

CURRICULUM VITAE Dr. CLAUDIA GHIGNA



Employment/Education

2004-2005 Visiting Scientist, Howard Hughes Medical Institute, University of Massachusetts, Worcester, MA, USA

2001-present Researcher, Institute of Molecular Genetic - Italian National Research Council (IGM-CNR), Pavia

2000 Advanced School of Integrated Studies (SAFI), Institute of Superior Studies, University of Pavia

2000 PhD Genetics and Molecular Biology, University of Pavia

1997 Qualified Professional Biologist, University of Pavia

1995 Degree in Biological Sciences cum laude, University of Pavia

Awards

2001 CNR Fellowship

1997 Buzzati-Traverso Fellowship

1996 Buzzati-Traverso Fellowship

Leadership in projects (PI)

- 2019-2023 Italian Association for Cancer Research (AIRC) project: 21966
- 2016-2018 Italian Association for Cancer Research (AIRC) project: 17395
- 2014-2015 Fondazione Banca del Monte di Lombardia
- 2011-2014 Worldwide Cancer Research (ex AICR-UK) project: 11-0622
- 2012-2015 Italian Association for Cancer Research (AIRC) project: 11913
- 2005 Short Mobility Grant CNR
- 2004 Short Mobility Grant CNR

Invited speaker

- Interplay between RNA binding proteins and non coding RNA's. Fondazione Mondino di Pavia 27-28th June 2019 (Pavia, Italy)
- Meeting SIICA (Italian Society of Immunology, Clinical Immunology and Allergology) 25-27 May 2015. Certosa di Pontignano (Siena, Italy)
- The regulation of the metabolism of nucleic acids as a source of new opportunities for therapeutic intervention, PhD in Genetic and Biomolecular Sciences, University of Pavia (Italy), 12-15 April 2011
- Pre-mRNA maturation from molecular biology to pathology" PhD in Genetic and Biomolecular Sciences, University of Pavia (Italy), 18-25 March 2010;
- Meeting EURASNET ("European Alternative Splicing Network of Excellence"), 1-4 March 2010 Lisbon, Portugal
- International Meeting FISV (Italian Federation of Life Sciences), 23-25 September 2009, Riva del Garda, Italy

- Meeting EURASNET (“European Alternative Splicing Network of Excellence”) “Alternative Splicing”, 21-23 May 2008, Krakow, Poland;
- “Alternative Splicing and Disease Workshop”, 18 – 23 February 2008, University of Montpellier II, France
- “Alternate Transcript Diversity – Biology and Therapeutics” EMBL, 21-23 March, 2006, Heidelberg, Germania;
- 8th Annual Meeting of the RNA Society, 1-6 July 2003, Vienna - Austria;
- “RNA day”, 28 January, 2003, La Sapienza University, Rome.

Ad hoc reviewer

Science, Nature Communications, Molecular Cancer, Nucleic Acids Research, Trends in Molecular Medicine, Cancers, Scientific Reports, Human Molecular Genetics, PLOS ONE, Atherosclerosis, BMC Cancer, PeerJ, Journal of Experimental & Clinical Cancer Research, Frontiers in Genetics, Aging-us, Future Oncology, Apoptosis, BioMed Research International, International Journal of Molecular Sciences, Acta Biochimica et Biophysica Sinica, FEBS letter, Human Cell, Cellular and Molecular Neurobiology, Oncotarget, Molecular Medicine, DNA and Cell Biology, Journal of Molecular Medicine, World Journal of Gastroenterology, Journal of Cellular Biochemistry, Journal of Cardiovascular Medicine, Gene, Clinical and Experimental metastasis, International Journal of Cancer, Neurological Sciences, Biochimica et Biophysica Acta (BBA).

Consultant for the evaluation of National and International Grants

University of Rome Tor Vergata (Beyond Borders) Italy, FIRB Giovani 2013 (Italian Ministry of University and Research); AIDS Grant Programme (Italian Ministry of Health); Bandi SIR (Italian Ministry of University and Research), The Wellcome Trust/DBT-India Alliance; The Wellcome Trust, London-UK; "Rita Levi Montalcini Program" (Italian Ministry University and Research); North West Cancer Research Grant Application-UK; ICGEB (International Centre for Genetic Engineering and Biotechnology) Research Grants (Trieste Italy); French National Research Agency (ANR); ANVUR (Italian National Agency for the Evaluation of the University System and Research).

Dr Ghigna is included in the register of independent Italian and foreign scientific experts (Italian Ministry of University and Research, <https://reprise.cineca.it>)

Editor

- **2019. Special Issue:** “Alternative Splicing: Recent Insights into Mechanisms and Functional Role” in *Cells*”; ISSN 2073-4409
- **2015. Special Issue:** “Posttranscriptional Regulation and RNA Binding Proteins in Cancer Biology”. *BioMed Research International*.
- **2013. Special Issue:** “Alternative splicing: role in cancer development and progression” in *International Journal of Cell Biology*

Editorial Board

Associate Editor of “Frontiers in Genetics” (RNA section)

<http://journal.frontiersin.org/journal/genetics#editorial-board>

Prizes

Best young researcher, Italian National Research Council (CNR), 2009

SCIENTIFIC COLLABORATIONS

- Prof. Elisabetta Dejana (IFOM-IEO, Milano - Italia);
- Prof. Anne Eichmann (Yale University School of Medicine, New Haven, CT, USA);
- Prof. Benjamin J. Blencowe (University of Toronto, Toronto - Canada);
- Patrick Mehlen, director | Fondation Synergie Lyon Cancer (EN
- Dr. Ugo Cavallaro (European Institute of Oncology - IEO, Milano - Italy);
- Prof. Daniel Nyqvist (Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm - Sweden);
- Dr. Manuel Irimia (EMBL/CRG Research Unit in Systems Biology, Centre for Genomic Regulation (CRG), Barcelona – Spain);
- Dr. Marco Presta (Department of Molecular and Translational Medicine, University of Brescia, Brescia - Italy);
- Prof. Francisco Baralle (International Centre for Genetic Engineering and Biotechnology - ICGEB, Trieste - Italy);
- Dr. Serena Zacchigna (Molecular Medicine Laboratory, ICGEB, Trieste – Italy).
- Dr. Emanuele Buratti (International Centre for Genetic Engineering and Biotechnology - ICGEB, Trieste - Italy);
- Dr. Davide Gabellini (Fondazione San Raffaele del Monte Tabor, Milano – Italia);
- Dr. Carla Taveggia (Fondazione San Raffaele del Monte Tabor, Milano – Italia);
- Dr. Giuseppe Biamonti (Institute of Molecular Genetics, National Research Council IGM-CNR, Pavia – Italy);
- Prof. Michael R. Green (Howard Hughes Medical Institute, University of Massachusetts Medical School, Worcester, Massachusetts - USA);
- Prof. Claudio Sette (University of Rome Tor Vergata, Roma - Italy);
- Dr. Maria Paola Paronetto (Department of Movement, Human and Health Sciences Università del Foro Italico, Roma - Italy).
- Dr. Federico Forneris (Armenise-Harvard Laboratory of Structural Biology, Dept. Biology and Biotechnology, University of Pavia, Pavia, - Italy);

PUBLICATIONS:

1. Belloni E, Di Matteo A, Pradella D, Vacca M, Wyatt CDR, Alfieri R, Maffia A, Sabbioneda S, **Ghigna C**. Gene Expression Profiles Controlled by the Alternative Splicing Factor Nova2 in Endothelial Cells. *Cells*. 2019; **8**: pii: E1498
2. Biamonti G, Amato A, Belloni E, Di Matteo A, Infantino L, Pradella D, **Ghigna C**. Alternative splicing in Alzheimer's disease. *Aging Clin Exp Res*. 2019 Oct 3.
3. Angiolini F, Belloni E, Giordano M, Campioni M, Forneris F, Paronetto MP, Lupia M, Brandas C, Pradella D, Di Matteo A, Giampietro C, Jodice G, Luise C, Bertalot G, Freddi S, Malinverno M, Irimia M, Moulton JD, Summerton J, Chiapparino A, Ghilardi C, Giavazzi R, Nyqvist D, Gabellini D, Dejana E, Cavallaro U, **Ghigna C**. A novel L1CAM isoform with angiogenic activity generated by NOVA2-mediated alternative splicing. *Elife*. 2019, **8**: pii: e44305.
4. Nakka K, **Ghigna C**, Gabellini D, Dilworth FJ. Diversification of the muscle proteome through alternative splicing. *Skelet Muscle*. 2018; **8**:8.
5. Pradella D, Naro C, Sette C, **Ghigna G**. EMT and stemness: flexible processes tuned by alternative splicing in development and cancer progression. *Mol Cancer*. 2017, **16**: 8. **IF=**
6. Giampietro C, Deflorian G, Gallo S, Di Matteo A, Pradella D, Bonomi S, Belloni E, Nyqvist D, Quaranta V, Confalonieri S, Bertalot G, Orsenigo F, Pisati F, Ferrero E, Biamonti G, Fredrickx E, Taveggia C, Wyatt CD, Irimia M, Di Fiore PP, Blencowe BJ, Dejana E, **Ghigna C**. The alternative splicing factor Nova2 regulates vascular development and lumen formation. *Nat Commun*. 2015; **6**: 8479.
7. **Ghigna C**§, Cartegni L, Jordan P, Paronetto MP. Posttranscriptional Regulation and RNA Binding Proteins in Cancer Biology. *Biomed Res Int*. 2015; **2015**: 897821.
§Corresponding author
8. Frisone P, Pradella D, Di Matteo A, Belloni E, **Ghigna C**§, Paronetto MP. SAM68: signal transduction and RNA metabolism in human cancer. *Biomed Res Int*. 2015; **2015**: 528954.
§Corresponding author
9. Loh TJ, Cho S, Moon H, Jang HN, Williams DR, Jung DW, Kim IC, **Ghigna C**, Biamonti G, Zheng X, Shen H. hnRNP L inhibits CD44 V10 exon splicing through interacting with its upstream intron. *Biochim Biophys Acta*. 2015; **1849**: 743-50.
10. Moon H, Cho S, Loh TJ, Oh HK, Jang HN, Zhou J, Kwon YS, Liao DJ, Jun Y, Eom S, **Ghigna C**, Biamonti G, Green MR, Zheng X, Shen H. SRSF2 promotes splicing and transcription of exon 11 included isoform in Ron proto-oncogene. *Biochim Biophys Acta*. 2014 Nov; 1839: 1132-40.
11. Biamonti G, Catillo M, Pignataro D, Montecucco A, **Ghigna C**. The alternative splicing side of cancer. *Semin Cell Dev Biol*. 2014; 32:30-6.

12. Sette C, Lodomery M, **Ghigna C**. Alternative splicing: role in cancer development and progression. *Int J Cell Biol.* 2013; 2013: 421606.
13. Bonomi S, Gallo S, Catillo M, Pignataro D, Biamonti G, **Ghigna C**. Oncogenic alternative splicing switches: role in cancer progression and prospects for therapy. *Int J Cell Biol.* 2013; 2013: 962038.
14. **Ghigna C**, Riva S, Biamonti G. Alternative splicing of tumor suppressors and oncogenes. *Cancer Treat Res.* 2013; 158: 95-117.
15. Moon H, Cho S, Loh TJ, Zhou J, **Ghigna C**, Biamonti G, Green MR, Zheng X, Shen H. A 2-nt RNA enhancer on exon 11 promotes exon 11 inclusion of the Ron proto-oncogene. *Oncol Rep.* 2014; 31: 450-5.
16. Siegfried Z, Bonomi S, **Ghigna C**, Karni R. Regulation of the Ras-MAPK and PI3K-mTOR Signalling Pathways by Alternative Splicing in Cancer. *Int J Cell Biol.* 2013; 2013: 568931.
17. Bonomi S, di Matteo A, Buratti E, Cabianca DS, Baralle FE, **Ghigna C***, Biamonti G. HnRNP A1 controls a splicing regulatory circuit promoting mesenchymal-to-epithelial transition. *Nucleic Acids Res.* 2013; 41: 8665-79.
***Corresponding author**
18. Biamonti G, Bonomi S, Gallo S, **Ghigna C**. Making alternative splicing decisions during epithelial-to-mesenchymal transition (EMT). *Cell Mol Life Sci.* 2012; 69: 2515-26.
19. Valacca C, Bonomi S, Buratti E, Pedrotti S, Baralle FE, Sette C, **Ghigna C***, Biamonti G*. Sam68 regulates EMT through alternative splicing-activated nonsense-mediated mRNA decay of the SF2/ASF proto-oncogene. *J Cell Biol.* 2010; 191: 87-99.
Co-last author and corresponding author
20. **Ghigna C***, De Toledo M, Bonomi S, Valacca C, Gallo S, Apicella M, Eperon I, Tazi J, Biamonti G. Pro-metastatic splicing of Ron proto-oncogene mRNA can be reversed: therapeutic potential of bifunctional oligonucleotides and indole derivatives. *RNA Biol.* 2010; 7: 495-503.
***Corresponding author**
21. Pistoni M, **Ghigna C**, Gabellini D. Alternative splicing and muscular dystrophy. *RNA Biol.* 2010; 7: 441-52.
22. **Ghigna C§**, Valacca C, Biamonti G. Alternative splicing and tumor progression. *Current Genomics* 2008; 9: 556-70.
§Corresponding author
23. Valgardsdottir R, Chiodi I, Giordano M, Rossi A, Bazzini S, **Ghigna C**, Riva S, Biamonti

G. Transcription of SatelliteIII non-coding RNAs is a general stress response in human cells. *Nucleic Acids Res.* 2008; **36**: 423-34.

24. **Ghigna C**, Giordano S, Shen H, Benvenuto F, Castiglioni F, Comoglio PM, Green MR, Riva S, Biamonti G. Cell motility is controlled by SF2/ASF through alternative splicing of the Ron protooncogene. *Molecular Cell* 2005; **20**: 881-90
25. Chiodi I, Corioni M, Giordano M, Valgardsdottir R, **Ghigna C**, Cobianchi F, Xu RM, Riva S, Biamonti G. RNA recognition motif 2 directs the recruitment of SF2/ASF to nuclear stress bodies. *Nucleic Acids Res.* **32**: 4127-36.
26. Shen H, Kan JL, **Ghigna C**, Biamonti G, Green MR. A single polypyrimidine tract binding protein (PTB) binding site mediates splicing inhibition at mouse IgM exons M1 and M2. *RNA* 2004; **10**: 787-94.
27. **Ghigna C**, Moroni M, Porta C, Riva S, Biamonti G. Altered expression of heterogenous nuclear ribonucleoproteins and SR factors in human colon adenocarcinomas. *Cancer Res.* 1998; **58**: 5818-24.
28. Biamonti G, **Ghigna C**, Caporali R, Montecucco C. Heterogeneous nuclear ribonucleoproteins (hnRNPs): an emerging family of autoantigens in rheumatic diseases *Clin Exp Rheumatol.* 1998; **16**: 317-26.
29. Camacho-Vanegas O, Weighardt F, **Ghigna C**, Amaldi F, Riva S, Biamonti G. Growth-dependent and growth-independent translation of messengers for heterogeneous nuclear ribonucleoproteins. *Nucleic Acids Res.* 1997; **25**: 3950-4.

CHAPTER IN BOOK

1. Paronetto MP, Gallo S, Di Matteo A, **Ghigna C** (2014). Alternative Pre-mRNA Processing in Cancer Progression: Clinical Significance and Therapeutic Implications. *Global Journal of Human Genetics & Gene Therapy*. Volume 2, No. 1, March 2014; Pages 1-16.
2. Biamonti G and **Ghigna C** (2008). Aberrant alternative splicing: role in tumorigenesis and prospect for therapies. Capitolo nel libro: Multiple pathways towards cancer development. Pubblicato da The Transworld research network, ISBN: 978-81-7895-362-5, pp 87-106.
3. **Ghigna C**, Valacca C, Giordano M, Cabianca D, Carpanelli E, Valgardsdottir R, Chiodi I, Biamonti G (2006). Alternative splicing and cancer: a stressing game? Capitolo nel libro: Alternative Splicing in Cancer. Pubblicato da The Transworld research network, ISBN: 81-7895-235-1, pp 197-208.
4. Valgardsdottir R, Chiodi I, Giordano M, **Ghigna C**, Biamonti G (2004). Nuclear stress bodies: anatomy and physiology of heterochromatin transcription factories. Recent Research Developments in Cell Science, 73-81 ISBN:81-7895, pp 112-6.

