

**Curriculum vitae**  
**MONICA, Valentina**

**Personal details**

Born in Torino (TO), 23.09.1982  
Nationality: Italian  
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ORCID ID: 0000-0002-6598-0826;  
Scopus ID: 26039267900;  
Researcher ID: AAC-2334-2022

**Education**

- 2009-2012 **Ph.D. in Human Oncology and Biomedical Sciences**  
Department of Clinical and Biological Sciences of University of Torino.  
Thesis title: “Molecular markers with diagnostic, prognostic and/or predictive role in lung carcinoma”.
- 2005-2006 **II° level degree in Molecular Biotechnology**, at University of Torino (Italy).  
Thesis title: “Role of p130Cas adaptor in ErbB2-Neu-induced tumoral transformation”

**Professional experiences and current position**

- 02/2021 - **Research Associate with time contract (RTD Legge 240/2010 dell’art. 24 comma 3 tipologia A)** in the Academic Recruitment Field 05/E1 – General Biochemistry, Academic Discipline **BIO/10** Biochemistry, at the Department of Oncology, University of Torino (Italy).
- 2020-2021 Post-Doctoral Research Associate at Candiolo Cancer Institute, University of Torino - Department of Oncology.  
Research Contract in AIRC Grant #23211\_PI Prof. Luca Primo (2019-2024) “Exploiting RAS vulnerabilities to target KRAS-driven lung and colon cancer”
- 2017-2019 Post-Doctoral Research Associate at Candiolo Cancer Institute, University of Torino - Department of Oncology  
Research Contract in AIRC Grant #18675\_PI Prof. Luca Primo (2017-2019)  
“Development of an organoids living biobank to study colon cancer biology and personalized therapeutic approaches”  
Collaborator grant AIOM \_PI Prof. Luca Primo (2018-2019)  
“Generation and characterization of a living organoid biobank of lung cancer for personalized medicine approaches”
- 2013-2017 Academic Fellowship – co-finanziato M.I.U.R. (2 years) – Renew (2-years)  
Department of Oncology  
“Genomic characterization of lung cancer cells in patients with age < 45 years at diagnosis time”

**Participation to Directive Boards of Scientific Societies and/or Institutions:**

- Research Associate (RTDA BIO/10) at the Department of Oncology board, University of Torino.
- Associate member of Biochemistry and Molecular Biology Society (SIB).
- Associate member of European Association for Cancer Research (EACR)  
EACR member ID number: EACR33112
- Associate member of American Association for Cancer Research (AACR)

AACR member ID number: 376947

### **Teaching activity:**

- 2021-2024      Teacher  
Course of Biochemical, Cellular and Molecular Technologies (BIO0201 Module A).  
Degree in Biotechnology, Torino, University of Torino (UniTo)
- 2014-2020      Teaching Assistant
- Course of Biology & Genetics  
Nursing Registered Degree course, Cuneo (UniTo)
  - Course of Biochemistry  
Nursing Registered Degree course, Cuneo (UniTo)
  - Course of Biology  
Biomedical Laboratory Techniques Degree, Cuneo (UniTo)
  - Course of Biology  
Radiographic Diagnostics Degree, Cuneo (UniTo)

### **Research main topics**

My scientific experience encompasses more than 15 years of research activities and projects about cancer biology in basic and translational research, starting with breast cancer cell and mouse models and moving to the study of human lung tumorigenesis, with experience in cellular and molecular biology, biochemistry and metabolic fields, 3D cell model applications.

During the PhD, I worked on the study of molecular markers with diagnostic, prognostic and predictive values in both lung and malignant pleural mesothelioma tumorigenesis and therapeutic response, acquiring also skills in new technologies of next-generation sequencing (NGS).

### **Grants**

- 2023. Fondo per il Programma Nazionale di Ricerca e Progetti di Rilevante Interesse Nazionale (PRIN) 2022ECBA39  
**Origami Project\_ Mimicking in vivo-like tumor microenvironment to model non-small cell lung cancer patient-derived organoids dynamics**  
**Role: PI**

### **Main projects as co-PI**

The two main projects coordinated with the supervision of Prof. Luca Primo, concern:

- The expansion and characterization of healthy/tumor organoids collections, generated from surgically resected samples of patients affected by early-stage non-small cell lung cancer (NSCLC).
- The role and alteration of Glutamine Metabolism in NSCLC models.

Further projects include strong and very fruitful collaborations with extra-UNITO institutions.

- The collaboration with Dr. Francesca Frascella (DISAT group at the Politecnico of Torino) aims to study skills and properties of alternative hydrogel-based matrices, focusing on their biomimetic abilities and tunable physical characteristics applied to lung cancer cell models.
- In collaboration with Dr. Leonardo Mortati (INRIM, Torino), we are applying imaging label free approaches to study lipid content in 2D and 3D lung cancer models, by integrating multimodal nonlinear optics Coherent Anti-Stokes Raman Scattering, Second Harmonic Generation and Two-Photon Excitation Fluorescence techniques.

**Bibliometry (2009-2023, March)** ([www.scopus.com](http://www.scopus.com))

Author of **30 articles, 1 book chapter**.

Scopus profile available at:

<https://www.scopus.com/authid/detail.uri?authorId=26039267900>

**h-index: 17; Citations: 1013**

### **10 best publications**

Lo Iacono M, Monica V, Righi L, Grosso F, Libener R, Vatrano S, Bironzo P, Novello S, Musmeci L, Volante M, Papotti M, Scagliotti GV. “*Targeted next-generation sequencing of cancer genes in advanced stage malignant pleural mesothelioma: a retrospective study.*” Journal of Thoracic Oncology. 2014 Doi: 10.1097/JTO.0000000000000436

Monica V, Ceppi P, Righi L, Tavaglione V, Volante M, Pelosi G, Scagliotti G, Papotti M. “*Desmocollin-3: a new marker of squamous differentiation in undifferentiated large-cell carcinoma of the lung.*” Modern Pathology, 2009. Doi: 10.1038/modpathol.2009.30

Monica V, Scagliotti GV, Ceppi P, Righi L, Cambieri A, Lo Iacono M, Saviozzi S, Volante M, Novello S, Papotti M. “*Differential Thymidylate Synthase Expression in Different Variants of Large-Cell Carcinoma of the Lung*” Clinical Cancer Research. 2009. Doi: 10.1158/1078-0432.CCR-09-1641

Del Bufalo D, Desideri M, De Luca T, Di Martile M, Gabellini C, Monica V, Busso S, Eramo A, De Maria R, Milella M, Trisciuglio D. “*Histone deacetylase inhibition synergistically enhances pemetrexed cytotoxicity through induction of apoptosis and autophagy in non-small cell lung cancer.*” Molecular Cancer. 2014. Doi: 10.1186/1476-4598-13-230.

Lo Iacono M, Monica V, Saviozzi S, Ceppi P, Bracco E, Papotti M, Scagliotti GV. “*Aurora Kinase A expression is associated with lung cancer histological-subtypes and with tumor de-differentiation.*” Journal of Translational Medicine. 2011 Doi: 10.1186/1479-5876-9-100.

Monica V, Lo Iacono M, Bracco E, Busso S, Di Blasio L, Primo L, Peracino B, Papotti M, Scagliotti GV. “*Dasatinib modulates sensitivity to pemetrexed in malignant pleural mesothelioma cell lines.*” Oncotarget. 2016 Nov 22;7(47):76577-76589. doi: 10.18632/oncotarget.10428.

Ceppi P, Papotti M, Monica V, Iacono ML, Saviozzi S, Pautasso M, Novello S, Mussino S, Bracco E, Volante M, Scagliotti GV. “*Effects of Src kinase inhibition induced by dasatinib in non-small cell lung cancer cell lines treated with cisplatin.*” Molecular Cancer Therapeutics. 2011. Doi: 10.1158/1535-7163.MCT-09-0151

Lo Iacono M, Monica V, Vavalà T, Gisabella M, Saviozzi S, Bracco E, Novello S, Papotti M, Scagliotti GV. “*ATF2 contributes to cisplatin resistance in non-small cell lung cancer and celastrol induces cisplatin resensitization through inhibition of JNK/ATF2 pathway.*” International journal of cancer. 2014. Doi:10.1002/ijc.29302.

Shaw AT, Varghese AM, Solomon BJ, Costa DB, Novello S, Mino-Kenudson M, Awad MM, Engelman JA, Riely GJ, Monica V, Yeap BY, Scagliotti GV. “*Pemetrexed-based chemotherapy in patients with advanced, ALK-positive non-small cell lung cancer.*” Annals of Oncology 2013 Doi:10.1093/annonc/mds242.

Patil NS, Righi L, Koeppen H, Zou W, Izzo S, Grosso F, Libener R, Lo Iacono M, Monica V, Buttigliero C, Novello S, Hegde PS, Papotti M, Kowanetz M, Scagliotti GV. “*Molecular and Histopathological Characterization of the Tumor Immune Microenvironment in Advanced Stage of Malignant Pleural Mesothelioma.*” Journal of Thoracic Oncology. 2018 Doi: 10.1016/j.jtho.2017.09.1968.

Ceppi P, Novello S, Cambieri A, Longo M, Monica V, Lo Iacono M, Giaj-Levra M, Saviozzi S, Volante M, Papotti M, Scagliotti G. “*Polymerase eta mRNA expression predicts survival of non-small cell lung cancer patients treated with platinum-based chemotherapy.*” Clinical Cancer Research, Doi: 10.1158/1078-0432.CCR-08-1227

### Relevant publications in the last 5 yrs (2018-2023)

Manganaro L, Bianco S, Bironzo P, Cipollini F, Colombi D, Corà D, Corti G, Doronzo G, Errico L, Falco P, Gandolfi L, Guerrero F, Monica V et al. “*Consensus clustering methodology to improve molecular stratification of non-small cell lung cancer*” Scientific Reports, 2023 Doi: 10.1038/s41598-023-33954-x

Palmiero M, Cantarosso I, di Blasio L, Monica V, Peracino B, Primo L, Puliafito A.” *Collective directional migration drives the formation of heteroclonal cancer cell clusters*” Molecular Oncology 2023 Doi: 10.1002/1878-0261.13369

Bironzo P, Melocchi L, Monica V, Trebeschi D, Barbieri F, Maiello E, Migliorino MR, Lombardi A, Tiseo M, Righi L, Graziano P, Rossi G, Novello S.” *Immunohistochemistry with 3 different clones in anaplastic lymphoma kinase fluorescence in situ hybridization positive non-small-cell lung cancer with thymidylate synthase expression analysis: a multicentre, retrospective, Italian study*” Pathologica, 2022 Doi: 10.32074/1591-951X-756

Peracino B, Monica V, Primo L, Bracco E and Bozzaro S. “*Iron metabolism in the social amoeba Dictyostelium discoideum: a role for Ferric Chelate Reductases*” European Journal of Cell Biology, 2022 Doi: 10.1016/j.ejcb.2022.151230

Novello S, Torri V, Grohe C, Kurz S, Serke M, Wehler T, Meyer A, Ladage D, Geissler M, Colantonio I, Cauchi C, Stoelben E, Ceribelli A, Kropf-Sanchen C, Valmadre G, Borra G, Schena M, Morabito A, Santo A, Gregorc V, Chiari R, Reck M, Schmid-Bindert G, Folprecht G, Griesinger F, Follador A, Pedrazzoli P, Bearz A, Caffo O, Dickgreber N.J, Irtelli L, Wiest G, Monica V, Porcu L, Manegold C, Scagliotti G.V. *International Tailored Chemotherapy Adjuvant (ITACA) trial, a phase III multicenter randomized trial comparing adjuvant pharmacogenomic-driven chemotherapy versus standard adjuvant chemotherapy in completely resected stage II-III non-small-cell lung cancer*. Annals of Oncology, 2022. Doi: 10.1016/j.annonc.2021.09.017. PMID: 34624497

Gesmundo I, Silvagno F, Banfi D, Monica V, Fanciulli A, Gamba G, Congiusta N, Libener R, Riganti C, Ghigo E and Granata R. *Calcitriol inhibits viability and proliferation in human malignant pleural mesothelioma cells*. Frontiers in Endocrinology–2020 Doi: 10.3389/fendo.2020.559586

Palmieri M, Pinto AM, di Blasio L, Currò A, Monica V, Sarno LD, Doddato G, Baldassarri M, Frullanti E, Giliberti A, Mussolin B, Fallerini C, Molinaro F, Vaghi M, Renieri A, Primo L. *A pilot study of next generation sequencing-liquid biopsy on cell-free DNA as a novel non-invasive diagnostic tool for Klippel-Trenaunay syndrome*. Vascular. 2020. Doi: 10.1177/1708538120936421.

Somale D, Di Nardo G, di Blasio L, Puliafito A, Vara-Messler M, Chiaverina G, Palmiero M, Monica V, Gilardi G, Primo L, Gagliardi PA. *Activation of RSK by phosphomimetic substitution in the activation loop is prevented by structural constraints*. Sci Rep. 2020. Doi: 10.1038/s41598-019-56937-3. PMID: 31953410; PMCID: PMC696211.

Chiaverina G, di Blasio L, Monica V, Accardo M, Palmiero M, Peracino B, Vara-Messler M, Puliafito A, Primo L. *Dynamic Interplay between Pericytes and Endothelial Cells during Sprouting Angiogenesis*. Cells. 2019. Doi: 10.3390/cells8091109.

Patil NS, Righi L, Koeppen H, Zou W, Izzo S, Grosso F, Libener R, Loiacono M, Monica V, Buttiglieri C, Novello S, Hegde PS, Papotti M, Kowanetz M, Scagliotti GV. *Molecular and Histopathological Characterization of the Tumor Immune Microenvironment in Advanced Stage of Malignant Pleural Mesothelioma*. J Thorac Oncol. 2018. Doi: 10.1016/j.jtho.2017.09.1968. PMID: 29079455.