

## Chiara Ambrogio, PhD

Professor of Molecular Biology

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### Biosketch

Chiara Ambrogio graduated in Medical Biotechnology from the University of Turin in 2004. In 2008 she completed her PhD in Immunology and Cell Biology from the same University.

For her postdoctoral training, in 2009 she was selected with an international competition by Mariano Barbacid's laboratory in the Molecular Oncology Program at the CNIO, Madrid, Spain. She later moved to the Department of Medical Oncology at the Dana Farber Cancer Institute (DFCI) in Boston (Harvard Medical School) to complete her training as Senior Scientist in Pasi Janne's laboratory (2016-2019).

Thanks to a prestigious funding from the Armenise-Harvard Foundation (1,000,000\$), at the end of 2019 she started her independent laboratory at the Molecular Biotechnology Center (MBC), University of Turin, where she is also affiliated as Professor in Molecular Biology.

In her career she published more than 50 papers in high-level international journals such as *Nature* and *Cell*, (H index = 29), she is a speaker at international conferences on molecular oncology and translational medicine and she won numerous national and international awards, such as the prize for research on lymphomas under 30 of the Accademia dei Lincei-Rome, conferred by the President Giorgio Napolitano, the postdoc award of the AECC (Spanish Association Against Cancer), conferred by the Queen of Spain, the Scientific Merit Award of the Lung Cancer Research Foundation (LCRF), USA and the "Lorini Foundation" award for cancer research under 40.

### Education

**2004-2008:** Ph.D. in Immunology and Cellular Biology at the Department of Biomedical Sciences and Human Oncology, University of Torino. Ph.D. thesis title: "*NPM-ALK oncogenic kinase controls morphology and migration in Anaplastic Large Cell Lymphoma cells overcoming TCR signaling deficit by GTPase activation*"

**1999-2004:** BS/MS Degree in Medical Biotechnology at University of Torino. Graduated summa cum laude. Thesis title: "*NPM-ALK MODIFIES CYTOSKELETON AND CELLULAR SHAPE BY THE ACTIVATION OF RAC1, CDC42 AND p130CAS*".

### Current position

**July 2024-present:** Full Professor, Department of Molecular Biotechnology and Health Sciences, University of Torino

### Scientific training

**December 2021-June 2024:** Associate Professor, Department of Molecular Biotechnology and Health Sciences, University of Torino

**December 2019-December 2021:** Assistant Professor, Department of Molecular Biotechnology and Health Sciences, University of Torino

**April 2016-December 2019:** Senior Scientist, Dr Jänne Laboratory Medical Oncology Department, Dana Farber Cancer Institute, Boston, USA

**November 2009 – March 2016:** Postdoc, Dr Barbacid Laboratory, Experimental Oncology Department, CNIO, Madrid, Spain

**December 2008 - November 2009:** Post Doctoral Fellow in Prof R. Chiarle laboratory, CeRMS (Center of Research in Experimental Medicine), University of Torino, Italy

**2004-2008:** PhD training in Prof R. Chiarle laboratory, CeRMS (Center of Research in Experimental Medicine), University of Torino, Italy

### Language skills

**Italian:** native

**English:** fluent, spoken and written

**Spanish:** fluent, spoken and written

### Publications

>50 manuscripts published in peer-reviewed journals since 2005 (2404 citations, h-index: 32, cumulative IF >500), being **first or corresponding author** in 14 and 9 papers, respectively (highlighted).

- 1) **Ambrogio C**, Voena C, Manazza AD, Piva R, Riera L, Barberis L, Costa C, Tarone G, Defilippi P, Hirsch E, Erba EB, Mohammed S, Jensen ON, Palestro G, Inghirami G, Chiarle R. p130Cas mediates the transforming properties of the anaplastic lymphoma kinase. *Blood*. 2005 Dec 1. IF: 22.11
- 2) Piva R, Chiarle R, Manazza AD, Taulli R, Simmons W, **Ambrogio C**, D'Escamard V, Pellegrino E, Ponzetto C, Palestro G, Inghirami G. Ablation of oncogenic ALK is a viable therapeutic approach for anaplastic large-cell lymphomas. *Blood*. 2006 Jan 15. IF: 22.11
- 3) Voena C, Conte C, **Ambrogio C**, Boeri Erba E, Boccalatte F, Mohammed S, Jensen ON, Palestro G, Inghirami G, Chiarle R. The tyrosine phosphatase Shp2 interacts with NPM-ALK and regulates anaplastic lymphoma cell growth and migration. *Cancer Res*. 2007 May 1. IF: 9.13
- 4) Berto G, Camera P, Fusco C, Imarisio S, **Ambrogio C**, Chiarle R, Silengo L, Di Cunto F. The Down syndrome critical region protein TTC3 inhibits neuronal differentiation via RhoA and Citron kinase. *J Cell Sci*. 2007 Jun 1. IF: 4.401
- 5) Costa C, Barberis L, **Ambrogio C**, Manazza AD, Patrucco E, Azzolino O, Nielssen P, Circolo E, Altruda F, Prestwich G, Chiarle R, Wymann M, Ridley A, Hirsch E. Constitutive elevation of phosphoinositide 3-Kinase  $\gamma$  activity in mice does not increase tumor susceptibility but reveals a negative feedback loop regulating Rac during leukocyte chemotaxis. *PNAS* 2007 Sept 4. IF: 9.661
- 6) Chiarle R, Voena C, **Ambrogio C**, Piva R, Inghirami G. The anaplastic lymphoma kinase in the pathogenesis of cancer. *Nat Rev Cancer*. 2008 Jan. IF: 42.784
- 7) Chiarle R, Martinengo C, Mastini C, **Ambrogio C**, D'Escamard V, Forni G, Inghirami G. Anaplastic Lymphoma Kinase is an effective oncoantigen for lymphoma vaccination. *Nat Med* 2008 Jun. IF: 32.621
- 8) Crosetto N, Bienko M, Hibbert RG, Perica T, **Ambrogio C**, Kensche T, Hofmann K, Sixma TK, Dikic I. Human WRNIP1 is localized in replication factories in a UBZ-dependent manner. *J Biol Chem*. 2008 Dec 12. IF: 4.125
- 9) **Ambrogio C**, Voena C, Manazza AD, Martinengo C, Costa C, Kirchhausen T, Hirsch E, Inghirami G and Chiarle R. Anaplastic Lymphoma Kinase controls cell shape and growth of Anaplastic Large Cell Lymphoma through Cdc42. *Cancer Res* 2008 Nov 1. IF: 9.13
- 10) Barberis L, Pasquali C, Bertschy-Meier D, Cuccurullo A, Costa C, **Ambrogio C**, Vilbois F, Chiarle R, Wymann M, Altruda F, Rommel C, Hirsch E. Leukocyte transmigration is modulated by chemokine-mediated, PI3K  $\gamma$ -dependent phosphorylation of vimentin. *European Journal of Immunology* 2009 Apr. IF: 4.248
- 11) Gonzalo P, Guadamillas MC, Hernández-Riquer MV, Pollán A, Grande-García A, Bartolomé RA, Vasanji A, **Ambrogio C**, Chiarle R, Teixidó J, Risteli J, Apte SS, del Pozo MS, and Arroyo AG. Membrane type 1-matrix metalloproteinase contributes to macrophage fusion through the regulation of the Rac1 signaling pathway. *Dev Cell*. 2010 Jan 19. IF: 9.616
- 12) **Ambrogio C**, Martinengo C, Voena C, Tondat F, Francia di Celle P, Inghirami G and Chiarle R. NPM-ALK oncogenic tyrosine kinase controls T cell identity by transcriptional and epigenetic silencing in lymphoma cells. *Cancer Res* 2009 Nov 15. IF: 9.13
- 13) Riera L, Lasorsa E, **Ambrogio C**, Surrenti N, Voena C, Chiarle R. Involvement of Grb2 adaptor protein in nucleophosmin-anaplastic lymphoma kinase (NPM-ALK)-mediated signaling and anaplastic large cell lymphoma growth. *J Biol Chem*. 2010 Aug 20. IF: 4.125
- 14) Boselli D, Ragimbeau J, Orlando L, Cappello P, Capello M, **Ambrogio C**, Chiarle R, Marsili G, Battistini A, Giovarelli M, Pellegrini S, Novelli F. Expression of IFN $\gamma$ R2 mutated in a dileucine internalization motif reinstates IFN $\gamma$  signaling and apoptosis in human T lymphocytes. *Immunol Lett*. 2010 Nov 30. IF: 1.85
- 15) **Di Paolo D\***, **Ambrogio C\***, Pastorino F, Brignole C, Martinengo C, Carosio R, Loi M, Pagnan G, Emionite L, Cilli M, Ribatti D, Allen TM, Chiarle R, Ponzoni M, Perri P. Selective Therapeutic Targeting of the Anaplastic Lymphoma

Kinase With Liposomal siRNA Induces Apoptosis and Inhibits Angiogenesis in Neuroblastoma. *Mol Ther.* 2011 Aug 9. \*equally contributed. IF: 6.938

- 16) Bosio Y, Berto G, Camera P, Bianchi F, **Ambrogio C**, Claus P, Di Cunto F. PPP4R2 regulates neuronal cell differentiation and survival, functionally cooperating with SMN. *Eur J Cell Biol.* 2012 Aug. IF: 5.22
- 17) Voena C, Di Giacomo F, Panizza E, D'Amico L, Boccalatte FE, Pellegrino E, Todaro M, Recupero D, Tabbò F, **Ambrogio C**, Martinengo C, Bonello L, Pulito R, Hamm J, Chiarle R, Cheng M, Ruggeri B, Medico E, Inghirami G. The EGFR family members sustain the neoplastic phenotype of ALK+ lung adenocarcinoma via EGR1. *Oncogenesis.* 2013 Apr 8. IF: 4.722
- 18) Piazza R, Magistroni V, Mogavero A, Andreoni F, **Ambrogio C**, Chiarle R, Mologni L, Bachmann PS, Lock RB, Collini P, Pelosi G, Gambacorti-Passerini C. Epigenetic silencing of the proapoptotic gene BIM in anaplastic large cell lymphoma through an MeCP2/SIN3a deacetylating complex. *Neoplasia.* 2013 May. IF: 5.006
- 19) Martinengo C, Poggio T, Menotti M, Scalzo MS, Mastini C, **Ambrogio C**, Pellegrino E, Riera L, Piva R, Ribatti D, Pastorino F, Perri P, Ponzoni M, Wang Q, Voena C, Chiarle R. ALK-Dependent Control of Hypoxia-Inducible Factors Mediates Tumor Growth and Metastasis. *Cancer Res.* 2014 Sep 5. IF: 9.13
- 20) **Ambrogio C**, Carmona FJ, Vidal A, Falcone M, Nieto P, Romero OA, Puertas S, Vizoso M, Nadal E, Poggio T, Sánchez-Céspedes M, Esteller M, Mulero F, Voena C, Chiarle R, Barbacid M, Santamaría D, Villanueva A. Modeling Lung Cancer Evolution and Preclinical Response by Orthotopic Mouse Allografts. *Cancer Res.* 2014 Sep 12. IF: 9.13
- 21) **Ambrogio C**, Stern P, Scuoppo C, Kranz H, Barbacid M, Santamaría D. Lentiviral-based approach for the validation of cancer therapeutic targets in vivo. *Biotechniques.* 2014 Oct 1. IF: 2.098
- 22) Blasco RB, Karaca E, **Ambrogio C**, Cheong TC, Karayol E, Minero VG, Voena C, Chiarle R. Simple and rapid in vivo generation of chromosomal rearrangements using CRISPR/Cas9 technology. *Cell Rep.* 2014 Nov 20. IF: 8.282
- 23) Lopez-Contreras AJ, Specks J, Barlow JH, **Ambrogio C**, Desler C, Vikingsson S, Rodrigo-Perez S, Green H, Rasmussen LJ, Murga M, Nussenzweig A, Fernandez-Capetillo O. Increased Rrm2 gene dosage reduces fragile site breakage and prolongs survival of ATR mutant mice. *Genes Dev.* 2015 Apr 1. IF: 9.413
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- 26) **Ambrogio C**, Cámara JA, Nieto P, Santamaría D, Mulero F. Analysis of Murine Lung Tumors by Micro PET-CT Imaging. *Bio-protocol*, 2015 December.
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- 29) **Ambrogio C\***, Gómez-López G, Falcone M, Villanueva A, Crosetto N, Blasco R, Sánchez-Céspedes M, Ren X, Wang Z, Ding K, Serrano M, Hidalgo M, Santamaría D\*, Barbacid M\*. Combined inhibition of Ddr1 and Notch signaling as an effective therapeutic strategy for K-Ras-driven/p53-null lung adenocarcinomas. *Nat Med.* 2016 Feb 8. \*Co-corresponding author. IF: 32.621  
(Referred by Research Watch in Cancer Discovery: Dual Therapy with DDR1 and Notch Inhibitors Kills KRAS-Mutant Lung Tumors. *Cancer Discov.* 2016 Feb 18.)
- 30) **Ambrogio C\***, Nadal E, Villanueva A, Gómez-López G, Cash TP, Barbacid M, Santamaría D. KRAS-driven lung adenocarcinoma: combined DDR1/Notch inhibition as an effective therapy. *ESMO Open.* 2016 Sept 1. \*Corresponding author.
- 31) **Ambrogio C\***, Barbacid M, Santamaría D\*. In vivo oncogenic conflict triggered by co-existing KRAS and EGFR activating mutations in lung adenocarcinoma. *Oncogene.* 2016 Oct 24. \*Co-corresponding author. IF: 6.854
- 32) **Ambrogio C**, Santamaria D. DDR1 and Notch: a multifaceted synergy. *Translational Cancer Research.* 2016 Dec. IF: 1.757.
- 33) Compagno M, Wang Q, Pighi C, Cheong TC, Meng FL, Poggio T, Yeap LS, Karaca E, Blasco RB, Langellotto F, **Ambrogio C**, Voena C, Wiestner A, Kasar SN, Brown JR, Sun J, Wu CJ, Gostissa M, Alt FW, Chiarle R.

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  - 35) Zeng M, Lu J, Li L, Feru F, Quan C, Gero TW, Ficarro SB, Xiong Y, **Ambrogio C**, Paranal RM, Catalano M, Shao J, Wong KK, Marto JA, Fischer ES, Jänne PA, Scott DA, Westover KD, Gray NS. Potent and Selective Covalent Quinazoline Inhibitors of KRAS G12C. *Cell Chem Biol*. 2017 Jul. IF: 5.592
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  - 37) **Ambrogio C\***, Köhler J, Zhou ZW, Wang H, Paranal R, Li J, Capelletti M, Caffarra C, Li S, Lv Q, Gondi S, Hunter JC, Lu J, Chiarle R, Santamaría D, Westover KD, Jänne PA\*. KRAS dimerization impacts MEK inhibitor sensitivity and oncogenic activity of mutant KRAS. *Cell*. 2018 Jan 4. \***Co-corresponding author**. IF: 31.398
  - 38) **Ambrogio C**, Darbo E, Lee SW, Santamaria D. A putative role for Discoidin Domain Receptor 1 in cancer chemoresistance. *Cell Adhesion & Migration*, 2018 March 5. IF: 3.566
  - 39) Abravanel DL, Nishino M, Sholl LM, **Ambrogio C**, Awad MM. An acquired NRAS Q61K mutation in BRAF V600E-mutant lung adenocarcinoma resistant to dabrafenib plus trametinib. *J Thorac Oncol*. 2018 Apr 6. IF: 10.336
  - 40) Li S, Liu S, Deng J, Akbay EA, Hai J, **Ambrogio C**, Zhang L, Zhou F, Jenkins RW, Adeegbe DO, Gao P, Wang X, Paweletz CP, Herter-Sprie GS, Chen T, Gutierrez Quiceno L, Zhang Y, Merlino AA, Quinn MM, Zeng Y, Yu X, Liu Y, Fan L, Aguirre AJ, Barbie DA, Yi X, Wong KK. Assessing Therapeutic Efficacy of MEK Inhibition in a KRAS G12C-Driven Mouse Model of Lung Cancer. *Clin Cancer Res*. 2018 Jun 26. IF: 10.199
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  - 44) Wang H, Lv Q, Xu Y, Cai Z, Zheng J, Chen X, Dai Y, Jänne PA, **Ambrogio C\*** and Köhler J\*. An integrative pharmacogenomics analysis identifies CK2 alpha as a promising therapeutic target in KRAS(G12C) mutant lung cancer. *EBioMedicine*. 2019 Nov;49:106-117. doi: 10.1016/j.ebiom.2019.10.012. Epub 2019 Oct 23. \***Co-last author**. IF: 6.68
  - 45) **Zhou Z\***, **Ambrogio C\***, Bera AK, Li Q, Li X, Li L, Son J, Gondi S, Li J, Campbell E, Jin H, Okoro JJ, Xu C, Jänne PA, Westover KD. KRASQ61H signals through MAPK in a RAF dimer-dependent manner in non-small cell lung cancer. *Cancer Res*. 2020 Jun 30. \***equally contributed**. IF: 9.13
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  - 47) Marmarelis ME, Chiarle, **Ambrogio C\*** and Aggarwal C\*. A LIBRETTO to orchestrate targeted therapy. *Nature Cancer*, 2020 Nov 17. \***Co-last author**.
  - 48) Nokin MJ, **Ambrogio C**, Nadal E, Santamaria D. Targeting Infrequent Driver Alterations in Non-Small Cell Lung Cancer. *Trends in Cancer*, 2020 Dec 9. IF: 8.88.
  - 49) Kramer-Drauberg M and **Ambrogio C**. Discoveries in the redox regulation of KRAS. *The International Journal of Biochemistry & Cell Biology*, 2020 Dec 10. IF: 3.673.
  - 50) Köhler J, Zhao Y, Li J, Gokhale PC, Tiv HL, Knott AR, Wilkens MK, Soroko KM, Lin M, **Ambrogio C**, Musteanu M, Ogino A, Choi J, Bahcall M, Bertram AA, Chambers ES, Paweletz CP, Bhagwat SV, Manro JR, Tiu RV, Janne PA. ERK inhibitor LY3214996-based treatment strategies for RAS-driven lung cancer. *Mol Cancer Ther*. 2021 Feb 3. IF: 5.040.
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- 67) Bergaggio E, Tai WT, Aroldi A, Mecca C, Landoni E, Nüesch M, Mota I, Metovic J, Molinaro L, Ma L, Alvarado D,

- Ambrogio C**, Voena C, Blasco RB, Li T, Klein D, Irvine DJ, Papotti M, Savoldo B, Dotti G, Chiarle R. ALK inhibitors increase ALK expression and sensitize neuroblastoma cells to ALK.CAR-T cells. *Cancer Cell*, 2023 Dec 11;41(12):2100-2116.e10. doi: 10.1016/j.ccell.2023.11.004. IF: 50.3
- 68) Puliga E, De Bellis C, Vietti Michelina S, Capeloa T, Migliore C, Orrù C, Baiocchi GL, De Manzoni G, Pietrantonio F, Reddavid R, Fumagalli Romario U, **Ambrogio C**, Corso S, Giordano S. Biological and targeting differences between the rare KRAS A146T and canonical KRAS mutants in gastric cancer models. *Gastric Cancer*, 2024 Jan 23. doi: 10.1007/s10120-024-01468-8. Online ahead of print. IF: 7.4.
- 69) Scardaci R, Berlinska E, Scaparone P, Vietti Michelina S, Garbo E, Novello S, Santamaria D, **Ambrogio C**. Novel RAF-directed approaches to overcome current clinical limits and block the RAS/RAF node. *Mol Oncol*. 2024 Feb 16. doi: 10.1002/1878-0261.13605. Online ahead of print. IF: 7.5.
- 70) Alcolea MP, Alonso-Curbelo D, **Ambrogio C**, Bullman S, Correia AL, Ernst A, Halbrook CJ, Kelly GL, Lund AW, Quail DF, Ruscetti M, Shema E, Stromnes IM, Tam WL. Cancer Hallmarks: Piecing the Puzzle Together. *Cancer Discov*. 2024 Apr 4;14(4):674-682. doi: 10.1158/2159-8290.CD-24-0097. IF: 39.3.
- 71) Holderfield M, Lee BJ, Jiang J, Tomlinson A, Seamon KJ, Mira A, Patrucco E, Goodhart G, Dilly J, Gindin Y, Dinglasan N, Wang Y, Lai LP, Cai S, Jiang L, Nasholm N, Shifrin N, Blaj C, Shah H, Evans JW, Montazer N, Lai O, Shi J, Ahler E, Quintana E, Chang S, Salvador A, Marquez A, Cregg J, Liu Y, Milin A, Chen A, Ziv TB, Parsons D, Knox JE, Klomp JE, Roth J, Rees M, Ronan M, Cuevas-Navarro A, Hu F, Lito P, Santamaria D, Aguirre AJ, Waters AM, Der CJ, **Ambrogio C**, Wang Z, Gill AL, Koltun ES, Smith JAM, Wildes D, Singh M. Concurrent inhibition of oncogenic and wild-type RAS-GTP for cancer therapy. *Nature*. 2024 Apr 8. doi: 10.1038/s41586-024-07205-6. Online ahead of print. IF: 64.8.
- 72) Nokin MJ, Darbo E, Richard E, San José S, de Hita S, Prouzet-Mauleon V, Turcq B, Gerardelli L, Crake R, Velasco V, Koopmansch B, Lambert F, Xue JY, Sang B, Horne J, Ziemons E, Villanueva A, Blomme A, Herfs M, Cataldo D, Calvayrac O, Porporato P, Nadal E, Lito P, Jänne PA, Ricciuti B, Awad MM, **Ambrogio C\***, **Santamaría D\***. In vivo vulnerabilities to GPX4 and HDAC inhibitors in drug-persistent versus drug-resistant BRAFV600E lung adenocarcinoma. **\*Co-last author**, *Cell Reports Medicine*. 2024 Aug 5. doi: 10.1016/j.xcrm.2024.101663. Online ahead of print. IF: 11.7.

### Selected publications

- **Ambrogio C\***, Köhler J, Zhou ZW, Wang H, Paranal R, Li J, Capelletti M, Caffarra C, Li S, Lv Q, Gondi S, Hunter JC, Lu J, Chiarle R, Santamaría D, Westover KD, Jänne PA\*. KRAS dimerization impacts MEK inhibitor sensitivity and oncogenic activity of mutant KRAS. *Cell*. 2018 Jan 4. **\*Co-corresponding author**. PMID: 29336889.

This is the first paper demonstrating that WT KRAS hampers the activity of mutant KRAS by a dimerization-dependent mechanism.

- **Ambrogio C\***, Gómez-López G, Falcone M, Villanueva A, Crosetto N, Blasco R, Sánchez-Céspedes M, Ren X, Wang Z, Ding K, Serrano M, Hidalgo M, Santamaría D\*, Barbacid M\*. Combined inhibition of Ddr1 and Notch signaling as an effective therapeutic strategy for K-Ras-driven/p53-null lung adenocarcinomas. *Nat Med*. 2016 Feb 8. **\*Co-corresponding author**. PMID: 26855149.

We demonstrated here that a gene expression signature corresponding to malignant K-Ras-driven tumors is acquired much earlier than what is conventionally accepted, even at the stage of early lesions of few hundred cells.

- Nieto P, **Ambrogio C**, de Esteban L, Gómez-López G, Blasco MT, Yao Z, Marais R, Rosen N, Chiarle R, Pisano DG, Barbacid M, Santamaría D. A B-Raf kinase inactive mutant induces lung adenocarcinoma. *Nature*. 2017 Aug 2. PMID: 28783725.

This paper describes the exciting discovery of BRAF inactivating mutations as new driven oncogenes in lung adenocarcinoma.

- Ricciuti B, Son J, Okoro JJ, Wang X, Paranal R, Wang H, Eum Y, Lin M, Haikala HM, Li J, Xu Y, Alessi JV, Chhoeu C, Mira A, Patrucco E, Redig AJ, Köhler J, Richard E, Nokin MJ, Santamaria D, Gokhale PC, Awad MM, Jänne PA, **Ambrogio C**. Comparative analysis and isoform-specific therapeutic vulnerabilities of KRAS mutations in non-small cell lung cancer. *Clinical Cancer Research*, 2022 January.

This study demonstrated that KRAS mutations are highly heterogenous in terms of biological outcome and genomic profiling, and that this heterogeneity can be exploited to unveil novel potentially actionable vulnerabilities for KRAS mutant NSCLC.

### Meetings and Communications

- 1) "XII Meeting of European Association for Haematopathology" in Salonicco-Greece (2004). *Oral Presentation*.

- 2) 2005 ABCD Meeting (Cellular Biology and Differentiation Association), Certosa di Pontignano, (18-19 March 2005). *Oral presentation.*
- 3) "XIII Meeting of European Association for Haematopathology" in Vienna-Austria (2006). *Oral presentation.*
- 4) 2007 ABCD Meeting (Cellular Biology and Differentiation Association), Roma (30-31 March 2007). *Oral presentation.*
- 5) Third SIBBM Meeting (Italian Society of Biophysics and Molecular Biology), Torino (25-27 June 2007). *Oral presentation.*
- 6) CNIO Cancer Conference: "Molecular mechanisms in lymphoid neoplasm", Madrid (February 2007). *Oral presentation.*
- 7) Mechanisms and Models of Cancer, Salk Institute, La Jolla, CA, USA, (August 12-16, 2009). *Oral presentation.*
- 8) EACR-22 meeting, "From Basic Research to Personalized Cancer Treatment", Barcelona, Spain, (July 7-10, 2012). *Oral presentation.*
- 9) NATURE–CNIO CANCER SYMPOSIUM: "Frontiers in Tumor Heterogeneity and Plasticity", Madrid, Spain, (October 28-30, 2013). *Oral presentation.*
- 10) EACR-23 meeting, "From Basic Research to Personalized Cancer Treatment", Munich, Germany, (July 5-8, 2014). *Poster presentation (Winner of the Best Poster presentation award.)*
- 11) CNIO-Frontiers Meeting: "NEW TRENDS IN ANTICANCER DRUG DEVELOPMENT", Madrid, Spain, (March 22-25, 2015). *Oral presentation.*
- 12) EACR-AACR-SIC 2015 Conference, "From cancer biology to the clinic", Firenze, Italy, (June 20-23, 2015). *Oral presentation.*
- 13) ESMO 2016 Personalized Medicine Symposium, "Signaling Pathways in Cancer", Barcelona, Spain, (March 4-5, 2016). *Invited speaker.*
- 14) Tongji University, Shanghai, School of Life Science and Technology Program, Shanghai, China, (September 12-13, 2016). *Invited speaker.*
- 15) ESMO 2017-EACR, Madrid, Spain (September 8-12, 2017). *Oral presentation.*
- 16) 2017 NCI RAS Initiative Symposium, Frederick, USA (December 6-8, 2017). *Oral presentation.*
- 17) 2018 AACR RAS Meeting, San Diego, USA (December 9-12, 2018). *Invited speaker.*
- 18) 2019 RAS Symposium "THE RAS SUPERFAMILY AND RELATED PATHWAYS IN HEALTH AND DISEASE", Santander, Spain (May 16-18, 2019). *Invited speaker.*
- 19) RAS Initiative, NIH, Frederick, (July 18, 2019). *Invited speaker.*
- 20) "Rising Stars seminar series", NIH Bethesda, (July 19, 2019). *Invited speaker.*
- 21) HansonWade RAS-Targeted Drug Discovery Summit, Boston, (September 16-19, 2019). *Invited speaker.*
- 22) University of Copenhagen, (November 7, 2019). *Invited speaker.*
- 23) Sixth AACR-IASLC International Joint Conference: Lung Cancer Translational Science from the Bench to the Clinic, San Diego, USA (January 11 - 14, 2020). *Invited speaker.*
- 24) University of Zurich, (February 12, 2020). *Invited speaker.*
- 25) HansonWade, 2<sup>nd</sup> RAS-Targeted Drug Discovery Summit (Virtual), Boston, (September 14-16, 2020). *Invited speaker.*
- 26) 9<sup>th</sup> Annual PREDICT Tumor Models Meeting (Virtual), London, December 1-3, 2020. *Invited speaker.*
- 27) Precision Medicine for RAS pathway mutations in cancer (Virtual), Manchester, (December 8-9, 2020). *Keynote lecture.*
- 28) IASLC 2020 World Conference on Lung Cancer (Virtual), Singapore, (January 28-31, 2021), *Invited speaker.*
- 29) INSIDE - The dark side of the cell (Virtual), Vienna, (February 11-12, 2021), *Invited speaker.*
- 30) UNITO-POLITO CONFERENCE SERIES IN CANCER, Nanoscience in Cancer Immunotherapy, (March 9-11, 2021). Virtual Event, *Invited speaker.*
- 31) UCSF, San Francisco, "10 years in the RAS-MAPK field, from genetic mouse models to translational oncology", (April 27, 2021), Virtual Event, *Invited speaker.*
- 32) Non-Small Cell Lung Cancer Drug Development Summit, (July 13-15, 2021), Virtual Event, *Invited Speaker.*
- 33) ESMO 2021-EACR, Paris, France (September 16-19, 2021). *Invited Speaker.*
- 34) Beatson Institute, Glasgow, UK, (September 9, 2021). *Invited speaker.*
- 35) University of Heidelberg-DKFZ, (September 21, 2021). *Invited speaker.*
- 36) ESMO MAP Symposium 2021 (October 7-9, 2021). *Invited Speaker.*
- 37) University of Salamanca, (November 11, 2021). *Invited speaker.*
- 38) 3<sup>rd</sup> ASEICA Educational Symposium, (November 23-25, 2021), virtual congress. *Invited speaker (closing lecture).*
- 39) Nature Seminar Portfolio: Targeting KRAS in cancer, 2<sup>nd</sup> of February 2022. *Invited speaker.*
- 40) CIC (Cancer Research Center), Seville, Spain (March 11, 2022). *Invited speaker.*

- 41) HansonWade, 4<sup>th</sup> RAS-Targeted Drug Discovery Summit, Boston, (September 26-28, 2022). *Invited speaker.*
- 42) The 81<sup>st</sup> Annual Meeting of the Japanese Cancer Association, Yokohama, (Sept 29- Oct 1, 2022). *Invited speaker.*
- 43) The 4<sup>th</sup> RAS Initiative Symposium, Frederick, MD (USA), October 17 - 19, 2022. *Invited speaker.*
- 44) EACR-Boehringer Ingelheim drugging and regulating the MAPK pathway programme, virtual event, 21-22 February 2023. *Invited speaker.*
- 45) VHIO (Vall D'Hebron Institute of Oncology), Barcelona, Spain (February 24, 2023). *Invited speaker.*
- 46) HiLife seminars, University of Helsinki, Helsinki, Finland (March 20, 2023). *Invited speaker.*
- 47) EACR-23 meeting, European Association for Cancer Research, Torino, Italy, (June 11-14, 2023). *Invited speaker and Board Member.*
- 48) Oncogene-addicted International Lung Cancer Summit, Ravenna (Italy), (June 16-17, 2023). *Invited speaker.*
- 49) Targeting RAS Symposium, Salamanca (Spain), (September 13-16, 2023). *Invited speaker.*
- 50) The 82<sup>nd</sup> Annual Meeting of the Japanese Cancer Association, Yokohama, (Sept 22- 24, 2023). *Invited speaker.*
- 51) HansonWade, 5<sup>th</sup> RAS-Targeted Drug Discovery Summit, Boston, (September 25-27, 2023). *Invited speaker.*
- 52) SDIR6 meeting, "Fom collaboration to Innovation in Cancer Research), Belgrade (Serbia), (October 2-3, 2023). *Invited speaker.*
- 53) Oncode Annual Conference Advancing Together: Technology and Cancer Biology, Amsterdam (The Netherlands), (November 2-4, 2023), *Invited speaker.*
- 54) 3<sup>rd</sup> INTERNATIONAL SUMMIT ON LUNG CANCER, Roma, Italy, (5-6 May 2024). *Invited speaker.*
- 55) EACR-24 meeting, European Association for Cancer Research, Rotterdam, The Netherlands, (June 9-12, 2024). *Invited speaker and Board Member.*
- 56) IASLC 2024 World Conference on Lung Cancer, San Diego, USA (7-10 September 2024), *Invited speaker (declined).*
- 57) HansonWade, 6<sup>th</sup> RAS-Targeted Drug Discovery Summit, Boston, (September 24-26, 2024). *Invited speaker.*
- 58) 46<sup>th</sup> Symposium on Cell Regulation, "Cancer Signaling and Metabolism", Mont Sainte Odile, France (October 9-11, 2024). *Invited speaker.*
- 59) IASLC 2024 Hot Topic in Basic & Translational Science: Tolerance & Resistance to Targeted Therapy in NSCLC, Washington, US (December 13-15, 2024). *Invited panelist.*

### **Professional Memberships**

**2014-present:** Ambassador, European Association for Cancer Research (EACR)

**2016-present:** Member, European Society of Medical Oncology (ESMO)

**2018-present:** Active Member, American Association for Cancer Research (AACR)

**2019-present:** Member, International Association for the Study of Lung Cancer (IASLC)

**2021-2023:** Committee Member for the Career Development & Fellowship Committee, International Association for the Study of Lung Cancer (IASLC)

**2019-present:** Member, Spanish Association Research Against Cancer (ASEICA)

**2020-present:** Member, Società Italiana di Biofisica e Biologia Molecolare (SIBBM)

**2021-present:** Member, ERCinItaly

### **Boards**

**2022-present:** Pezcoller Foundation, Scientific Standing Committee

**2022-present:** Lung Cancer Research Foundation (LCRF), Scientific Advisory Board

**2022-present:** European Association for Cancer Research (EACR), Board Member

**2021-present:** International Association for the Study of Lung Cancer (IASLC), Career Development & Fellowship Committee

### **Editorial Activities:**

*Ad hoc Reviewer:*

- Nature Medicine
- Nature Cancer
- Nature Communications
- Cancer Discovery
- Cancer Research
- Clinical Cancer Research

- PLoS Computational Biology
- Science Signaling
- Oncotarget
- Journal of Molecular Biology
- EBioMedicine (Lancet)
- Frontiers in Oncology
- Molecular Cancer Therapeutics
- Leukemia Research
- Journal of Cancer Research and Clinical Oncology
- Journal of Oncology

#### *Other Editorial Roles*

**2016- present:** Editorial Board, Bio-Protocol

**2017- present:** Editorial Board, Frontiers in Bioscience

**2020- 2024:** Guest Editor, Cancers

**2020-2024:** Associate Editor, Frontiers in Oncology

**2023-present:** Editorial Board, British Journal of Cancer

#### **Grant Review Activities:**

*5/2024-present: Grant Reviewer, Science Research Council (Sweden)*

*3/2024-present: Grant Reviewer, CRUK (Cancer Research UK)*

*2/2023-present: Grant Reviewer, AECC (Spanish Association for Cancer Research)*

*7/2022-present: Fellowship Reviewer, EACR (European Association for Cancer Research)*

*7/2022-present: Grant Reviewer, LCRF (Lung Cancer Research Foundation)*

*9/2021-present: Grant Reviewer, IASLC (International Association for the Study of Lung Cancer)*

*8/2020-present: Grant Reviewer, Swiss Cancer League*

*1/2020- present: Grant Reviewer, Medical Research Council, UK*

*9/2018- present: Grant Reviewer, National Science Centre, Poland*

*7/2018- present: Grant Reviewer, FWO Foundation, Flanders*

*2/2018- present: Grant Reviewer, The Wellcome trust DBT India Alliance*

#### **Awards**

**2021:** ILCF Young Investigator Award

**2020:** Award "Marcellina Gilli" for Entrepreneur Women in Italy

**2020:** Listed in the 2020 "40 under 40" by Fortune (Italy)

**2019:** Award "Premio Chianello" for Oncology Research

**2019:** Award "Fondazione Lorini" for under-40 young scientists in cancer research

**2018:** Scientific Merit Award from the Lung Cancer Research Foundation (LCRF)

**2014:** Award Com.It.Es (Organization of Italians abroad), category "University and Research".

**2014:** Best Poster presentation award EACR-23 meeting, "From Basic Research to Personalized Cancer Treatment", Munich, Germany, (July 5-8, 2014).

**2012:** Proffered Paper Award EACR-22, Barcelona, Spain, (July 7-10).

**2012:** AECC (Spanish Association Against Cancer) Postdoctoral Award, personally conferred by the Queen of Spain

**2009:** Award "Silvia Fiocco" for Lymphoma and Leukemia Research, Accademia dei Lincei-Roma, personally conferred by the Italian President Giorgio Napolitano

**2008:** Award "Fondazione Costa" for cancer research

**2007:** SIBBM Prize (Italian Society of Biophysics and Molecular Biology) (please see <http://www.sibbm.org/premio2007.php>)

#### **Projects and Funding**

**2024-2027:** WWCR (WorldWide Cander Research)

**2023-2028:** MIUR FARE (Italian Ministry of University and Research)

**2023-2024:** SRA (Scientific Research Agreement) Roche

**2022-2023:** Kaerton Foundation-Cancer INNOVA program

**2022-2027:** AIRC (Italian Association for Cancer Research)

**2021-2022:** SRA (Scientific Research Agreement) Verastem

**2021-2026:** ERC Consolidator Grant

**2021-2022:** ILCF Young Investigator Award  
**2021-2022:** SRA (Scientific Research Agreement) Revolution Medicines  
**2020-2023:** Harvard-Armenise Career Development Grant, funded budget to start an independent lab as PI in Italy  
**2020-2023:** “Ramon y Cajal” Excellence Grant, Ministry of Health and Innovation (Spain), ranked as first candidate with the highest score  
**2018-2020:** Principal Investigator, Lung Cancer Research Foundation (LCRF) grant  
**2017-2018:** Principal Investigator of the Wong Funds in Translational Oncology (DFCI, Boston)  
**2016-2018:** Stand Up To Cancer, Lung Cancer Dream Team.  
**2012-2017:** AECC (Spanish Association Against Cancer) Postdoctoral Fellowship (5 years).  
**2009-2011:** CNIO-Caja Navarra International Postdoctoral Program  
**2009-2012:** Principal Investigator of the **MFAG-2009** project entitled “The role of ALK in the pathogenesis of childhood neuroblastoma as a target for innovative therapies” (Ref.9479) funded by AIRC (Italian Association for Cancer Research)  
**2009:** One-year Postdoctoral Fellowship funded by Italian Ministry of Education and Research and University of Torino  
**2004-2008:** four-years PhD Fellowship funded by Italian Ministry of Education and Research