplastic syndromes (MDS) and Acute Myeloid Leukemia (AML).</p>
Dic 05 – Dic 06	<p>University of Bologna, Department of Anatomical Sciences</p> <p>Involved in the study of innovative anti-tumor strategies with targeted therapies and their testing in models of human neoplasias.</p>

FUNDING PARTICIPATION:

- PRIN 2017 – Protocol: 2017RKWNJT Scientific coordinator: Matilde Y. Follo
Title: Epigenetic Regulation of Nuclear Inositides in Bone Marrow Microenvironment and MDS/AML Progression: New Targets, Therapy and Drugs
- AIRC - Investigator Grant - IG 2016 Id.19186 Principal Investigator: Giuseppe Basso
Title: Exploiting unique features of metabolic rewiring in wild type and Notch1/Pten mutated patients for T-ALL therapy (Collaborator)
- Cancer Grant Program BD Biosciences: Winner 2015-16
<http://www.bdbiosciences.com/us/applications/research/researchgrants/m/researchresearchgrants/winners/cancergrants>
- FIRB R.N. PROTEOMICA 2010- Protocollo: RBRN07BMCT_002 Scientific coordinator: Prof. Cecilia Gelfi.
Title: Italian Human ProteomeNet
- PRIN 2008 - Protocol: 2008THTNLC_001 Scientific coordinator: Prof. Alberto Martelli
Title: Constitutive activation of PI3K/AKT/mTOR in acute myeloid leukemia: analysis of gene expression profiles and clinical and biomolecular effects of its inhibition.
- PRIN 2005 - Protocol: 2005055737_001 Scientific coordinator: Prof. Lucio Cocco
Title: Signal transduction within the nucleus

COMMISSIONED RESEARCH STUDIES

- DIATHEVA Biotech. Company: Human bivalent single-chain fragment variable diabody (anti-CD99) testing on T-cell Acute Lymphoblastic Leukemia (T-ALL).
- Essential Integratori srl: *In vitro* testing of AHCC combined with ETAS in a model of colon cancer.

SCIENTIFIC REVIEWER OF PROJECTS:

- EHA (European Hematology Association) Research Grants Reviewer
- ESF: FWO European Science Foundation-Flanders Research Foundation :Post-doctoral projects Reviewer
- Member of reviewers for the evaluation of research products (VQR 2011-2014) on behalf of ANVUR (Evaluation National Agency of the University System and Research)

GUEST EDITOR

- Special Issue: *Molecular Research on Acute Lymphoblastic Leukemia* for the International Journal of Molecular Sciences IF 4.1
Website: https://www.mdpi.com/journal/ijms/special_issues/ALL

SCIENTIFIC REVIEWER OF THE FOLLOWING JOURNALS:

Cellular Signaling, Journal of Cellular Physiology, Expert Opinion on Drug Discovery, Expert Opinion on Therapeutic Targets, Molecular Cancer Therapeutics, Translational Oncology, BBA Molecular Cell Research, EBioMedicine, Biochemistry and Cell Biology; The International Journal of Cancer, The

European Journal of Cancer; The International Journal of Molecular Sciences; Cells, Oncogene, Plos One.

AWARDS and HONORS:

-Cancer Grant Program BD Biosciences: Winner 2015-16

<http://www.bdbiosciences.com/us/applications/research/researchgrants/m/researchresearchgrants/winners/cancergrants>

-2009 The 51st ASH Annual Meeting and Exposition (New Orleans, LA, USA)-Travel award

-2011 The 53th ASH Annual Meeting and Exposition (San Diego, CA, USA)-Travel award

TEACHING EXPERIENCE

Tutorial and supervisory experience with national and international students and PhD candidates.

PUBLICATIONS

She is author or co-author of a total of 70 papers. H-index:32 (Scopus), 31 (WOS). ORCID ID: 0000-0002-4568-3189

Bologna 10-06-2020

