

FERDINANDO CHIARADONNA, PhD

PERSONAL DETAILS

Date and place of birth: October 24th 1966, Pomigliano d'Arco (NA), Italy

Marital status: cohabiter with 2 daughters

Laboratory address: Biotechnology and Biosciences Dept, University of Milano-Bicocca, Piazza della Scienza 2, 20126 Milan, Italy

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PERSONAL SKILLS

Mother tongue

Italian

Other languages

English, written and spoken

Spanish, spoken

ACADEMIC ACTIVITIES

1. Roles

- 2019 to date: Associate Professor in Biochemistry at Biotechnology and Biosciences Dept, University of Milano-Bicocca, Milan, Italy
- 2002-2019: Assistant Professor in Biochemistry at Biotechnology and Biosciences Dept, University of Milano-Bicocca, Milan, Italy
- 2002 to date: Group leader at the Biotechnology and Biosciences Dept - University of Milano-Bicocca, Milan, Italy
- 2012-2020: Principal investigator of a research unit of the Centre of Systems Biology (SYSBIO)
- 2002 to date: Scientific supervisor for Bachelor students (only those carried out in the laboratory for which I am responsible, n=74), Master students (only those carried out in the laboratory for which I am responsible, n=23) and PhD students (n=5) of the Biotechnology and Biosciences Dept, University of Milano-Bicocca, Milan, Italy
- 2002 to date: Scientific supervisor for Erasmus Program Master thesis (n=4)
- 2002 to date: Scientific responsible for scholarship and fellowship (n=12)
- 2019 to date: National Coordinator of the Italian Society of Biochemistry and Molecular Biology Group "Tumor Biochemistry" (around 400 members)
- 2019 to date: Member of the University commission for multidisciplinary teaching and research approach inclusive of all 3 Rs

2. Studies/Research

- October 2019: Associate Professor of Biochemistry at Biotechnology and Biosciences Dept, University of Milano-Bicocca, Milan, Italy
- July 2005: PhD in Life Science, Open University PhD program of London, supervisors Prof. Piergiuseppe Pelicci (European Institute of Oncology, Milan) and Prof. Arthur Zelent (Leukaemia Research Fund Center, Institute of Cancer Research, London)

- October 2002-October 2019: Assistant Professor of Biochemistry at the Biotechnology and Biosciences Dept - University of Milano-Bicocca, Milan, Italy
- June 2000-May 2003: Researcher in the laboratories of Prof. Pier Giuseppe Pelicci, at the FIRC Molecular Oncology Institute (IFOM) in Milan, Italy
- September 1997-October 2000: Researcher as fellow for the Italian Cancer Research Association in the laboratories of Prof. Pier Giuseppe Pelicci, at the European Institute of Oncology (IEO) in Milan, Italy
- June 1996-July 1997: Researcher at the Institute of Genetics and Biophysics of Naples (CNR) in the laboratory of Dr. Maria Patrizia Stoppelli, Naples, Italy
- February 1996-June 1996: EMBO fellow, at the laboratory of Prof. Thomas Graf at the European Molecular Biology Laboratory (EMBL), Heidelberg, Germany
- January 1994-December 1995: Researcher as fellow for the Italian Cancer Research Association in the laboratory of Dr. Maria Patrizia Stoppelli, at the Institute of Genetics and Biophysics of Naples, Naples, Italy
- March 1994: Qualification for the profession of Biologist and registration in the national Register of Biologists
- March 1993-March 1994: Post-graduate internship at the Institute of Genetics and Biophysics, in the laboratory of Dr. Maria Patrizia Stoppelli, Naples, Italy
- March 1993: Master Degree in Biological Science, Federico II University of Naples, discussing a thesis in Biochemistry entitled "Nuclear Steroid Hormone Receptors", with a score of 110/110 cum laude. Supervisor Professor Piera Quesada.

3. Academic and organizational activities

- 2023: Board member as Commissioner for an assistant professor position at the University of Piemonte Orientale, Novara, Italy
- 2022: Board member as President for an assistant professor position at the University of Milano Bicocca, Milano, Italy
- 2022: Board member as Commissioner for an assistant professor position at the University of Firenze, Firenze, Italy
- 2020 to date: member of the Scientific - Didactic Council of the Interuniversity Center for the promotion of the principles of 3R in teaching and research
- 2020 to date: member of the Teaching Quality Assurance for the Bachelor degree in Biotechnology and for the Master degree in Industrial Biotechnology
- 2020-2021: External supervisor for final thesis assessment of the PhD programs in University of Catanzaro and Roma Tre
- 2018-2021: Member of the Department Board (second term) at the Department of Biotechnology and Biosciences of the University of Milan Bicocca, Milan, Italy
- 2018: External supervisor for final thesis assessment of the PhD program in Biomedical and Neuromotor Sciences of the University of Bologna, Bologna, Italy
- 2018: External supervisor for final thesis assessment of the PhD program in Clinical and Experimental Oncology and Immunology of the University of Padua, Padua, Italy
- 2018: Board member for the final examination of the European School of Molecular Medicine (SEMM) PhD program, University of Milan, Milan, Italy
- 2018 to date: member of the national register of expert peer reviewers for Italian scientific evaluation (Italian Government)
- 2017 to date: Board Member of the PhD program in Converging Technologies for Biomolecular Systems (TECSBI) at the University of Milan Bicocca, Milan, Italy

- 2015-2018: Member of the Department Board at the Department of Biotechnology and Biosciences of the University of Milan Bicocca, Milan, Italy
- 2014-2016: Board Member of the PhD program in Biology and Biotechnology at the University of Milan Bicocca, Milan, Italy
- 2013: Board Member of the PhD program in Life Sciences at the University of Milan Bicocca, Milan, Italy
- 2012: Board member for the final examination of the PhD in Oncology, University of Perugia, Perugia, Italy
- 2006-2012: Board Member of the PhD program in Industrial Biotechnology at the University of Milan Bicocca, Milan, Italy
- 2011: Board Member for the final examination of the European School of Molecular Medicine (SEMM) PhD program, University of Milan, Milan, Italy
- 2007: Board member as Commissioner for an assistant professor position at the Faculty of Medicine and Surgery, disciplinary sector Biochemistry, University of Florence, Florence, Italy
- 11/2006-12/2007: Scientific tutor for *Ingenio* fellows (as expert in the technical feasibility of the research project), for a total of 352 hours, at the University of Milan-Bicocca, on behalf of the Lombardy Region as part of the INGENIO Project, "Development and consolidation of entrepreneurship with priority to new areas of employment" and "Improvement of human resources in the research and technological development sector"
- 2004-2009: Educational manager of the Professionalising Laboratory of Cellular Biochemistry Technologies, Bachelor in Biotechnology, University of Milano Bicocca, as part of the FSE-LIKE Project (European Social Fund)
- 2002 to date: Scientific supervisor for Bachelor, Master and PhD students - Biotechnology and Biosciences Dept, University of Milano-Bicocca, Milan, Italy
- 2002 to date: Scientific supervisor for Master thesis of the Erasmus Program

4. University Teaching

- 2002-2010: Cellular Biochemistry, Bachelor in Biotechnology
- 2010-2012: Biochemistry II, Bachelor in Biotechnology
- 2002-2016: Cellular Biochemistry Laboratories, Bachelor in Biotechnology
- 2019-to date: Cellular Biochemistry Laboratories, Bachelor in Biotechnology (last academic year by online teaching and creating e-learning resources). Student satisfaction for this course is around 2.6 on 3
- 2012 to date: Tumor Biochemistry, Master in Industrial Biotechnology (last academic year by online teaching and creating e-learning resources). Student satisfaction for this course is around 2.7 on 3. From 2019/2020, new type of analysis: Organizational aspects 8.12 on 10; Didactic effectiveness 9,24 on 10; Student satisfaction 8,87 on 10.

5. Master's degree Thesis Advisor (listed only the internal students)

2002-2003

Dr. Chiara Magnani "Study on the effect of the expression of an oncogenic K-Ras protein and its reversion by expression of the dominant negative GEF CDC25 in murine fibroblast NIH3T3, Master in Industrial Biotechnology

2007-2008

Dr. Marco Gaviraghi "Characterization of Cyclic AMP effects on the Ras pathway and mitochondrial activity of normal and K-Ras transformed murine fibroblasts", Master in Industrial Biotechnology

Dr. Lara Sala Danna "Proliferation and survival of normal and transformed murine fibroblasts in response to metabolic perturbations", Master in Industrial Biotechnology

2008-2009

Dr. Roberta Palorini "Role of the cAMP-PKA pathway in the mitochondrial function of murine and human tumor cells mutated in the K-Ras oncogene", Master in Industrial Biotechnology

2010-2011

Dr. Sandro Olivieri "Transcriptional and metabolic characterization of a 3AB-OS stem cell line" Master in Bioinformatics

Dr. Tiziana Simonetto "Relationship between mitochondrial morphology and function in MDA-MB-231 tumor cells", Master in Industrial Biotechnology

2012-2013

Dr. Marco Villa "Metabolic alterations induced by the expression of c-Myc and V12Ras oncogenes in immortalized human epithelial cells", Master in Industrial Biotechnology

Dr. Giulia Tosin "Study of the effects of the PKA pathway in transformed cells under glucose shortage", Master in Biology

2013-2014

Dr. Carlotta Luvi Delfino "Identification of mechanisms capable of supporting PKA-dependent survival of tumor cells in glucose deprivation" Master in Industrial Biotechnology

2014-2015

Dr. Pietro Paolo Lombardi "Role of PKA on the regulation of autophagy and Anoikis resistance in glucose deprivation", Master in Biology

2016-2017

Dr. Francesca Tinelli "Preclinical characterization in different cancer cell models of a novel PGM3 inhibitor, involved in Hexosamine biosynthetic pathway", Master in Industrial Biotechnology

Dr. Antonio Castagna "Study of a new inhibitor of the hexosamine pathway in breast and pancreatic cancer cells", Master in Industrial Biotechnology

2017-2018

Dr. Laura Bergamaschi "Oncogenic K-RAS in pancreatic cancer cells influences their metabolic profile and their response to hexosamine pathway inhibition", Master in Industrial Biotechnology

Dr. Marco Giampà "PGM3, a new therapeutic target in pancreatic ductal adenocarcinoma", Master in Industrial Biotechnology

2019-2020

Dr. Elisa Domaneschi "Analysis of the Hexosamine Pathway inhibition in a K-ras wild type PDAC cell model: differences between 2D and 3D culture", Master in Industrial Biotechnology

Dr. Jessica Calviello "Role of Hexosamine Pathway in EMT of PDAC cells: analysis in 2D and 3D cellular models of a K-Ras mutated cancer cell lines", Master in Industrial Biotechnology

2020-2021

Dr. Chiara Lattuada "Role of glycosylation in DNA repair and chemoresistance in PDAC", Master in Biology

Dr. Francesca Mossi "Role of Hexosamine Pathway in DNA repair and chemoresistance in K-Ras mutated pancreatic cancer cells", Master in Industrial Biotechnology

2021-2022

Dr. Maximilian Gobbi "Hexosamine Pathway inhibition sensitizes pancreatic cancer cells to the ferroptosis inducer erastin", Master in Industrial Biotechnology

Dr. Kirthana Porchera, in progress, Master in Biology

2022-2023

Dr. Silvia Lence, in progress, Medical and Pharmaceutical Biotechnology

Dr. Elena Corno, in progress, Master in Industrial Biotechnology

6. PhD's Thesis Advisor

2006-2009

Dr. Daniela Gaglio “Role of nutrient availability on proliferation and cell cycle execution of immortalized and K-Ras transformed mouse fibroblasts”, PhD in Industrial Biotechnology
2007-2010

Dr. Chiara Balestrieri “High-throughput bioinformatic approaches to study tumorigenesis in mammalian cells”, PhD in Industrial Biotechnology
2010-2013

Dr. Roberta Palorini “K-Ras cancer cell fate under glucose deprivation is influenced by alteration of bioenergetic metabolism”, PhD in Industrial Biotechnology
2014-2017

Dr. Francesca Ricciardiello “FR051, a novel Hexosamine Biosynthetic Pathway inhibitor, induces cell death in breast and pancreatic cancer models”. PhD in Life Science
2022-2025

Dr. Barbara Zerbato “Exploiting DNA damage response protein O-glycosylation to enhance chemotherapy in pancreatic cancer”, PhD in Converging Technologies for Biomolecular Systems

7. Erasmus’ Thesis Advisor

2012

Simão Pedro da Franca Telhada de Azevedo e Castro, Master’s Degree in Biological Engineering, Lisboa, Portugal, “Role of Unfolded Protein Response in the activation of an apoptotic process upon glucose deprivation in cancer cells”

2013-2014

Sedat Dogan, Department of Molecular Biology and Genetics, Faculty of Science, Istanbul University, Turkey

2015

Claudia Garcia Martin, Facultad de Ciencias Ambientales y Bioquímica Universidad deCastilla-La Mancha, Toledo, España

2023

Gizem Melis Kargin, Department of Engineering and Natural Sciences, Istinye University, Istanbul, Turkey

NON-ACADEMIC SCIENTIFIC ACTIVITIES

1. Grant Reviewer

1. 2010: AICR (Association for International Cancer Research)
2. 2011: Dutch Childhood Oncology Group - DCOG (Stinching Kinderoncologie Nederland - SKION)
3. 2018: National Science Centre (Narodowe Centrum Nauki, Poland)
4. 2019: Joint Project University of Verona
5. 2020: Junior Individual fellowship, University of Varese Insubria
6. 2020-2022: European Community Evaluator for proposal “Individual Fellowships, Marie Skłodowska-Curie Actions”
7. 2020-2023: Invited as scientific expert by MIUR (REPRISE)
8. 2023: Invited as expert by the European Commission for the evaluation of proposals submitted to the Horizon Europe Mission Cancer topic: HORIZON-MISS-2023-CANCER-01-01 (Bruxelles, Belgium)

2. Journal Reviewer for the following scientific journals: Oncogene, Cell Death and Disease, iScience, Molecular Cancer Therapeutics, BBA -Molecular Cell Research, BBA -Molecular Basis

of Disease, Expert Opinion on Therapeutic Targets, ISRN Cell Biology, Biotechnology Advances, Journal of Cellular Physiology, Journal of Cellular Biochemistry, Bioinformatics, Anti-Cancer Agents in Medicinal Chemistry, BioMed Research International, Current Metabolomics, Bioscience Reports, Molecular Cancer Research, Metabolites, Cancer Letters, Molecules, Cell Biology International, Journal of Cancer and Tumor International, Antioxidants and Redox Signaling, Hepatology, BMC Cancer, PLOS One, Frontiers in Oncology, Cancer Chemotherapy and Pharmacology, BBA -General Subjects-, BMC Biology, Seminars in Cell and Developmental Biology, International Journal of Molecular Sciences, Open Life Sciences, Cells, Cancers, Antioxidant, Biomolecules

3. Editorial Board Member

- 2022 to date: Review Editor for *Frontiers in Oncology*, section Cancer Metabolism
- 2021 to date: Guest editor for the Topical collection "Pathometabolism: Understanding Disease through Metabolism", *Cells*
- 2020 to date: Section Board member for *Cells*
- 2020-2021: Guest editor for the special issue: "Metabolic Rewiring in Cancer Cells: From Tumor Onset to Novel Therapies", *Cells* (29 articles)
- 2011-2017: Board member for *ISRN Cell Biology*
- 2017 to date: Editor Board member for *Oxidative Medicine and Cellular Longevity*
- 2013 to date: Editor Board member for *BioMed Research International*
- 2014-2018: Board member for *Journal of Cells*

4. Project and Society member

- Member of the international Team "Deregulated metabolism" part of the Halifax Project in Carcinogenesis
- Member of the international Team "SysRev SOP: Hallmark and key characteristics mapping"
- Member of Italian Society of Biochemistry
- Member of Italian Association of Cell Culture
- Member of Italian Group of Bioenergetics and Biomembranes
- Member of International Society of Cancer Metabolism
- Member of European Association for Cancer Research

AWARD AND RECOGNITION

- 1994-1996: Three-year fellowship from the Italian Cancer Research Association (International Institute of Genetics and Biophysics, Naples, Italy)
- 2000-2002: Annual fellowship of the Italian Foundation for Cancer Research "Detection of cancer gene mutation and expression profiling by nanotechnology" (European Institute of Oncology, Milan, Italy)
- 2002-2003: Annual fellowship from the European Institute of Oncology Foundation and the Italian Foundation for Cancer Research (Milan, Italy)
- 2012: One-off financial incentive, according to criteria of academic and scientific merit, for the years 2011-2013
- 2022: Requested and obtained the most prestigious Award of The International Union of Biochemistry and Molecular Biology, The Jubilee Award Lectures, for Prof. Lewis Cantley

AWARDED GRANTS

1. Competitive Research Grants

- 2007: Progetti di Rilevante Interesse Nazionale (PRIN- Ministry of University and Research) (Principal Investigator) "Identification of the role of Sestrin 2 in tumorigenesis by a mouse KO approach" (positive result, not funded for lack of resources), (Principal Investigator)
- 2008-2012: Progetti di Rilevante Interesse Nazionale (PRIN-Ministry of University and Research) "Transcriptional, Proliferative and Metabolic analyses of 3AB-OS Cancer Stem Cells Compared to MG-63 osteosarcom Cells", (Unit Principal Investigator)
- 2009-2022: Fondi Agevolazione Ricerca (FAR-Ministry of University and Research) (Principal Investigator)
- 2010-2015: Ministry of University and Research-SysBioNet, Italian Roadmap for European Strategy Forum on Research Infrastructures (ESFRI), (Cancer cell Unit Principal Investigator)
- 2015-2017: Italian Association for Cancer Research (AIRC), "Molecular targeting of the hexosamine biosynthetic pathway in pancreatic cancer as a novel therapeutic strategy" (Principal Investigator)
- 2017: Fondo per il finanziamento delle attività base di ricerca. Bando: FFABR 2017 (Ministry of University and Research) (Principal Investigator)
- 2019-2022 Executive Programme of Scientific Collaboration between Italy and China, Innovative Biomedical Devices (BIOMED), (Ministry for Foreign Affairs and International Cooperation), "Preclinical evaluation of a novel PGM3 inhibitor in pancreatic ductal adenocarcinoma" (Principal Investigator)
- 2020-2021 COVID-19 project from Regione Lombardia, "COVitaminD Trial: Prevention of COVID19 Complications in Cancer Patients", (Unit Principal Investigator)
- 2021-2023 Competitive Project of University of Milano Bicocca, "Exploiting DNA damage response protein O-glycosylation to enhance chemotherapy in pancreatic cancer", (Principal Investigator)

2. Scientific Coordinator for Competitive Scholarship Grant

- 2011: 1 year fellowship to Dr. Andrea Monestiroli, Grant from PRIN- Ministry of University and Research, "Study of the metabolism of a tumor cell line with stem characteristics compared to its non-stem tumor counterpart"
- 2014: 2 years fellowship to Dr. Humberto De Vitto "Science without Borders Program" - SWBP, Brazilian Government
- 2017: 1 year fellowship to Dr. Francesca Ricciardiello, Grant from Italian Association Cancer Research, "Analysis and validation of new inhibitors of the hexosamine pathway in pancreatic cancer cells"
- 2022: 4 months fellowship to Dr. Barbara Zerbato, Grant from Ministry for Foreign Affairs and International Cooperation, "Identification of the metabolic mechanisms controlling DNA damage repair"

3. Scientific Coordinator for Competitive Fellowship Grant

- 2011: 1 year fellowship to Dr. Chiara Balestrieri, Grant from Ministry of University and Research, "Transcriptional analysis of normal and transformed mouse cells cultured in two different glucose amounts."
- 2012: 2 years fellowship to Dr. Giuseppina Votta, Grant from Ministry of University and Research-SysBioNet "Characterization of cell death induced by nutritional stress"
- 2013: 2 years fellowship to Dr. Roberta Palorini, Grant from Ministry of University and Research-SysBioNet "Mitochondrial molecular mechanisms involved in glucose deprivation-induced death of transformed cells"

- 2014: 1 year fellowship to Dr. Giuseppina Votta, Grant from Ministry of University and Research-SysBioNet “Characterization of cell death induced by nutritional stress”
- 2015: 2 years fellowship to Dr. Roberta Palorini, Grant from Ministry of University and Research, “Regulation of the bioenergetic metabolism and death-resistance after modulation of hexosamine biosynthetic pathway in pancreatic cancer cells”
- 2015: 1 year fellowship to Dr. Giuseppina Votta, Grant from Italian Association Cancer Research, “Role of the hexosamine biosynthetic pathway in the motility and invasiveness of pancreatic cancer cells”
- 2016: 1 year fellowship to Dr. Humberto de Vitto, Grant from Ministry of University and Research-SysBioNet, “Role of glucose and glutamine metabolism in the proliferation and survival of pancreatic cancer cells through the study of mitochondrial function”
- 2016: 1 year fellowship to Dr. Giuseppina Votta, Grant from Italian Association Cancer Research, “Role of the hexosamine biosynthetic pathway in the motility and invasiveness of pancreatic cancer cells”
- 2017: 2 years fellowship to Dr. Roberta Palorini, Grant from Ministry of University and Research “Regulation of the bioenergetic metabolism and death-resistance after modulation of hexosamine biosynthetic pathway in pancreatic cancer cells”
- 2018: 2 years fellowship to Dr. Francesca Ricciardiello, Grant from Ministry of University and Research “Study of the role of Hexosamine Biosynthetic Pathway in cancer cells”
- 2020: 2 years fellowship to Dr. Francesca Ricciardiello, Grant from Ministry of University and Research “Study of the role of Hexosamine Biosynthetic Pathway in cancer cells”

SOME CURRENT AND PAST INTERNATIONAL AND ITALIAN COLLABORATIONS

- Prof. Bodo Grimbacher, Faculty of Medicine Albert-Ludwigs-Universität, Center for Chronic Immunodeficiency, Freiburg, Germany; PGM3 insufficiency: a study of genotype-phenotype correlation in Hyper-IgE syndrome (HIES), combined immunodeficiency (CID), to severe combined immunodeficiency (SCID) (ongoing)
- Prof. Luis Izquierdo. Institut de Salut Global de Barcelona, Barcelona, Spain. Role of hexosamine pathway in malaria parasite *Plasmodium falciparum* infection: a new therapeutic target (ongoing)
- Prof. Domenica Scumaci. Research Center on Advanced Biochemistry and Molecular Biology, Department of Experimental and Clinical Medicine, Magna Græcia University of Catanzaro, Catanzaro, Italy. Identification of O-glycosylated proteins involved in pancreatic cancer resistance to chemotherapy (ongoing)
- Prof. Taiping Zhang, Peking Union Medical College Hospital, Beijing, China; Institute of Materia Medica, Chinese Academy of medical Science, Beijing, China. Preclinical evaluation of a PGM3 inhibitor as innovative therapeutic approach for pancreatic ductal adenocarcinoma (ongoing)
- Prof. Andre Wegner, Braunschweig Integrated Centre of Systems Biology (BRICS), Braunschweig, Germany. PGM3 inhibition and cooperativity with Erastin in pancreatic cancer cells induction of Ferroptosis (ongoing)
- Prof. Francesco Gatti, Department of Chemistry, Materials and Chemistry Engineering “G. Natta”, Politecnico di Milano, Milano, Italy. Chemical modification of camptothecin to enhance time of release in pancreatic cancer (ongoing)
- Prof. Silvia Arpicco, Department of Drug Science and Technology, University of Turin, Turin, Italy. Encapsulation in liposomes of a novel PGM3 inhibitor for cancer therapy (ongoing)

- Department of Experimental Oncology, Pathology and Surgery of European Institute of Oncology, Milan, Italy; Oncology Research Unit, Pfizer Global Research and Development, La Jolla, California, USA; Sanofi Oncology, Cambridge, Massachusetts, USA; Institute for Applied Cancer, The University of Texas MD Anderson Cancer Center Science, Houston, Texas, USA; Department of Biosciences, University of Milan, Milan, Italy for the identification of resistance mechanisms in breast cancer patients treated with HDAC inhibitors
- Luxembourg Centre for Systems Biomedicine, Esch-sur-Alzette, Luxembourg; Department of Informatics Systems and Communication, University of Milano-Bicocca, Milan, Italy; Institute of Molecular Bioimaging and Physiology (IBFM), CNR, Segrate-Cefalù, Italy; Department of Biomedical Sciences for Health, University of Milan, Segrate, Milan, Italy for the definition of the role of PKA in cancer cell resistance to nutrient stress
- Computational Systems Biology Laboratory, Institute of Biomedicine and Genome-Scale Biology Research Program, University of Helsinki, Helsinki, Finland for the identification of a gene signature associated to NCI60 cancer cell collection transformation
- Department of Chemical Engineering, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA for the identification of the role of oncogenic K-ras in cancer cell metabolic rewiring
- "The Halifax Project", for the identification of the effect of the chemical pollutants on the metabolic alterations associated to cancer
- Section of Biochemical Sciences, Department of Experimental Biomedicine and Clinical Neurosciences, Polyclinic, University of Palermo, Palermo, Italy; Institute for Cancer Research and Molecular Medicine, Center of Biotechnology-College of Science and Biotechnology, Temple University, Philadelphia, Pennsylvania, USA for the genetic and metabolic characterization of osteosarcoma cancer stem cells
- Institute for Biomedical Technology – CNR, Segrate, Milan, Italy; Computational Systems Biology, Max Planck Institute for Molecular Genetics, Berlin, Germany; Institute for Biology, Theoretical Biophysics, Humboldt University Berlin, Berlin, Germany for the definition of a computational model of the G1 to S transition in a mouse model of K-ras transformed fibroblasts
- Department of Informatics Systems and Communication (DISCo), University of Milano-Bicocca, Milan, Italy for the identification of a transcriptional signature PKA-dependent associated to cancer cell survival under glucose depletion
- Ludwig Institute for Cancer Research, Royal Melbourne Hospital Parkville, Victoria, Australia; European Molecular Biology Laboratory, Heidelberg, Germany for the characterization of the role of Urokinase in transformed monocyte/macrophage adhesion and migration
- Farmitalia Carlo Erba, Nerviano (Milano), Italy; Lepetit Spa Research Center, Gerenzano (Varese) for the synthesis and *in vivo* test of recombinant proteins (Urokinase) for therapeutic purposes
- Centro de Biología Molecular, Facultad de Ciencias, Universidad Autónoma de Madrid, Madrid, Spain; Dipartimento di Genetica, Università di Milano; Department of Biology and Biotechnology, San Raffaele Scientific Institute, Milan, Italy for the definition of the post-translational modifications of Urokinase, involved in cancer cells migration

SCIENTIFIC MEETINGS-Invited speaker (2015-2022)

- 9th International ISCaM Meeting – Targeting metabolic dynamics in cancer, June 29-July 2 2022, Turin, Italy

- 33rd AICC annual conference: International meeting on cancer metabolism. November 22-24, 2021, University of Turin, Turin, Italy
- Erasmus week (October 25-28, 2021), Double Diploma program for students of the University of Milano Bicocca and the University of Paris, University of Milano Bicocca, Milan, Italy
- Metabolic club meeting for the University of Torino, Torino, Italy November 20, 2021 (Webinar)
- Metabolism Meets Function, The multifaced role of metabolism in cancer. June 14th 2021, Florence, Italy (Webinar)
- PhD meeting of Magna Græcia University of Catanzaro, February 10, 2021 (Webinar)
- Erasmus week (October 26-29, 2020), Double Diploma program for students of the University of Milano Bicocca and the University of Paris, University of Milano Bicocca, Milan, Italy (Webinar)
- Metabolism Meets Function, The multifaced role of metabolism in cancer. July 20th 2020, Florence, Italy (one year postponed)
- 4th IFOM Symposium "Breaking Boundaries: Metabolism at the Cross-roads". November 2019, IFOM, Milan, Italy
- Seminar held at Union Peking Medical College Hospital, December 2019, Beijing, China
- Annual Scientific Day of the Biotechnology and Biosciences Dept, University of Milano-Bicocca, December 2019, Milan, Italy
- Speaker at the PhD day in Biochemistry Science, Department of Neuroscience, Biomedicine and Movement, University of Verona, February 2018, Verona, Italy
- Speaker at European Institute of Oncology "IEO ALUMNI MEETING", Research Campus, December 2018, Milano, Italy
- 4th ISCaM2017 Cancer Metabolism, October 2017, Bertinoro, Italy
- 59th National Meeting of the Italian Society of Biochemistry and Molecular Biology, September 2017, Caserta, Italy
- First International GIBB Meeting, June 2017, Catania, Italy
- "hackUniTO for Ageing", November 2016, Turin, Italy
- 23rd Meeting of the European Section of Urological Research (ESUR), October 2016, Parma, Italy
- "Dissecting Biological Complexity at the Molecular Level" Meeting of the Italian Society of Biochemistry and Molecular Biology, March 2016, Bologna, Italy
- Annual Scientific Day of the Biotechnology and Biosciences Dept, University of Milano-Bicocca, December 2015, Milan, Italy
- 2nd International ISCaM Meeting – Metabolism and Microenvironment in Cancer Plasticity, September 2015, Venice, Italy
- 58th National Meeting of the Italian Society of Biochemistry and Molecular Biology, September 2015, Urbino, Italy

SCIENTIFIC MEETINGS-Selected as speaker

- 53rd National Meeting of the Italian Society of Biochemistry and Molecular Biology, September 2005, Riccione, Italy
- International Conference on Mitochondria, "From Molecular Insight to Physiology and Pathology", December 2005, Bari, Italy
- National Meeting of Italian Society of Biochemistry, June 2003, Milano, Italy
- Gene molecular structure and expression, 2000, Cortona, Italy
- Gene molecular structure and expression, 1997, Cortona, Italy

CONGRESS ORGANIZATION AND CHAIR

- Organizer and Scientific Committee of the 3rd Workshop "Understanding cancer metabolism: exploring tumor heterogeneity to advance cancer therapy". 29-30 June 29-30, 2023, University "Magna Græcia" of Catanzaro, Department of Experimental and Clinical Medicine. In this congress will be awarded Prof Lewis Cantley with the most prestigious Award of The International Union of Biochemistry and Molecular Biology, The Jubilee Award Lectures
- Scientific Committee of 62nd SIB National Congress (Italian Society of Biochemistry and Molecular Biology), September 7-9, 2023, University of Florence, Florence, Italy
- Organizer of IV annual meeting of Centro 3R, The role of 3Rs in the age of one health: where we are and where we're going, September 13-15, 2023, University of Milano Bicocca, Milan, Italy
- Organizer of the 2nd Workshop "Adaptive mechanisms in cancer drug resistance", September 22, 2022, University of Napoli Federico II, Napoli, Italy
- Organizer of the 1st Workshop "From genes to metabolites through proteins: dealing with human health and disease", February 25, 2022, University of Milano Bicocca, Milano, Italy
- Organizer of the 61^o Italian Society of Biochemistry and Molecular Biology (SIB) meeting (virtual edition), September 23-24, 2021
- Organizer of the under 35 online meetings (each month from 2020) "The Tuesday of Tumor Biochemistry Group"
- Organizer of the 3rd Workshop "From genes to metabolites through proteins: dealing with human health and disease", February 27, 2020, University of Milano Bicocca, Milan, Italy (postponed)
- Organizer of the 2nd Workshop "Molecular, cellular and translational approaches to differentiation and neoplastic transformation", June 17, 2019, University of Florence, Florence, Italy
- Chair of the Parallel Symposia "Cancer and metabolism: chicken or egg?" as part of the 60th Congress of the Italian Biochemistry and Molecular Biology Society, September 18-20, 2019, Lecce, Italy
- Chair 2nd National Workshop of the Group of the Italian Biochemistry and Molecular Biology "Neoplastic Differentiation and Transformation" and "Proteins", June 17, 2019, University of Florence, Florence, Italy

SCIENTIFIC EXPERIENCE

October 2002-present time

Associate Professor-Biotechnology and Bioscience Dept, University of Milano-Bicocca, Milan, Italy

Major scientific interests: Relationship between the processes leading to cellular transformation and the metabolic alterations characterizing cancer cells

Identification and test of novel compounds able to induce cell growth arrest and/or death in pancreatic and breast cancer cells through their ability to modulate cancer cell metabolism

Relationship between nutrient depletion and cancer cell proliferation, death and DNA damage

October 2002-October 2019

Assistant Professor-Biotechnology and Bioscience Dept, University of Milano-Bicocca, Milan, Italy

Major scientific interests: Relationship between the processes leading to cellular transformation and the metabolic alterations characterizing cancer cells

Relationship between nutrient depletion and cancer cell death

Signal transduction and molecular mechanisms of cell cycle control

Systems dynamics of cell proliferation and cell death, with a focus to cancer cell models

September 1997-October 2002

AIRC post-doctoral fellow, European Institute of Oncology, Milan, Italy-Prof P. Pelicci's lab

Identification of new genes involved in APL (Acute Promyelocytic Leukemia) phenotype.

PhD student at Open University, London- Supervisor: Prof Arthur Zelent

June 1996-July 1997

Fellowship, I.I.G.B., Naples, Italy-Dr. Stoppelli's lab

Creation of a stable U937 cell lines expressing Nef to devise novel vectors and characterize inducible myelocytic cellular clones. Analysis of the clones under various experimental conditions in order to define their chemotactic and adhesive properties

May 1996-June 1996

CNR fellow, European Molecular Biology Laboratory (EMBO), Heidelberg, Germany-Prof. T. Graf's lab

February 1996-June 1996

EMBO short-term fellow, EMBO, Heidelberg, Germany-Prof. T. Graf's lab (Differentiation Program) Analysis of the cytoskeletal rearrangement in myelocytic cell lines induced to differentiate by various agents;

Development of several techniques (i.e. microinjection of DNA and proteins in fibroblasts and myelocytic cell lines; confocal microscopy; image elaboration)

January 1994-December 1995

Fellowship, Italian Association for Cancer Research (AIRC), I.I.G.B., Naples, Italy- Dr. Stoppelli's lab. Characterize the ability of human urokinase receptor to bind vitronectin in mammary carcinoma

Identification of the molecular mechanisms involved in monocytic motility and on the adhesion properties of differentiated macrophages

Analysis of the effects of the interaction between the HIV viral protein Nef and p60Src

Extensive experience in expressing proteins in poor transfectable cellular models such as hematopoietic cell lines

March 1993-March 1994

Fellowship, I.I.G.B., Naples, Italy-Dr. Stoppelli's lab

Regulation of plasminogen activation

Molecular and cellular biology techniques (recombinant fusion proteins to define enzyme's phosphorylation sites)

September 1991- September 1992

Part-time job (ex Art. 23) for environmental analyses in Naples' old gardens (Assessment and recovery of ancient plants)

Theory Course

- Course in " The digital image in microscopy" organized by Leica, Milan, Italy, September 2003
- 2nd EMBO Workshop "Making decisions in G1", organized by Fondazione Adriano Buzzati-Traverso, Milan, Italy, October 2002
- 64th Course of International School of Pharmacology, "Embo Workshop" in "Structure and function of Nuclear Receptors" organized by Prof. P. Benigno, L. Rausa, G.P. Velo and A. Maggi, Lerici, Italy, May 2001
- Course in "The Development of the Neural Primordium and Paraxial Mesoderm in the Vertebrate Embryo" held by Prof. Nicole Le Dourain Institute of Genetic and Biophysics (CNR), Naples, Italy, October 1995

- Course in "Dealing with Genes" held by Prof. Paul Berg International Institute of Genetic and Biophysics (CNR), Naples, Italy, September 1994
- Course in "Gene molecular structure and expression" organized Prof. G. Macino, Capalbio, Italy, May 1994
- Course in "The transcription" organized by Italian Association of Genetic, Cortona, Italy, June 1993
- Course in "Gene molecular structure and expression" organized Prof. G. Macino, Capalbio, Italy, May 1993
- Course in "DNA Replication" held by Prof. Arthur Kornberg, International Institute of Genetic and Biophysics (CNR), Naples, Italy, May 1993

MANAGERIAL SKILLS

Member of the following Commissions:

- Commission for Departmental Space Management, Department of Biotechnology and Biosciences of the University of Milan Bicocca, Milan, Italy
- Commission for Instruments Management Department of Biotechnology and Biosciences of the University of Milan Bicocca, Milan, Italy
- Commission for Human Resource Management, Department of Biotechnology and Biosciences of the University of Milan Bicocca, Milan, Italy
- Didactic and Scientific laboratories responsible, Department of Biotechnology and Biosciences of the University of Milan Bicocca, Milan, Italy
- Teaching Quality Assurance for the bachelor degree in Biotechnology and for the master degree in Industrial Biotechnology
- Department Board (second term) at the Department of Biotechnology and Biosciences of the University of Milan Bicocca, Milan, Italy
- Member of the University of Milano Bicocca 3R commission

SCIENTIFIC ACHIEVEMENTS

VQR 2011-2014: National evaluation of the personal research quality by Italian Government: Excellent (2) (maximum)

VQR 2015-2019: National evaluation of the personal research quality by Italian Government: Excellent (3) (maximum)

2015: Journal Cover for the article: Redox-Mediated Suberoylanilide Hydroxamic Acid Sensitivity in Breast Cancer. Chiaradonna et al., Antioxidants & Redox Signaling. Volume 23, Issue 1/July 1, 2020: Award for the best Publication in the Journal "Cells"

ACADEMIC ACHIEVEMENTS

2017 National habilitation to the role of full professor of Biochemistry

2017 National habilitation to the role of associate professor of Biochemistry

2013 National habilitation to the role of associate professor of Applied Biology

PUBLICATIONS

50 original articles

1 chapter in a book

10 contributions in indexed conference proceedings

72 congress communications

Scopus h-index: 27, Citations: 3052

Google Scholar h-index: 29

Google Scholar i10-index: 41

WoS Average citations per year: 85,56

WoS Average citations per item: 42,49

Total IF: 355,99

Average IF: 7,41

PUBLICATIONS

1. Venturi S, **Chiaradonna F**, Gatti FG, La Ferla B, Palorini R, Zerbato B. Chiral trimethyl lock based on vic-trisubstituent effect: prolonged release of Camptothecin. ChemComm. (*Under revision*)
2. Zerbato B, Gobbi M, Ludwig T, Brancato V, Pessina A, Brambilla L, Wegner A and **Chiaradonna F***. PGM3 inhibition Shows cooperative Effects With Erastin inducing Pancreatic cancer cell death via activation of the Unfolded Protein Response. Frontiers in Oncology. (*In press*)
3. De Vitis C, Battaglia AM, Pallocca M, Santamaria G, Mimmi MC, Sacco A, De Nicola F, Gaspari M, Salvati V, Ascenzi F, Bruschini S, Esposito A, Ricci G, Sperandio S, Prestagiacomo LE, Cavaliere R, Vecchione A, Ricci A, Sciacchitano S, Salerno G, French D, Aversa I, Cereda C, Fanciulli M, **Chiaradonna F**, Cuda G, Costanzo F, Ciliberto G, Mancini R, Biamonte F. ALDOC- and ENO2- driven glucose metabolism sustains 3D tumor spheroids growth regardless of nutrient environmental conditions: a multi-omics analysis. Journal of Experimental & Clinical Cancer Research. 2023 Mar 22;42(1):69.
4. Heinz A, Nonnenmacher Y, Henne A, Khalil MA, Bejkollari K, Dostert C, Hosseini S, Goldmann O, He W, Palorini R, Verschueren C, Korte M, **Chiaradonna F**, Medina E, Brenner D, Hiller K. Itaconate controls its own synthesis via feedback-inhibition of reverse TCA cycle activity at IDH2. Biochim Biophys Acta Mol Basis Dis. 2022 Aug 26:166530.
5. D'Ecclesiis O, Gavioli C, Martinoli C, Raimondi S, Chiocca S, Miccolo C, Bossi P, Cortinovis D, **Chiaradonna F**, Palorini R, Facciotti F, Bellerba F, Canova S, Jemos C, Salé EO, Gaeta A, Zerbato B, Gnagnarella P, Gandini S. Vitamin D and SARS-CoV2 infection, severity and mortality: A systematic review and meta-analysis. PLoS One. 2022 Jul 6;17(7):e0268396.
6. Olivo E, La Chimia M, Ceramella J, Catalano A, **Chiaradonna F**, Sinicropi MS, Cuda G, Iacopetta D, Scumaci D. Moving beyond the tip of the iceberg: DJ-1 implications in cancer metabolism. Cells. 2022 Apr 23;11(9):1432.
7. Ghilardi C, Moreira-Barbosa C, Brunelli L, Ostano P, Panini N, Lupi M, Anastasia A, Fiordaliso F, Salio M, Formenti L, Russo M, Arrigoni E, **Chiaradonna F**, Chiorino G, Draetta G, Marszalek JR, Vellano CP, Pastorelli R, Bani MR, Decio A and Giavazzi R. PGC1 α/β expression predicts the therapeutic response to oxphos inhibition in ovarian cancer. Cancer Res. 2022 Apr 1;82(7):1423-1434.
8. Gnagnarella P, Muzio V, Caini S, Raimondi S, Martinoli C, Chiocca S, Miccolo C, Bossi P, Cortinovis D, **Chiaradonna F**, Palorini R, Facciotti F, Bellerba F, Canova S, Gandini S. Vitamin D Supplementation and Cancer Mortality: Narrative Review of Observational Studies and Clinical Trials. Nutrients. 2021 Sep; 13(9):3285.
9. Bellerba F, Muzio V, Gnagnarella P, Facciotti F, Chiocca S, Bossi P, Cortinovis D, **Chiaradonna F**, Serrano D, Raimondi S, Zerbato B, Palorini R, Canova S, Gaeta A, Gandini S. The Association between Vitamin D and Gut Microbiota: A Systematic Review of Human Studies. Nutrients. 2021 Sep; 13(10):3378
10. **Chiaradonna F***, Domenica Scumaci. Cancer Metabolism as a New Real Target in Tumor Therapy. Cells. 2021 June 5; 10(6):1393. *Co-Corresponding Author
11. Fu Y, Ricciardiello F, Yang G, Qiu J, Huang H, Xiao J, Cao Z, Zhao F, Liu Y, Luo W, Chen G, You L, **Chiaradonna F***, Zheng L, Zhang T. The Role of Mitochondria in the Chemoresistance of Pancreatic Cancer Cells. Cells. 2021 Feb 25;10(3):497. *Co-Corresponding Author

12. Ricciardiello F, Bergamaschi L, De Vitto H, Gang Y, Zhang T, Palorini R, **Chiaradonna F***. Suppression of the HBP function increases pancreatic cancer cell sensitivity to a pan-RAS inhibitor. *Cells*. 2021 Feb 18;10(2):431. *Corresponding Author
13. DJ Klionsky,... **Chiaradonna F** et al., Guidelines for the use and interpretation of assays for monitoring autophagy (4th edition). *Autophagy*. 2021 Jan;17(1):1-382.
14. Ricciardiello F, Gang Y, Palorini R, Li Q, Giampà M, Zhao F, You L, La Ferla B, De Vitto H, Guan W, Gu J, Zhang T, Zhao Y, **Chiaradonna F***. Hexosamine pathway inhibition overcomes pancreatic cancer resistance to gemcitabine through unfolded protein response and EGFR-Akt pathway modulation. *Oncogene*. 2020 May;39(20):4103-4117. *Corresponding Author
15. Nobile MS, Votta G, Palorini R, Spolaor S, De Vitto H, Cazzaniga P, Ricciardiello F, Mauri G, Alberghina L, **Chiaradonna F***, and Besozzi D*. Fuzzy modeling and global optimization to predict novel therapeutic targets in cancer cells. *Bioinformatics*. 2020 Apr 1;36(7):2181-2188. *Co-Corresponding Author
16. Barilani M, Palorini R, Votta G, Piras R, Buono G, Grassi M, Bollati V, **Chiaradonna F***, Lazzari L. Central metabolism of functionally heterogeneous mesenchymal stromal cells. *Sci Rep*. 2019 Oct 28;9(1):15420. *Co-Corresponding
17. **Chiaradonna F***, Ricciardiello F, Palorini R. The Nutrient-Sensing Hexosamine Biosynthetic Pathway as the Hub of Cancer Metabolic Rewiring. *Cells*. 2018 Jun 2;7(6). *Corresponding Author
18. Paiotta A, D'Orazio G, Palorini R, Ricciardiello F, Zoia L, Votta G, De Gioia L, **Chiaradonna F**, Barbara La Ferla. Design, Synthesis, and Preliminary Biological Evaluation of GlcNAc-6P Analogues for the Modulation of Phosphoacetylglucosamine Mutase 1 (AGM1/PGM3). *Eur. J. Org. Chem.*, 2018 Mar, 1946-1952.
19. Ricciardiello F, Votta G, Palorini R, Raccagni I, Brunelli L, Paiotta A, Tinelli F, D'Orazio G, Valtorta S, De Gioia L, Pastorelli R, Moresco RM, La Ferla B, **Chiaradonna F***. Inhibition of the Hexosamine Biosynthetic Pathway by targeting PGM3 causes breast cancer growth arrest and apoptosis. *Cell Death Dis*. 2018 Mar 7;9(3):377. *Corresponding Author
20. Nonnenmacher Y, Palorini R, d'Herouël AF, Krämer L, Neumann-Schaal M, **Chiaradonna F**, Skupin A, Wegner A, Hiller K. Analysis of mitochondrial metabolism in situ: Combining stable isotope labeling with selective permeabilization. *Metab Eng*. 2016 Dec 15.
21. **Chiaradonna F***, Pirola Y, Ricciardiello F, Palorini R. Transcriptional profiling of immortalized and K-ras-transformed mouse fibroblasts upon PKA stimulation by forskolin in low glucose availability. *Genomics Data*. 2016, Sep; 9: 100-104. *Corresponding Author
22. Palorini R, Votta G, Pirola Y, De Vitto H, De Palma S, Airolti C, Vasso M, Ricciardiello F, Lombardi PP, Cirulli C, Rizzi R, Nicotra F, Hiller K, Gelfi C, Alberghina L, **Chiaradonna F***. Protein Kinase A Activation Promotes Cancer Cell Resistance to Glucose Starvation and Anoikis. *PLoS Genet*. 2016 Mar 15;12(3):e1005931. *Corresponding Author
23. **Chiaradonna F**, Barozzi I, Miccolo C, Bucci G, Palorini R, Fornasari L, Botrugno OA, Pruneri G, Masullo M, Passafaro A, Galimberti VE, Fantin VR, Richon VM, Pece S, Viale G, Di Fiore PP, Draetta G, Pelicci PG, Minucci S, Chiocca S. Redox-Mediated Suberoylanilide Hydroxamic Acid Sensitivity in Breast Cancer. *Antioxid Redox Signal*. 2015 Jul 1;23(1):15-29.
24. **Chiaradonna F***, Cirulli C, Palorini R, Votta G, Alberghina L. New insights in the connection between HDACs, cell metabolism and cancer. *Antioxid Redox Signal*. 2015 Jul 1;23(1):30-50. *Corresponding Author
25. Goodson WH 3rd, ... **Chiaradonna F** et al., Assessing the carcinogenic potential of low-dose exposures to chemical mixtures in the environment: the challenge ahead. *Carcinogenesis*. 2015 Jun;36 Suppl 1:S254-96.

26. Robey RB, Weisz J, Kuemmerle NB, Salzberg AC, Berg A, Brown DG, Kubik L, Palorini R, Al-Mulla F, Al-Temaimi R, Colacci A, Mondello C, Raju J, Woodrick J, Scovassi AI, Singh N, Vaccari M, Roy R, Forte S, Memeo L, Salem HK, Amedei A, Hamid RA, Williams GP, Lowe L, Meyer J, Martin FL, Bisson WH, **Chiaradonna F**, Ryan EP. Metabolic reprogramming and dysregulated metabolism: cause, consequence and/or enabler of environmental carcinogenesis? *Carcinogenesis*. 2015 Jun;36 Suppl 1:S203-31.
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28. Palorini R, Cammarata FP, Balestrieri C, Monestiroli A, Vasso M, Gelfi C, Alberghina L, **Chiaradonna F***. Glucose starvation induces cell death in K-ras-transformed cells by interfering with the hexosamine biosynthesis pathway and activating the unfolded protein response. *Cell Death Dis*. 2013 Jul 18;4:e732. *Corresponding Author
29. Palorini R, Simonetto T, Cirulli C, **Chiaradonna F***. Mitochondrial complex I inhibitors and forced oxidative phosphorylation synergize in inducing cancer cell death. *Int J Cell Biol*. 2013;2013:243876. *Corresponding Author
30. Di Fiore R, Fanale D, Drago-Ferrante R, **Chiaradonna F**, Giuliano M, De Blasio A, Amodeo V, Corsini LR, Bazan V, Tesoriere G, Vento R and Russo A. Genetic and Molecular Characterization of The Human Osteosarcoma 3AB-OS Cancer Stem Cell Line: A Possible Model For Studying Osteosarcoma Origin and Stemness. *J Cell Physiol*. 2013 Jun;228(6):1189-201.
31. Palorini R, De Rasio D, Gaviraghi M, Sala Danna L, Signorile A, Cirulli C, **Chiaradonna F***, Alberghina L and Papa S. Oncogenic K-ras expression is associated with derangement of the cAMP/PKA pathway and forskolin-reversible alterations of mitochondrial dynamics and respiration. *Oncogene*. 2013 Jan 17;32(3):352-62 *Co-Corresponding Author
32. Alberghina L, Gaglio D, Gelfi C, Moresco RM, Mauri G, Bertolazzi P, Messa C, Gilardi MC, **Chiaradonna F** and Vanoni M. Cancer cell growth and survival as a system-level property sustained by enhanced glycolysis and mitochondrial metabolic remodeling. *Front Physiol*. 2012 Sep 12;3:362.
33. Gaglio D, Metallo CM, Gameiro PA, Hiller K, Danna LS, Balestrieri C, Alberghina L, Stephanopoulos G, **Chiaradonna F**. Oncogenic K-Ras decouples glucose and glutamine metabolism to support cancer cell growth. *Mol Syst Biol*. 2011 Aug 16;7:523.
34. **Chiaradonna F***, Moresco RM, Airolidi C, Gaglio D, Palorini R, Nicotra F, Messa C, Alberghina L. From cancer metabolism to new biomarkers and drug targets. *Biotechnol Adv*. 2011 Jul 23. *Corresponding Author
35. Balestrieri C, Vanoni M, Hautaniemi S, Alberghina L, **Chiaradonna F***. Integrative transcriptional analysis between human and mouse cancer cells provides a common set of transformation associated genes. *Biotechnol Adv*. 2011 Jun 29. *Corresponding Author
36. Baracca A, **Chiaradonna F**, Sgarbi G, Solaini G, Alberghina L, Lenaz G. Mitochondrial Complex I decrease is responsible for bioenergetic dysfunction in K-ras transformed cells. *Biochim Biophys Acta*. 2010 Feb;1797(2):314-23.
37. Alfieri R, Barberis M, **Chiaradonna F***, Gaglio D, Milanese L, Vanoni M, Klipp E, Alberghina L. Towards a systems biology approach to mammalian cell cycle: modeling the entrance into S phase of quiescent fibroblasts after serum stimulation. *BMC Bioinformatics*. 2009 Oct 15;10 Suppl 12:S16. *First Co-authorship
38. Balestrieri C, Alberghina L, Vanoni M, **Chiaradonna F***. Data recovery and integration from public databases uncovers transformation-specific transcriptional downregulation of

- cAMP-PKA pathway encoding genes. BMC Bioinformatics. 2009 Oct 15;10 Suppl 12:S1.
*Corresponding Author
39. Gaglio D, Soldati C, Vanoni M, Alberghina L, **Chiaradonna F***. Glutamine deprivation induces abortive s-phase rescued by deoxyribonucleotides in k-ras transformed fibroblasts. PLoS One. 2009;4(3):e4715. *Corresponding Author
 40. **Chiaradonna F***, Balestrieri C, Gaglio D, Vanoni M. RAS and PKA pathways in cancer: new insight from transcriptional analysis. Front Biosci. 2008 May 1;13:5257-78.
*Corresponding Author
 41. **Chiaradonna F***, Gaglio D, Vanoni M, Alberghina L. Expression of transforming K-Ras oncogene affects mitochondrial function and morphology in mouse fibroblasts. Biochim Biophys Acta. 2006 Sep-Oct;1757(9-10):1338-56. *Corresponding Author
 42. **Chiaradonna F**, Sacco E, Manzoni R, Giorgio M, Vanoni M, Alberghina L. Ras-dependent carbon metabolism and transformation in mouse fibroblasts. Oncogene. 2006 Aug 31;25(39):5391-404.
 43. **Chiaradonna F**, Magnani C, Sacco E, Manzoni R, Alberghina L, Vanoni M. Acquired glucose sensitivity of k-ras transformed fibroblasts. Biochem Soc Trans. 2005 Feb;33(Pt 1):297-9.
 44. Alberghina L, **Chiaradonna F**, Vanoni M. Systems biology and the molecular circuits of cancer. Chembiochem. 2004 Oct 4;5(10):1322-33.
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 47. **Chiaradonna F**, Fontana L, Iavarone C, Carriero MV, Scholz G, Barone MV, Stoppelli MP. Urokinase receptor-dependent and -independent p56/59(hck) activation state is a molecular switch between myelomonocytic cell motility and adherence. EMBO J. 1999 Jun 1;18(11):3013-23.
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Book chapter

De Vitto H, Palorini R, Votta G, **Chiaradonna F**. Apoptosis and Beyond: The Many Ways Cells Die. Nov 2018. Publisher: Wiley-Blackwell. DOI: 10.1002/9781119432463.ch2. ISBN: 978-1-119-43242-5.

Contributions in indexed conference proceedings

1. **Chiaradonna F**, Ricciardiello F, Votta G, Palorini R, Raccagni I, Brunelli L, De Gioia L, Pastorelli R, Moresco RM, La Ferla B. Inhibition of the hexosamine biosynthetic pathway by targeting PGM3 causes breast cancer growth arrest and apoptosis. ESMO Open 2018.
2. Monestiroli A, Balestrieri C, Gaglio D, Danna L, Cammarata F, Gelfi C, Alberghina L, **Chiaradonna F** (2011). Glucose shortage dependent apoptosis in transformed cells upon activation of UPR-autophagy pathway. Biochemistry for Tomorrow's Medicine. THE FEBS JOURNAL, vol. 278, Published by Blackwell Pub. on behalf of the Federation of European Biochemical Societies, ISSN: 1742-464X, Torino (Italy), 2011, doi: 10.1111/j.1742-4658.2011.08137.x
3. **Chiaradonna F**, Gaglio D, Metallo CM, Gameiro PA, Hiller K, Danna LS, Balestrieri C, Stephanopoulos G, Alberghina L (2011). Oncogenic K-ras decouples glucose and glutamine metabolism to support cancer cell growth. THE FEBS JOURNAL, Biochemistry for Tomorrow's Medicine. Torino (Italy), 25-30 June 2011, vol. 278, p. 199, ISSN: 1742-464X.
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5. Balestrieri CB, Hautaniemi SH, Vanoni MV, Alberghina LA, **Chiaradonna F** (2010). Comparative transcriptional analysis between a K-ras cell model of transformation and the NCI60 human cancer cells collection. JOURNAL OF BIOTECHNOLOGY, In: Biotechnology for the Sustainability of Human Society. Rimini, 14-18 September 2010, vol. 150, p. S103-S104, ISSN: 0168-1656.
6. Gaglio D, Metallo C, **Chiaradonna F**, Balestrieri C, Danna LS, Stephanopoulos G, Alberghina L, Messa, C (2010). High throughput metabolomics analysis in normal and K-Ras transformed murine fibroblasts. JOURNAL OF BIOTECHNOLOGY, In: Biotechnology for the Sustainability of Human Society. Rimini, 14-18 September 2010, vol. 150, p. S458, ISSN: 0168-1656.
7. Gaviraghi M, Palorini R, Danna LS, De Rasmio D, Signorile A, Balestrieri C, Vanoni M, Papa S, Alberghina L, **Chiaradonna F** (2010). PKA stimulation protects K-ras transformed cells from apoptosis induced by glucose depletion reactivating mitochondrial function. JOURNAL OF BIOTECHNOLOGY, In: Biotechnology for the Sustainability of Human Society. Rimini, 14-18 September 2010, vol. 150, p. S92-S93, ISSN: 0168-1656.
8. Palorini R, De Rasmio D, Gaviraghi M, Danna L, Signorile A, Papa S, Alberghina L, **Chiaradonna F** (2010). PKA stimulation protects K-ras transformed cells from apoptosis induced by glucose depletion reactivating mitochondrial function. In: Biochemistry for Tomorrow's Medicine. JOURNAL OF BIOTECHNOLOGY, vol. 150, p. S92-S93, Elsevier, ISSN: 0168-1656, Rimini (Italy), 2010, doi: 10.1016/j.jbiotec.2010.08.239.
9. Alcalay M, **Chiaradonna F**, Pelicci PG (1998). Analysis of gene expression patterns in acute myeloid leukemia. BLOOD, vol. 92, p. 207B, ISSN: 0006-4971.

Milano 03/05/2023

Ferdinando Chiaradonna

