

## Curriculum vitae

### ENRICO BRACCO, PhD

#### Personal details

Born in: BRA (CN), 11-October-1968

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#### Education

- Secondary school Diploma, Istituto Tecnico Agrario Specializzato per la Viticoltura e l'Enologia, Umberto I, Alba, 1988 (from 1982 to 1988)
- Degree in Cell & Molecular Biology, University of Torino, 1994 (from 1989 to 1994)
- PhD in Cell Biology & Immunology, University of Torino and Max Planck Institute for Biochemistry, Martinsried, Munich, Germany, 1998, (from 1994 to 1998)

#### Professional experiences and current position

- From 01-08-1993 to 01-09-1993, summer student at the Department of Cell Biology of the Max Planck Institute for Biochemistry, Martinsried bei Munchen, Munchen, Germany. Director: Gunter Gerisch, Supervisor: Dr. Angelika Noegel.
- From 1994 to 1998, Ph.D. program in "Cell Biology and Immunology, University of Torino, Dept. Clinical and Biological Sciences. Research field: molecular mechanisms triggering and governing phagocytosis. Supervisor: Prof. Salvatore Bozzaro.
- From 01-08-1995 to 01-09-1997, PhD student at the Department of Cell Biology of the Max Planck Institute for Biochemistry, Martinsried bei Munchen, Munchen, Germany. Research field: molecular mechanisms driving and controlling the actin cytoskeleton reorganization during cell motility and phago- and endo-cytosis. Director: Gunter Gerisch, Supervisor: Dr. Angelika Noegel.
- From September 1998 to August 2001 Postdoctoral Fellowship at Ludwig Institute for Cancer Research, Uppsala Biomedical Center (BMC), Uppsala, Sweden. Director: Prof. Carl-Henrick Heldin, Supervisor/Principal Investigator: Lars Ronnstrand. Research field: Signal Transduction mediated by class III Receptor Tyrosine kinases (e.g. PDGFR and c-kit/SCFR).
- From November 2001 to December 2022 Assistant Professor of Cell Biology, University of Torino, Medical School, Dept. of Clinical and Biological Sciences and then at the Dept. of Oncology.
- From 05-2003 to 09-2003 Visiting Scientist at the Department of Biomedical Science, University of Malmoe and Malmoe Hospital, Malmoe, Sweden. Scientific collaboration with Prof. Lars Ronnstrand responsible for the Signal Transduction Unit
- Associate Professor from December 2022 to date

During my career, I acquired experience in combining basic and translational research by using either non-mammalian (e.g., yeast *S. cerevisiae*, social amoeba *D. discoideum*, and fly *D. melanogaster*) as well as mammalian cells to unravel the molecular mechanisms regulating different cellular processes such as cell motility, growth, proliferation, and drug resistance.

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

- Member of the "Associazione Biologia Cellulare e del Differenziamento"
- Member of "The American Society for Cell Biology"

#### Honors

- N.A.

**Teaching activity:**

- Degree Program in Nursing
- Degree Program in Medical Radiology, Imaging, and Radiotherapy Techniques
- Specialization School in Psychology (Clinical Psychology and Neuropsychology)

**Research main topics**

**Main projects as PI:**

- \*Ubiquitin Proteasome System (UPS)
- \* Signal transduction (kinases either tyrosine or serine/threonine, GPCRs)
- \* Directed Cell Motility driven by chemical (chemotaxis) and by gas (aerotaxis)
- \* Mechanobiology of 3D cellular aggregates in collaboration with INRIM and Dr.ssa Valentina Monica
- \* Non-linear microscopy, coupled to CARS, for in vivo label-free visualization of lipids and collagens either in single cells or 3D cellular aggregates

**Bibliometry (1997-present)** ([www.scopus.com](http://www.scopus.com))

h-index: 17

Citations: 1068

Documents: 50

<https://www.scopus.com/authid/detail.uri?authorId=6602003646>

***10 best publications***

**1:** Biondo M, Panuzzo C, Ali SM, Bozzaro S, Osella M, **Bracco E**, Pergolizzi B. The Dynamics of Aerotaxis in a Simple Eukaryotic Model. *Front Cell Dev Biol.* 2021 Nov 23 ;9:720623. doi: 10.3389/fcell.2021.720623. PMID: 34888305; PMCID: PMC8650612.

**2:** Ali MS, Panuzzo C, Calabrese C, Maglione A, Piazza R, Cilloni D, Saglio G, Pergolizzi B, **Bracco E**. The Giant HECT E3 Ubiquitin Ligase HERC1 Is Aberrantly Expressed in Myeloid Related Disorders and It Is a Novel BCR-ABL1 Binding Partner. *Cancers.* 2021 Jan 19;13(2):341. doi: 10.3390/cancers13020341. PMID: 33477751; PMCID: PMC7832311.

**3:** Pergolizzi B, Panuzzo C, Ali MS, Lo Iacono M, Levra Levron C, Ponzzone L, Prelli M, Cilloni D, Calautti E, Bozzaro S, **Bracco E**. Two conserved glycine residues in mammalian and Dictyostelium Rictor are required for mTORC2 activity and integrity. *J Cell Sci.* 2019 Nov 14;132(22): jcs236505. doi: 10.1242/jcs.236505. PMID: 31653780.

**4:** Kazi JU, Agarwal S, Sun J, **Bracco E**, Rönstrand L. Src-like-adaptor protein (SLAP) differentially regulates normal and oncogenic c-Kit signaling. *J Cell Sci.* 2014 Feb 1;127(Pt 3):653-62. doi: 10.1242/jcs.140590.

**5:** Kazi JU, Vaapil M, Agarwal S, **Bracco E**, Pählman S, Rönstrand L. The tyrosine kinase CSK associates with FLT3 and c-Kit receptors and regulates downstream signaling. *Cell Signal.* 2013 Sep;25(9):1852-60. doi: 10.1016/j.cellsig.2013.05.016. PMID: 23707526.

**6:** Messa E, Carturan S, Maffè C, Pautasso M, **Bracco E**, Roetto A, Messa F, Arruga F, Defilippi I, Rosso V, Zanone C, Rotolo A, Greco E, Pellegrino RM, Alberti D, Saglio G, Cilloni D. Deferasirox is a powerful NF-kappaB inhibitor in myelodysplastic cells and in leukemia cell lines acting independently from cell iron deprivation by chelation and reactive oxygen species scavenging. *Haematologica.* 2010 Aug;95(8):1308-16. doi: 10.3324/haematol.2009.016824.

PMID: 20534700; PMCID: PMC2913079.

7: Ceppi P, Papotti M, Monica V, Lo Iacono M, 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. *Mol Cancer Ther.* 2009 Nov;8(11):3066-74. doi: 10.1158/1535-7163.MCT-09-0151. PMID: 19861409.

8: Palumbo R, Gaetano C, Antonini A, Pompilio G, **Bracco E**, Rönstrand L, Heldin CH, Capogrossi MC. Different effects of high and low shear stress on platelet-derived growth factor isoform release by endothelial cells: consequences for smooth muscle cell migration. *Arterioscler Thromb Vasc Biol.* 2002 Mar 1;22(3):405-11. doi: 10.1161/hq0302.104528. PMID: 11884282.

9: Ponte E, **Bracco E**, Faix J, Bozzaro S. Detection of subtle phenotypes: the case of the cell adhesion molecule csA in *Dictyostelium*. *Proc Natl Acad Sci U S A.* 1998 Aug 4;95(16):9360-5. doi: 10.1073/pnas.95.16.9360. PMID: 9689085; PMCID: PMC21343.

10: Peracino B, Borleis J, Jin T, Westphal M, Schwartz JM, Wu L, **Bracco E**, Gerisch G, Devreotes P, Bozzaro S. G protein beta subunit-null mutants are impaired in phagocytosis and chemotaxis due to inappropriate regulation of the actin cytoskeleton. *J Cell Biol.* 1998 Jun 29;141(7):1529-37. doi: 10.1083/jcb.141.7.1529. PMID: 9647646; PMCID: PMC2133009.

#### **15 more relevant publications in the last 5 yrs (2018-2022)**

- 1) Peracino B, Monica V, Primo L, **Bracco E**, Bozzaro S. Iron metabolism in the social amoeba *Dictyostelium discoideum*: A role for ferric chelate reductases. *Eur J Cell Biol.* 2022 Jun-Aug;101(3):151230. doi: 10.1016/j.ejcb.2022.151230. PMID: 35550931.
- 2) Mortati L., Pergolizzi B., Panuzzo C., **Bracco E**. Present and Future Opportunities in Imaging the Ubiquitin System (Ub-System). *Biophysica* 2022, 2(3), 174-183.
- 3) Ali MS, Magnati S, Panuzzo C, Cilloni D, Saglio G, Pergolizzi B, **Bracco E**. The Downregulation of Both Giant HERCs, HERC1 and HERC2, Is an Unambiguous Feature of Chronic Myeloid Leukemia, and HERC1 Levels Are Associated with Leukemic Cell Differentiation. *J Clin Med.* 2022 Jan 10;11(2):324. doi: 10.3390/jcm11020324. PMID: 35054018; PMCID: PMC8778248.
- 4) Biondo M, Panuzzo C, Ali SM, Bozzaro S, Osella M, **Bracco E**, Pergolizzi B. The Dynamics of Aerotaxis in a Simple Eukaryotic Model. *Front Cell Dev Biol.* 2021 Nov 23; 9:720623. doi: 10.3389/fcell.2021.720623. PMID: 34888305; PMCID: PMC8650612.
- 5) Ali MS, Panuzzo C, Calabrese C, Maglione A, Piazza R, Cilloni D, Saglio G, Pergolizzi B, **Bracco E**. The Giant HECT E3 Ubiquitin Ligase HERC1 Is Aberrantly Expressed in Myeloid Related Disorders and It Is a Novel BCR-ABL1 Binding Partner. *Cancers.* 2021 Jan 19;13(2):341. doi: 10.3390/cancers13020341. PMID: 33477751; PMCID: PMC7832311.
- 6) **Bracco E**,., Shahzad Ali, M., Magnati, S., and Saglio, G. (2021). “The Paradigm of Targeting an Oncogenic Tyrosine Kinase: Lesson from BCR-ABL,” in *Advances in Precision Medicine Oncology*. Editors H. Arnouk, and B. A. R. Hassan. doi:10.5772/intechopen.97528
- 7) Lo Iacono M, Signorino E, Petiti J, Pradotto M, Calabrese C, Panuzzo C, Caciolli F, Pergolizzi B, De Gobbi M, Rege-Cambrin G, Fava C, Giachino C, **Bracco E**, Saglio G, Frassoni F, Cilloni D. Genetic Screening for Potential New Targets in Chronic Myeloid Leukemia Based on *Drosophila* Transgenic for Human BCR-ABL1. *Cancers* (2021) Jan 14;13(2):293. doi: 10.3390/cancers13020293.
- 8) Kamimura Y.; Pergolizzi B.; **Bracco E**. “Cyclic AMP receptors of *Dictyostelium*” *Encyclopedia of Biological Chemistry: Third Edition* (2021) vol. 6, pp. 503-508
- 9) Calabrese C, Panuzzo C, Stanga S, Andreani G, Ravera S, Maglione A, Pironi L, Petiti J, Shahzad Ali MS, Scaravaglio P, Napoli F, Fava C, De Gobbi M, Frassoni F, Saglio G, **Bracco E**, Pergolizzi B, Cilloni D. “Deferasirox-Dependent Iron Chelation Enhances Mitochondria Dysfunction and restores

p53 signaling by stabilization of p53 family members in leukemic cells” *Int J Mol Sci.* 2020 Oct 16;21(20):7674. doi: 10.3390/ijms21207674.

- 10) Panuzzo C, Signorino E, Calabrese C, Ali MS, Petiti J, **Bracco E**, Cilloni D. “Landscape of tumors suppressor mutations in acute myeloid leukemia” *J Clin Med.* 2020 Mar 16;9(3):802. doi: 10.3390/jcm9030802.
- 11) Pergolizzi B, Bozzaro S, **Bracco E**. “Dictyostelium as model for studying ubiquitination and deubiquitination” *Int J Dev Biol.* 2019;63(8-9-10):529-539. doi: 10.1387/ijdb.190260eb. PMID: 31840790.
- 12) Pergolizzi B, Panuzzo C, Ali MS, Lo Iacono M, Levra Levron C, Ponzzone L, Prelli M, Cilloni D, Calautti E, Bozzaro S, **Bracco E**. Two conserved glycine residues in mammalian and Dictyostelium Rictor are required for mTORC2 activity and integrity. *J Cell Sci.* 2019 Nov 14;132(22): jcs236505. doi: 10.1242/jcs.236505. PMID: 31653780.
- 13) Bernardoni R, Giordani G, Signorino E, Monticelli S, Messa F, Pradotto M, Rosso V, **Bracco E**, Giangrande A, Perini G, Saglio G, Cilloni D. A new BCR-ABL1 Drosophila model as a powerful tool to elucidate the pathogenesis and progression of chronic myeloid leukemia. *Haematologica.* 2019 Apr;104(4):717-728. doi: 10.3324/haematol.2018.198267. Epub 2018 Nov 8. PMID: 30409797; PMCID: PMC6442973.
- 14) Rosso V, Panuzzo C, Petiti J, Carturan S, Dragani M, Andreani G, Fava C, Saglio G, **Bracco E**, Cilloni D. Reduced Expression of Sprouty1 Contributes to the Aberrant Proliferation and Impaired Apoptosis of Acute Myeloid Leukemia Cells. *J Clin Med.* 2019 Jul 4;8(7):972. doi: 10.3390/jcm8070972.
- 15) Buracco S, Peracino B, Andreini C, **Bracco E**, Bozzaro S. Differential Effects of Iron, Zinc, and Copper on Dictyostelium discoideum Cell Growth and Resistance to Legionella pneumophila. *Front Cell Infect Microbiol.* 2018 Jan 11; 7:536. doi: 10.3389/fcimb.2017.00536. PMID: 29379774; PMCID: PMC5770829.