Elisabetta ROVIDA

EDUCATION

2001, March 3rd, PhD in Experimental Pathology, University of Florence, Italy.
1995, April 26th, Degree in Biological Sciences, University of Florence, Italy, *cum laude*.

PROFESSIONAL EXPERIENCES

2011-2019 Assistant Professor at the Department of Experimental and Clinical Biomedical Sciences, University of Florence.

2001-2010 Post-doctoral Fellow at the Department of Experimental Pathology and Oncology, University of Florence.

2000 Visiting Scientist at the Institute of Microbiology end Genetics, University of Wien, Austria.

SCIENTIFIC INTERESTS

E.R. has been involved in signal transduction studies starting with her experimental thesis in 1993. During the Ph.D. program, E.R. studied the role of protein tyrosine phosphorylation in different biological processes such as survival, proliferation, adhesion and motility, in normal or neoplastic cells. E.R. then joined the Laboratory of Prof. M. Baccarini (University of Wien), to investigate on the role of different Mitogen-Activated Protein Kinases (MAPK) in the proliferation of macrophages. During the Post-doc, E.R. carried out a number of studies on the role of protein tyrosine phosphorylation and MAPK in normal and neoplastic cells. Therefore, E.R. has matured a twenty-year experience in signal transduction, MAPK in particular, in cancer cells. Besides being interested in signal transduction, E.R. has also been involved in epigenetic studies as well as in the regulation of cell survival, proliferation and stemness which are biological processes important for tumor growth and development. Main scientific achievements deal with the elucidation of mechanisms of signaling by the Colony-Stimulating Factor 1 Receptor as well as the role of Mitogen-Activated Protein Kinases, ERK5 in particular, in normal and neoplastic cells. She has published more than 40 peer reviewed articles and dozens of meeting abstracts on the molecular basis of diseases, cancer in particular. She supervised the thesis work of several students of Biological Sciences, Medical Biotechnologies, as well as the PhD program in Experimental and Clinical Oncology. E.R. is also in charge of teaching General Pathology at the School of Medicine of Florence University.

PAPERS PUBLISHED IN THE LAST FIVE YEARS IN PEER-REVIEWED JOURNALS.

indexed in Scopus/Isi with Impact Factor (citation score from Google Scholar; * co-/corresponding author, § co-first author).

45. Cheloni G, Tanturli M, Tusa I, DeSouza N, Shan Y, Gozzini A, Mazurier F, **Rovida E***, Li S, Dello Sbarba P. Targeting Chronic Myeloid Leukemia Stem Cells with the Hypoxia-Inducible Factor Inhibitor Acriflavine. Blood. In press. **IF2015 11.8**.

44. Cheloni G, Poteti M, Bono S, Masala E, Lulli M, Mazure N, **Rovida E**, Dello Sbarba P. Stem Cells International. In press. **IF2015 3.7**.

43. Cipolleschi MG, Marzi I, **Rovida E**, Olivotto M, Dello Sbarba P. Low-dose methotrexate enhances cycling of highly anaplastic cancer cells. Cell Cycle. 2017 Feb;16(3):280-285. doi: 10.1080/15384101.2016.1252883. **IF2015 4.0**; cit. 0.

42. Bono S, Lulli M, D'Agostino VG, Di Gesualdo F, Loffredo R, Cipolleschi MG, Provenzani A, **Rovida E***, Dello Sbarba P. Different BCR/Abl protein suppression patterns as a converging trait of chronic myeloid leukemia cell adaptation to energy restriction. Oncotarget. 2016 Dec 20;7(51):84810-84825. doi: 10.18632/oncotarget.13319. **IF2015 5.1**; cit. 0.

40. Digiacomo G, Tusa I, Bacci M, Cipolleschi MG, Dello Sbarba P, **Rovida E***. Fibronectin induces macrophage migration through a SFK-FAK/CSF-1R pathway. *Cell Adh Migr. 2016 Sep 2:1-11.* **IF2015 3.3**, cit. 0.

39. Stivarou T, Cipolleschi MG, D'Amico M, Mannini A, Mini E, **Rovida E**, Dello Sbarba P, Olivotto M, Marzi I. The complex metabolic network gearing the G1/S transition in leukemic stem

cells: Hints to a rational use of antineoplastic agents. *Oncotarget*. 2015 Oct 13;6(31):31985-96. doi: 10.18632/oncotarget.5155. **IF2015 5.1**; cit. 1.

38. Del Poggetto E, Tanturli M, Ben-Califa N, Gozzini A, Tusa I, Cheloni G, Marzi I, Cipolleschi MG, Kashman Y, Neumann D, **Rovida E***, Dello Sbarba P. Salarin C inhibits maintenance of hypoxia-selected Chronic Myeloid Leukemia progenitor cells. *Cell Cycle*. 2015 14(19):3146-54. **IF2015 4.0**; cit. 1.

37. **Rovida E**, Stecca B. Mitogen-Activated Protein Kinases and Hedgehog-GLI signaling in cancer: a crosstalk providing therapeutic opportunities? *Semin Cancer Biol*. 2015 Dec;35:154-67. doi: 10.1016/j.semcancer.2015.08.003. Review. **IF2015 10**; cit. 8.

36. Digiacomo G, Ziche M, Dello Sbarba P, Donnini S, **Rovida E***. Prostaglandin E2 trans-activates the Colony-Stimulating Factor-1 (CSF-1) receptor and synergizes with CSF-1 in the induction of macrophage migration via the mitogen-activated protein kinase ERK1/2. *FASEB J.* 2015 Jun;29(6):2545-54. **IF2015 5.3**; cit. 6.

35. Laurenzana A, Fibbi G, Chillà A, Margheri G, Del Rosso T, **Rovida E**, Del Rosso M, Margheri F. Lipid rafts: integrated platforms for vascular organization offering therapeutic opportunities. *Cell Mol Life Sci.* 2015 Apr;72(8):1537-57. **IF2015 5.7**; cit. 6.

34. Cannito S, Turato C, Paternostro C, Biasiolo A, Colombatto S, Cambieri I, Quarta S, Novo E, Morello E, Villano G, Fasolato S, Musso T, David E, Tusa I, **Rovida E**, Autelli R, Smedile A, Cillo U, Pontisso P, Parola M. Hypoxia up-regulates SERPINB3 through HIF-2α in human liver cancer cells. *Oncotarget*. 2015 6(4):2206-2221. **IF2015 5.1**; cit. 13.

33. **Rovida E**, Peppicelli S, Bono S, Bianchini F, Tusa I, Cheloni G, Marzi I, Cipolleschi MG, Calorini L, Dello Sbarba P. The metabolically-modulated stem cell niche: a dynamic scenario regulating cancer cell phenotype and resistance to therapy. *Cell cycle*. 2014 13(20):3169-3175. **IF2015 4.0**; cit. 13.

32. **Rovida E***, Di Maira G, Tusa I, Cannito S, Paternostro C, Navari N, Vivoli E, Deng X, Gray NS, Esparís-Ogando A, David E, Pandiella A, Dello Sbarba P, Parola M, Marra F. The mitogen-activated protein kinase ERK5 regulates the development and growth of hepatocellular carcinoma. *Gut.* 2015 Sep;64(9):1454-65. doi:10.1136/gutjnl-2014-306761. Epub 2014 Sep 2. **IF2015 14.9**, cit. 8.

31. **Rovida E***, Dello Sbarba P. Possible mechanisms and function of nuclear trafficking of the colony-stimulating factor-1 receptor. *Cell Mol Life Sci*. 2014 71(19):3627-31. **IF2015 5.7**; cit. 1.

30. Cipolleschi MG, Marzi I., Santini R, Fredducci D, Vinci MC, D'Amico M, **Rovida E**, Stivarou T, Torre E, Dello Sbarba P, Stecca B, Olivotto M. Hypoxia-resistant profile implies vulnerability of cancer stem cells to physiological agents which suggests new therapeutic targets. *Cell Cycle*. 2014 Jan 15;13(2):268-78. doi: 10.4161/cc.27031. **IF2015 4.0**; cit. 9.

29. Barbetti V, Morandi A, Tusa I, Digiacomo G, Riverso M, Marzi I, Cipolleschi MG, Bessi S, Giannini A, Di Leo A, Dello Sbarba P, **Rovida E***. Chromatin-associated CSF-1R binds to the promoter of proliferation-related genes in breast cancer cells. *Oncogene.* 2014 3(34):4359-64. doi: 10.1038/onc.2013.542. Epub 2013 Dec 23. **IF2015 7.9**; cit. 10.

28. Barbetti V, Tusa I, Cipolleschi MG, **Rovida E***, Dello Sbarba P. AML1/ETO sensitizes via TRAIL acute myeloid leukemia cells to the pro-apoptotic effects of hypoxia *Cell Death Dis.* 2013 Mar 14;4:e536. doi: 10.1038/cddis.2013.49. **IF2015 5.4**; cit. 13.

27. Barbetti V, Gozzini A, Cheloni G, Marzi I, Fabiani E, Santini V, Dello Sbarba P, **Rovida E***. Time- and residue-specific differences in histone acetylation induced by VPA and SAHA in AML1/ETO positive leukemia cells. *Epigenetics.* 2013 Feb;8(2):210-9. doi: 10.4161/epi.23538. **IF2015 4.8**; cit. 15.

26. Cipolleschi MG, **Rovida E**, Dello Sbarba P. The Culture-Repopulating Ability assays and incubation in low oxygen: a simple way to test drugs on leukaemia stem or progenitor cells. *Curr. Pharm. Des*. 2013 19(30):5374-83. **IF2015 3.1**; cit. 7.

25. Marzi I, Cipolleschi MG, D'Amico M, Stivarou D, **Rovida E**, Vinci MC, Pandolfi S, Dello Sbarba P, Stecca B, Olivotto M. The involvement of a Nanog, Klf4 and c-Myc transcriptional circuitry in the intertwining between neoplastic progression and reprogramming. *Cell Cycle*. 2013 Jan 15;12(2):353-64. doi: 10.4161/cc.23200. Epub 2012 Jan 15. **IF2015 4.0**; cit. 16.

AWARDS AND HONOURS

Winner of the following fellowships

2007 (2 years) fellowship funded by the Fondazione Italiana per la Ricerca sul Cancro (FIRC).
2001 (3 years) fellowship funded by the Fondazione Italiana per la Ricerca sul Cancro (FIRC).

Invited speaker

2014, November 13th, Istituto Toscano Tumori, Firenze, Italy. Colony-Stimulating Factor-1 Receptor and Extracellular signal-Regulated Kinase 5 in cancer.
2013, April 8th: Aaron Lazare Medical Research Building (LRB), UMass Medical School, Worcester, MA, USA. The MAP kinase ERK5 as a novel target in hypoxia-resistant stem/progenitor cells of chronic myeloid leukaemia.
2010, June 25th: Albert Einstein College of Medicine, Bronx, NY, USA. Intra-cellular localization of the Colony-Stimulating Factor-1 Receptor: possible role in breast cancer pathogenesis?
2010, May 4th: Expression and intra-cellular localization of the macrophage Colony-Stimulating Factor Receptor in breast cancer cells, Denothe, University of Florence, Italy.

Member of the following scientific societies

Italian Society of Pathology and Translational Medicine (SIPMET), Italian Society of Experimental Hematology (SIES), Italian Cancer Society (SIC), European Association for Cancer Research (EACR).

Grant reviewer for international funding agencies

2015-present: Etablissement Français du Sang / France National Blood Service (EFS).
2013-present: the Health and Medical Research Fund of the Food and Health Bureau under The Government of the Hong Kong SAR.

Editorial board member

2016-present Review Editor in Signaling, part of the journal Frontiers in Cell and Developmental Biology.

External referee for scientific journal

Cellular Signalling, Frontiers in Cell and Developmental Biology, The British Journal of Haematology
Leukaemia Research, Biochemical Pharmacology, Journal of Inflammation, Arzneimittelforschung/Drug Research, Liver International, Stem Cells International, PloS One, Current Medicinal Chemistry.

FUNDINGS (LAST FIVE YEARS)

2016-2019 (3 years) “Stroma-derived signals in the regulation of the biology of cholangiocarcinoma” granted by granted by *Associazione Italiana per la Ricerca sul Cancro* to Fabio Marra. Call 2015. *Role on project: co-investigator*.

2015-2018 (200000 €/ 3 years) “Role of cell-specific expression of ERK5 in the development of hepatocellular carcinoma associated with chronic liver injury” granted by *Istituto Toscano Tumori* to Fabio Marra. Call 2014. *Role on project: co-investigator.*

2015-2018 (203000 €/ 3 years) “Role of ERK5 in the selection of Chronic Myeloid Leukaemia cells in hypoxia in the design of strategies to suppress Minimal Residual Disease” granted by *Istituto Toscano Tumori* to Persio Dello Sbarba. Call 2014. *Role on project: co-investigator.*

2015-2018 (234000 €/ 3 years) “Targeting the Mitogen-Activated Protein Kinase ERK5 in human melanoma” granted by *Associazione Italiana per la Ricerca sul Cancro* to Elisabetta Rovida. Call 2013 (IG-15282). ***Role on project: Principal investigator.***

2013-2015 (230.000 €/3 years) “The MAP kinase ERK5 as a novel target in hypoxia-resistant stem/progenitor cells of chronic myeloid leukaemia” granted to Dr Persio Dello Sbarba by *Associazione Italiana per la Ricerca sul Cancro*. Call 2012 (IG-13466). *Role on project: co-investigator.*

2013 “Targeting CSF1/CSF-1R and Hedgehog signaling in triple negative breast cancer” finanziato da University of Florence (ex 60%) a Elisabetta Rovida. Call 2012. 1200 €/1 anno. ***Role on project: Principal Investigator.***

2013-2014 (60000 €/2 years) “Role of mitogen-activated protein kinase ERK5 in chronic liver injury and hepatocellular carcinoma” granted to Dr Fabio Marra by *Fondazione Umberto Veronesi*, Call 2012. *Role on project: co-investigator.*

2012 (2000 €/1 year) “Evaluation of the effect of kinase inhibitors on the Colony-Stimulating Factor-1-dependent proliferation in breast cancer cells” granted by the University of Florence (ex 60%) to Dr Elisabetta Rovida. Call 2011. ***Role on project: Principal Investigator.***

2011-2012 (22000 € /2 years) “Soppressione di BCR/Abl nelle Cellule Staminali Leucemiche (LSC) e loro resistenza all’Imatinib-mesilato come base per lo sviluppo di trattamenti LSC-specifici della Laucemia Mieloide Cronica” granted to Dr Persio Dello Sbarba by the Fondazione Bartolomei-Corsi. Call 2010. *Role on project: co-investigator*.

2011-2013 (€ 240.000/3 years) “Stem cell selection in severe hypoxia as a method to enhance recovery of transplantable normal stem cells and to isolate cancer stem cells to determine their drug sensitivity” granted by Regione Toscana – Programma per la Ricerca in materia di Salute - to Dr Persio Dello Sbarba. Call 2009. *Role on project: co-investigator*.

2010-2012 (180.000/3 years) “Role of the mitogen-activated protein kinase ERK5 in hepatocellular carcinoma” granted by *Associazione Italiana per la Ricerca sul Cancro* to Fabio Marra. Call 2009. *Role on project: co-investigator.*

Florence, 26th April 2017