
BIOGRAPHICAL SKETCH

NAME Federica Chiara	POSITION TITLE Assistant Professor
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EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Conservatorio G. Verdi Torino	Piano Diploma	1989	Piano recital
University of Torino, Italy	M.S.	1994	Cell biology
Institute for Cancer Research IRCCS, Candiolo, Italy	PhD	1999-2001	Cellular Sciences, oncology
Ludwig Institute for Cancer Research, Uppsala, Sweden	Post-doctoral training	2002-2004	Molecular Oncology/Cell Biology
Fondazione Ottolenghi, S. Luigi Hospital, Orbassano, Italy, and Neurosciences Department, Leuven	Junior group leader position	2004-2006	Neurology
University of Padova, Italy	Research grant	2007	Mitochondrial Physiology and Cancer

A. Personal Statement

My topic from 2001 is the molecular oncology. I started my research activity investigating the molecular determinants of neoplastic transformation in mutated receptors tyrosine kinases under the guide of leaders in the field as Paolo Comoglio and Carl Henric Heldin, and on the mitochondria role in cancer taking advantage of a tight collaboration with Paolo Bernardi, a leader in the field of mitochondrial pathophysiology. Under the guide of Carlos Dotti, I spent two years to study the molecular bases of the survival and ageing mechanisms in neurons. In the Prof. Andrea Trevisan laboratory I had the occasion to improve my toxicological and pharmacological knowledge through the study of both the cytotoxicity mechanism and the screening of new chemotherapy molecules designed and produced by the inorganic chemistry group of Padova University, directed by Prof. Fregona. The integration of both toxicology and molecular oncology experience has been instrumental in studies on cancerogenesis and risk assessment. Recently, I focused on the exploration of the molecular mechanisms sustaining cell transformation in in cells of NF1-associated tumors, still poorly characterized and the investigation of which requires competence in both oncology and neuronal biology.

B. Position and Employment

1992-1994	Internship at the laboratory of animal biology, University of Torino, Italy
1996-2001	PhD in Cellular biological and technical sciences, Molecular Oncology Department Institute for Cancer Research IRCCS, Candiolo, Italy.
1997-2001	Post doctoral experience at the Institute for Cancer Research, Candiolo, Torino, Italy
2002-2004	Post doctoral experience, laboratory of Molecular oncology, Ludwig Institute for Cancer Research, Uppsala, Sweden.
2004-2006	Junior group leader, Fondazione Ottolenghi, S. Luigi Hospital, Orbassano, Italy and Neurosciences Department, Leuven.
2006	Research Grant at the Biomedical Sciences Department, University of Padova, Italy
2007	Assistant Professor, Public Health Department University of Padova, Italy

C. Selected peer-reviewed publications:

- **CHIARA F.**, MICHIELI P, PUGLIESE L, COMOGLIO PM (2003). Mutations in the met oncogene unveil a "dual switch" mechanism controlling tyrosine kinase activity. **The Journal of Biological Chemistry**, vol. 278; p. 29352-29358, ISSN: 0021-9258
- **CHIARA F.**, BISHAYEE S, HELDIN CH, DEMOULIN JB (2004). Autoinhibition of the platelet-derived growth factor beta-receptor tyrosine kinase by its C-terminal tail. **The Journal of Biological Chemistry**, vol. 279; p. 19732-19738, ISSN: 0021-9258
- **CHIARA F.**, GOUMANS MJ, FORSBERG H, AHGREN A, RASOLA A, ASPENSTROM P, WERNSTEDT C, HELLBERG C, HELDIN CH, HEUCHEL R (2004). A gain of function mutation in the activation loop of platelet-derived growth factor beta-receptor deregulates its kinase activity. **The Journal of Biological Chemistry**, vol. 279; p. 42516-42527, ISSN: 0021-9258
- MARTIN MG, PERGA S, TROVO L, RASOLA A, HOLM P, RANTAMAKI T, HARKANY T, CASTREN E, **CHIARA F.***, DOTTI CG (2008). Cholesterol loss enhances TrkB signaling in hippocampal neurons aging in vitro. **Molecular Biology of the Cell**, vol. 19; p. 2101-2112, ISSN: 1059-1524, doi: 10.1091/mbc.E07-09-0897
- **Chiara F is Corresponding Author**
- MARTIN M, TROVÒ L, PERGA S, SADOWSKAA A, RASOLA A, **CHIARA F.** and CARLOS DOTTI (2009). Cyp46-mediated cholesterol loss promotes survival in stressed hippocampal neurons. **Neurobiology of Aging**, ISSN: 0197-4580, doi: 10.1016
- **CHIARA F.**, CASTELLARO D, MARIN O, PETRONILLI V, BRUSILOW W.S, JUHASZOVA M, SOLLOTT S.J, FORTE M, BERNARDI P. AND ANDREA RASOLA (2008). Hexokinase II Detachment from Mitochondria Triggers Apoptosis through the Permeability Transition Pore Independent of Voltage-Dependent Anion Channels. **PLOS ONE**, ISSN: 1932-6203
- RASOLA A, SCIACOVELLI M, **CHIARA F.***, PANTIC B, BRUSILOW WS, BERNARDI P (2010). Activation of mitochondrial ERK protects cancer cells from death through inhibition of the permeability transition. **Proceedings of The National Academy of Sciences of The United States of America (PNAS)**, vol. 107; p. 726-731, ISSN: 0027-8424, doi: 10.1073/pnas.0912742107
***CHIARA F is second author**
- LEMBO-FAZIO L, NIGRO G, NOEL G, ROSSI G, **CHIARA F.**, TSILINGIRI K, RESCINIO M, RASOLA A. AND BERNARDINI ML (2010). Gadd45 α activity is the principal effector of Shigella mitochondria-dependent epithelial cell death in vitro and ex vivo. **Cell Death & Disease**. Chief editors: Gerry Melino, Pierluigi Nicotera, Guido Kroemer

- MARZANO C, RONCONI L, **CHIARA F.**, GIRON MC, FAUSTINELLI I, CRISTOFORI P, TREVISAN A, FREGONA D (2010). Gold(III)-dithiocarbamate anticancer agents: Activity, toxicology and histopathological studies in rodents. **International Journal of Cancer**, ISSN: 0020-7136, doi: 10.1002/ijc.25684
- TREVISAN A, NICOLLI A, **CHIARA F.** (2010). Are rats the appropriate experimental model to understand age-related renal drug metabolism and toxicity?. **Expert Opinion on Drug Metabolism & Toxicology**, vol. 6; p. 1451-1459, ISSN: 1742-5255, doi: 10.1517/17425255.2010.531701
- **CHIARA F.**, GAMBALUNGA A., SCIACOVELLI M., NICOLLI A., RONCONI L., FREGONA D., RASOLA A., TREVISAN A. (2012). Chemotherapeutic induction of mitochondrial oxidative stress activates GSK-3 α/β and Bax, leading to permeability transition pore opening and tumor cell death **Cell Death & Disease** - LONDON, ENGLAND: NATURE PUBLISHING GROUP, - London, United Kingdom: Macmillan Magazines Limited -[Baltimore, Md.] : Williams & Wilkins, [c1987]
- **CHIARA F.**, RASOLA A (2013). GSK-3 and mitochondria in cancer cells. **Frontiers In Oncology**, vol. 3, p. 1-6, ISSN: 2234-943X, doi: 10.3389/fonc.2013.00016
- MONGILLO M, **CHIARA F.**, RANZATO M, TREVISAN A (2010). Strategy for hepatitis A seroprevalence survey in a population of young people. **VACCINE**, vol. 28; p. 6985-6988, ISSN: 0264-410X, doi: 10.1016/j.vaccine.2010.08.044
- **CHIARA F.**, BARTOLUCCI GB, MONGILLO M, FERRETTO L, NICOLLI A TREVISAN A. (2013). Hepatitis B vaccination at three months of age: a successful strategy?. **VACCINE**, vol. 31, p. 1696-1700, ISSN: 0264-410X, doi: 10.1016/j.vaccine.2013.01.046
- **CHIARA, F.**, BARTOLUCCI, G.B., CATTAI, M., PIAZZA, A., NICOLLI, A., BUJA, A., TREVISAN, A; Pages 62-68; Hepatitis B vaccination of adolescents: Significance of non-protective antibodies; **VACCINE** Volume 32, Issue 1, 17 December 2013
- **CHIARA, F.**; A, RASOLA, A. GSK-3 and mitochondria in cancer cells; **Frontiers in Oncology** Open Access Volume 3 FEB, 2013, Article number Article 00016;
- NICOLLI, **CHIARA, F.**, GAMBALUNGA, A. EMAIL AUTHOR, CARRIERI, BARTOLUCCI, TREVISAN, A. Reliability of urinary excretion rate adjustment in measurements of hippuric acid in urine; **International Journal of Environmental Research and Public Health** Open Access Volume 11, Issue 7, 11 July 2014, Pages 7036-7044
- NARDON, C.A, **CHIARA, F.**, BRUSTOLIN, L.A, GAMBALUNGA, A.B, CISCATO, F.C, RASOLA, A.C, TREVISAN, A.B, FREGONA, D. Gold(III)-pyrrolidinedithiocarbamate Derivatives as Antineoplastic Agents; **ChemistryOpen** Open Access Volume 4, Issue 2, 1 April 2015, Pages 183-191
- TREVISAN, A. NICOLLI, A., **CHIARA, F.** Hepatitis B: Prevention, protection and occupational risk; **Future Virology** Volume 10, Issue 1, 1 January 2015, Pages 53-61
- TREVISAN, A., MORANDIN, M., FRASSON, C., PANTALEONI, A., DONAZZAN, A., BALLARIN, D., NICOLLI, A., BARTOLUCCI, G.B., **CHIARA, F.** Prevalence of measles virus-specific IgG antibodies according to vaccination schedule in medical students of Padua University; **Future Virology** Volume 10, Issue 7, 1 July 2015, Pages 817-826
- BORELLA-VENTURINI, M., FRASSON, C., PALUAN, F., DE NUZZO, D., DI MASI, G., GIRALDO, M., **CHIARA, F.**, TREVISAN, A Tetanus vaccination, antibody persistence and decennial booster: A serosurvey of university students and at-risk workers; **Epidemiology and Infection**, Volume 145, Issue 9, 1 July 2017, Pages 1757-1762
- SCINTILLA, S.A, BRUSTOLIN, L.A, GAMBALUNGA, A.B, **CHIARA, F.** TREVISAN, A.B, NARDON, C. FREGONA, D. Ru(III) anticancer agents with aromatic and non-aromatic dithiocarbamates as ligands: Loading into nanocarriers and preliminary biological studies; **Journal of Inorganic Biochemistry** Vol 166, 1 JANUARY 2017, PAGES 76-86
- MASGRAS, I, CISCATO, F. , BRUNATI, A.M. , TIBALDI, E. INDRACCOLO, S. , CURTARELLO, M. , **CHIARA, F.** , CANNINO, G. PAPALEO, E. , LAMBRUGHU, M. , GUZZO, G. , GAMBALUNGA, A. PIZZI, M. GUZZARDO, V. , RUGGE, M. , VULJAN, S.E. , CALABRESE, F. , BERNARDI, P. , RASOLA, A. Absence of Neurofibromin Induces an Oncogenic Metabolic Switch via Mitochondrial ERK-Mediated Phosphorylation of the Chaperone TRAP1; **Cell Reports** Open Access Volume 18, Issue 3, 17 January 2017, Pages 659-672

- CISCATO F, FILADI R, MASGRAS I, PIZZI M, MARIN O, DAMIANO N, PIZZO P, GORI A, FREZZATO F, **CHIARA F**, TRENTIN L, BERNARDI P, RASOLA A, Hexokinase 2 displacement from mitochondria-associated membranes prompts Ca²⁺ -dependent death of cancer cells; **EMBO Rep.** 2020 Jul 3;21(7):e49117. doi: 10.15252/embr.201949117. Epub 2020 May 8.
- **CHIARA F**, INDRACCOLO S, TREVISAN A Filling the Gap Between Risk Assessment and Molecular Determinants of Tumor Onset, **Carcinogenesis.** 2020 Dec 15; bgaa135. doi: 10.1093/carcin/bgaa135. Online ahead of print.
- ERRICO E, ANDREA ERRICO, ANNA STOCO, VINCENT M. RICCARDI, ALBERTO GAMBALUNGA, FRANCO BASSETTO, MARTINA GRIGATTI, AMEDEO FERLOSIO, GIANLUCA TADINI, DEBORA GAROZZO, STEFANO FERRARESI, ANDREA TREVISAN, SANDRA GIUSTINI, ANDREA RASOLA and FEDERICA CHIARA Neurofibromin deficiency and extracellular matrix cooperate to increase transforming potential through FAK-dependent signalling. **Cancers.** 2021 under revision.

Lectures and Training courses as invited speaker

2014 Servizio di Prevenzione Igiene e Sicurezza negli Ambienti di Lavoro E ASSOCIAZIONE PADOVANA DEI MEDICI COMPETENTI DEL LAVORO Convegno "Aggiornamento sulla cancerogenesi di origine ambientale e professionale" 4.11.2014 Title: From black bile to epigenomic tuning: unraveling the complexity of tumor biology

2015 SIML Società Italiana di Medicina del Lavoro. 77 ° Congresso Nazionale della medicina del lavoro. Riviera del Garda Titolo: I nuovi paradigmi dell'oncogenesi: epigenetica ed infiammazione

2015-2019 Corsi di formazione Associazione Padovana dei Medici Competenti del Lavoro (A.P .M.C.L.) Cancerogenesi chimica. CANCEROGENI CHIMICI. DALLA VALUTAZIONE DEL RISCHIO CHIMICO ALLA SORVEGLIANZA SANITARIA DIPARTIMENTO DI PREVENZIONE

BOOK CONTRIBUTIONS:

2006

CHIARA F, A. RASOLA (2006). Apoptosis and Disease: Unbalancing the Survival Equilibrium. In: A.J. CORVIN. New Developments in Cell Apoptosis Research. p. 1-52, NOVA Publishers

2019

GIANLUCA TADINI, ERIC LEGIUS, HILDE BREMS Multidisciplinary approach to Neurofibromatosis Type 1, Springer book 86905578

CHIARA F: Chapter no 10

Title: Mechano-transduction and Neurofibromin loss: Partner in Neurofibroma Development

D. Research Support

2012: Institutional grant of the Università di Padova for a project titled: "**Probing the mechanism of action of novel gold-based peptidomimetic anticancer agents: chemical and in vitro biochemical investigations**"

(two years, completed). Role on Project: PI

2013: Research project of the Padova University titled: "**Study of the molecular determinants sustaining the neurofibromas onset in patients affected by neurofibromatosis type 1**"

" (two years). Role on Project: PI

2014: Grant of the Padova University project titled. "**Generation and characterization of a new three-dimensional experimental model in vitro suitable for the investigation of the molecular events sustaining the neoplastic transformation leading to neurofibroma formation in children affected by neurofibromatosis type 1** ." (two years).

2014: Research project of the Padova University titled: "**Molecular bases of neurofibromas in patients affected by neurofibromatosis type 1**" (two years). Role on Project: PI

2016- BIRD "Search of the molecular mechanisms sustaining Peripheral Nerve Sheat Tumors in patients affected by Neurofibromatosis type 1" . Role on the project: PI

2016-2017: John Hopkins University grant (JHO) NF1 The Neurofibromatosis Therapeutic Acceleration. Completed. Role on the project: PI

Academy:

2009-2012 Teaching of Toxicology. Degree in Techniques of the Prevention in the environment and occupational. Feltre and Padua centers.

2012-2018 Teaching of Occupational Medicine. Degree in Techniques of the Prevention in the environment and occupational. Feltre and Padua centers.

2018-2020 Environmental Ecology.


- Degree in Techniques of the Prevention in the environment and occupational. Feltre and Padua centers.
- Degree in Sciences of health prevention

2015-2021 Occupational Medicine. Master's Degree Course in Science of Diagnostic Techniques in Health Professions.

2016-2021

- - School of Specialization of Occupational Medicine (Department of Cardiological, Thoracovascular and Public Health, DSCTV). Assignment Teaching Occupational Medicine: Occupational Carcinogenesis.
- School of Specialization in chemical hasard risk evaluation (Department of inorganic chemistry, DISC). Assignment Teaching EVALUATION OF EXPOSURE SCENARIOS 2 (Examples and case studies concerning exposure to mutagenic and carcinogenic substances. Risk in industrial and non-industrial environments: agriculture, healthcare companies, homes)
- Training course for the chemical risk from carcinogenic exposure for employees of the University of Padua

2020-2021 Member of the committee of the PhD course: Clinical and Experimental Oncology, Veneto Oncology Institute (IOV).



Social Empowerment

2018 to present: President of Patient's association Linfa OdV.

Organized Congresses and events

2018 Rare disease day (Eurordis)- Convegno: Terapie chirurgiche e farmacologiche innovative per la cura della neurofibromatosi di tipo 1. Neurofibromatosis diseases, Padova, Sala Rossini, sponsored by neurological Sciences department (DMS), municipality of Padua and CSV, volunteers Center. Scientific program organizer.

2020 Rare disease day (Eurordis)-Padova; Conference, Pazienti in cerca di autore; Centro Congressi , Via S. Francesco, Padova; sponsored by Neurological Sciences Department (DMS), municipality of Padova and Centro Servizi di volontariato (CSV, volunteers Center). Scientific program organizer

2021 Rare disease day (Eurordis)- Nel prisma della rarità. 28 Febbraio; sponsored by Neurological Sciences (DMS) and by Biomedical Sciences Departments, Piattaforma web; Scientific; program organizer.

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