

## Curriculum vitae CUTRUPI SANTINA

### Personal details

Born in: Turin

Nationality: Italian

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### Educations

2001: PhD Degree in Biochemistry and Cellular Biotechnology, University of Turin; “ $\alpha$ -Diacylglycerol kinase, a lipid kinase in signalling of HGF and v-Src”.

1996: Degree in Biology at the University of Turin with Thesis in “Transcriptional Regulation of erbB2 in mammary cell”

### Professional experiences and current position

2022-today: Associate Professor in Molecular Biology at the Dept. Clinical and Biological Science, Torino.

2007- 2022: Assistant Professor in Molecular Biology at the Dept. Clinical and Biological Science, Torino.

2006: Post-doctoral fellow at the Dept. Medical Science of University of Piemonte Orientale, Novara.

2003-2005: Post-doctoral fellow FIRC 2003-2005 at the University of Piemonte Orientale, Novara.

2002: Post-doctoral fellow at the Dept. Medical Science of University of Piemonte Orientale, Novara. lines”.

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

Coordinator of the biomolecular curriculum in the Master Degree “Cellular and Molecular Biology”, University of Turin. <https://cmb.campusnet.unito.it/do/home.pl>.

### Teaching activity:

2023- Crispr system molecular biology laboratory at the course of Advanced Molecular Biology, Cellular and Molecular Biology Master Degree, University of Torino

2019: Erasmus Teaching Exchanges at the “Trinity College Dublin”, Dublin, Ireland.

2018-today: “Biochemical and Molecular Basis of Metabolism” course of Surgical and Medical Master Degree in the University of Torino

2016-today: “Advanced Molecular Biology” course of Cellular and Molecular Biology Master Degree in the University of Torino

2006-2015: Cloning laboratory for biologist in the University of Torino

2010-2013: “Molecular Biology” course of Industry Biotechnology Master Degree in the University of Torino

2006-2015: “Ricombinant Technology of DNA” course of Biological Science Degree in the University of Torino

2003-2005: Contract Professor of course “Biochemistry Principles” for nursing students in the Medicine and Surgery Faculty

1997-2001: molecular and cellular laboratory for medical students and biologist in the Medicine and Surgery Faculty, University of Piemonte Orientale, Novara, Italy

1997: biochemistry laboratory for medical students in the Genetic, Biology and Biochemistry Department, University of Torino, Italy

### Research main topics

Circular RNAs in cancer. Circular RNAs (circRNAs) Circular RNAs are a new class of RNA molecules characterized by a covalently closed structure. circRNAs can recruit RNA binding proteins and we are characterizing these complexes in the molecular mechanisms underpinning splicing and chromatin remodeling in cancer progression.

Epigenetics regulation in multiple sclerosis. We demonstrated that Estrogen Receptor regulates the epigenetic changes at the promoter of transcription factors, master regulator of specific T cell subtypes important in multiple sclerosis during pregnancy (Iannello et al., 2019). Recently, we are going to study the pathway of RANK, RANKL and OPG in the context of multiple sclerosis, in collaboration with Prof. Ietta, University of Siena.

***Bibliometry (2000-present)*** ([www.scopus.com](http://www.scopus.com))

The scientific publications of Prof. CUTRUPI have 28 papers in international journals indexed in ISI, a total of 1476 citations and *h*-index:17.

***10 best publications***

Iannello A, Rolla S, Maglione A, Ferrero G, Bardina V, Inaudi I, De Mercanti S, Novelli F, D'Antuono L, Cardaropoli S, Todros T, Turrini MV, Cordioli C, Puorro G, Marsili A, Lanzillo R, Brescia Morra V, Cordero F, De Bortoli M, Durelli L, Visconti A, **Cutrupi S**, Clerico M. Pregnancy Epigenetic Signature in T Helper 17 and T Regulatory Cells in Multiple Sclerosis. *Front Immunol.* 2019 Jan 8;9:3075. doi:10.3389/fimmu.2018.03075. PMID: 30671056; PMCID: PMC6331474.

Guglielmotto M, Reineri S, Iannello A, Ferrero G, Vanzan L, Miano V, Ricci L, Tamagno E, De Bortoli M, **Cutrupi S**. E2 Regulates Epigenetic Signature on Neuroglobin Enhancer-Promoter in Neuronal Cells. *Front Cell Neurosci.* 2016 Jun 1;10:147. doi: 10.3389/fncel.2016.00147. PMID: 27313512; PMCID: PMC4887468.

Caizzi L, Ferrero G, **Cutrupi S**, Cordero F, Ballaré C, Miano V, Reineri S, Ricci L, Friard O, Testori A, Corà D, Caselle M, Di Croce L, De Bortoli M. Genome-wide activity of unliganded estrogen receptor- $\alpha$  in breast cancer cells. *Proc Natl Acad Sci U S A.* 2014 Apr 1;111(13):4892-7. doi:10.1073/pnas.1315445111. Epub 2014 Mar 17. PMID: 24639548; PMCID: PMC3977241.

**Cutrupi S**, Reineri S, Panetto A, Grosso E, Caizzi L, Ricci L, Friard O, Agati S, Scatolini M, Chiorino G, Lykkesfeldt AE, De Bortoli M. Targeting of the adaptor protein Tab2 as a novel approach to revert tamoxifen resistance in breast cancer cells. *Oncogene.* 2012 Oct 4;31(40):4353-61. doi: 10.1038/onc.2011.627. Epub 2012 Jan 16. Erratum in: *Oncogene.* 2012 Oct 4;31(40):4420. PMID: 22249258.

Borgoni S, Iannello A, **Cutrupi S**, Allavena P, D'Incalci M, Novelli F, Cappello P. Depletion of tumor-associated macrophages switches the epigenetic profile of pancreatic cancer infiltrating T cells and restores their anti-tumor phenotype. *Oncoimmunology.* 2017 Nov 13;7(2):e1393596. doi:10.1080/2162402X.2017.1393596. PMID: 29308326; PMCID: PMC5749621.

**Cutrupi S**, Baldanzi G, Gramaglia D, Maffè A, Schaap D, Giraudo E, van Blitterswijk W, Bussolino F, Comoglio PM, Graziani A. Src-mediated activation of alpha-diacylglycerol kinase is required for hepatocyte growth factor-induced cell motility. *EMBO J.* 2000 Sep 1;19(17):4614-22. doi: 10.1093/emboj/19.17.4614. PMID: 10970854; PMCID: PMC302077.

Baldanzi G, Filigheddu N, **Cutrupi S**, Catapano F, Bonisconi S, Fubini A, Malan D, Baj G, Granata R, Broglio F, Papotti M, Surico N, Bussolino F, Isgaard J, Deghenghi R, Sinigaglia F, Prat M, Muccioli G, Ghigo E, Graziani A. Ghrelin and des-acyl ghrelin inhibit cell death in cardiomyocytes and endothelial cells through ERK1/2 and PI 3-kinase/AKT. *J Cell Biol.* 2002 Dec 23;159(6):1029-37. doi: 10.1083/jcb.200207165. Epub 2002 Dec 16. PMID: 12486113; PMCID: PMC2173981

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

Elhasnaoui J, Ferrero G, Miano V, Franchitti L, Tarulli I, Coscujuela Tarrero L, Cutrupi S, De Bortoli M. A Regulatory Axis between Epithelial Splicing Regulatory Proteins and Estrogen Receptor  $\alpha$  Modulates the Alternative Transcriptome of Luminal Breast Cancer. *Int J Mol Sci.* 2022 Jul 16;23(14):7835. doi: 10.3390/ijms23147835. PMID: 35887187; PMCID: PMC9319905.

Passaponti S, Ermini L, Acconci G, Severi FM, Romagnoli R, Cutrupi S, Clerico M, Guerrera G, Ietta F. Rank-Rankl-Opg Axis in Multiple Sclerosis: The Contribution of Placenta. *Cells.* 2022 Apr 15;11(8):1357. doi: 10.3390/cells11081357. PMID: 35456036; PMCID: PMC9031903.

Elhasnaoui J, Ferrero G, Miano V, Cutrupi S, De Bortoli M. The Estrogen Receptor  $\alpha$  Signaling Pathway Controls Alternative Splicing in the Absence of Ligands in Breast Cancer Cells. *Cancers (Basel).* 2021 Dec 13;13(24):6261. doi:10.3390/cancers13246261. PMID: 34944881; PMCID: PMC8699117.

Maglione A, Rolla S, Mercanti SF, Cutrupi S, Clerico M. The Adaptive Immune System in Multiple Sclerosis: An Estrogen-Mediated Point of View. *Cells.* 2019 Oct 19;8(10):1280. doi: 10.3390/cells8101280. PMID:

31635066; PMCID: PMC6829884.

Valsecchi V, Boido M, Montarolo F, Guglielmotto M, Perga S, Martire S, Cutrupi S, Iannello A, Gionchiglia N, Signorino E, Calvo A, Fuda G, Chiò A, Bertolotto A, Vercelli A. The transcription factor Nurr1 is upregulated in amyotrophic lateral sclerosis patients and SOD1-G93A mice. *Dis Model Mech*. 2020 May 15;13(5):dmm043513. doi: 10.1242/dmm.043513. PMID: 32188741; PMCID: PMC7240304.

Iannello A, Rolla S, Maglione A, Ferrero G, Bardina V, Inaudi I, De Mercanti S, Novelli F, D'Antuono L, Cardaropoli S, Todros T, Turrini MV, Cordioli C, Puorro G, Marsili A, Lanzillo R, Brescia Morra V, Cordero F, De Bortoli M, Durelli L, Visconti A, Cutrupi S, Clerico M. Pregnancy Epigenetic Signature in T Helper 17 and T Regulatory Cells in Multiple Sclerosis. *Front Immunol*. 2019 Jan 8;9:3075. doi: 10.3389/fimmu.2018.03075. PMID: 30671056; PMCID: PMC6331474.

Pernice S, Pennisi M, Romano G, Maglione A, Cutrupi S, Pappalardo F, Balbo G, Beccuti M, Cordero F, Calogero RA. A computational approach based on the colored Petri net formalism for studying multiple sclerosis. *BMC Bioinformatics*. 2019 Dec 10;20(Suppl 6):623. doi: 10.1186/s12859-019-3196-4. PMID: 31822261; PMCID: PMC6904991.