

CURRICULUM VITAE ANNA DI MATTEO

Personal data

Name and Surname: Anna Di Matteo
Place and date of birth: Avellino (AV), 06/July/1990
Citizenship: Italian
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Formal education

- 2013-2016:** PhD Programme in Genetics, Molecular and Cellular Biology. University of Pavia. Ottimo.
- 2011-2013:** Master's degree in Molecular Biology and Genetics. University of Pavia. Full marks and honours: 110/110 cum laude.
- 2008-2011:** Bachelor degree (first level) in Molecular Biology. University of Pavia. Full marks and honours: 110/110 cum laude.

Research experience

- 2019-now** Position: Post-Doctoral Fellowship N. IGM0112018PV.
Project Title: "Alternative splicing: role in angiogenesis and therapeutic perspectives". Institute of Molecular Genetics- National Research Council (IGM-CNR), Pavia, Italy.
Supervisor: Dr. Claudia Ghigna.
- 2018-2019** Position: Post-Doctoral Fellowship N. IGMBS0062017PV.
Project Title: "Dissecting the RNA map of Nova2-regulated alternative splicing during angiogenesis". Institute of Molecular Genetics- National Research Council (IGM-CNR), Pavia, Italy.
Supervisor: Dr. Claudia Ghigna.
- 2017-2018** Position: Post-Doctoral Fellowship. One-year FIRC-AIRC fellowship "Fabrizio Ansuini".
Project Title: "Alternative splicing: role in angiogenesis and therapeutic perspectives". Institute of Molecular Genetics- National Research Council (IGM-CNR), Pavia, Italy.
Supervisor: Dr. Claudia Ghigna.
- Nov 2016-
Dec 2016** Position: Post-Doctoral Fellowship N. IGMBS0032016PV.
Project Title: "Dissecting the RNA map of Nova2-regulated alternative splicing during angiogenesis". Institute of Molecular Genetics- National Research Council (IGM-CNR), Pavia, Italy.
Supervisor: Dr. Claudia Ghigna.
- 2013-2016** Position: PhD student in Genetics, Molecular and Cellular Biology
Project and Thesis Title: "An RNA map of Nova2-regulated alternative splicing in endothelial cells". University of Pavia. Institute of Molecular Genetics- National Research Council (IGM-CNR).
Supervisor: Dr. Claudia Ghigna. External supervisors: Dr. Maria Paola Paronetto, Dr. Emanuele Buratti.
- April 2016** Position: Visiting PhD Student at the Division of RNA Biology and post-transcriptional regulation, Max Delbrück Center for Molecular Medicine (Berlin-Buch, Germany).

Project Title: “Identification of direct mRNA targets regulated by Nova2 specifically in endothelial cells by CLIP-Seq”.

Supervisor: Dr. Markus Landhtaler.

June 2015 Position: Visiting PhD Student at the Division of Vascular Biology, Department of Medical Biochemistry and Biophysics (Karolinska Institute, Stockholm, Sweden).
Project Title: *In vivo* analysis of alternative splicing (AS) variants during developmental angiogenesis in the mouse retina.
Supervisor: Dr. Daniel Nyqvist.

During my PhD project and as a Post-Doc I have studied the role of the splicing factor Nova2 in the endothelium and during the angiogenesis process using different experimental systems as murine and human endothelial cells (ECs) and zebrafish.

2011-2013 Position: Master degree student in Molecular Biology and Genetics. University of Pavia. Internship for Master degree. Institute of Molecular Genetics- National Research Council (IGM-CNR). Experimental thesis: “HnRNP A1 regulates the alternative splicing of the *Ron* proto-oncogene and promotes the mesenchymal-to-epithelial transition program”.
Supervisor: Dr. Claudia Ghigna.

2010-2011 Position: Bachelor degree student in Biological Sciences. University of Pavia. Internship for First Level Graduation Thesis, Institute of Molecular Genetics- National Research Council (IGM-CNR). Experimental thesis: “RT-PCR analysis of alternative splicing of the *Ron* gene after over-expression of hnRNP A1 protein”.
Supervisor: Dr. Claudia Ghigna.

My main project from 2010 to 2013 was to decipher the mechanism underlying aberrant splicing in cancer by using, as an experimental model, the scatter factor receptor and proto-oncogene *Ron* that accumulates during tumor progression of epithelial tissues and is able to confer an invasive phenotype to the expressing cells. In particular, I have focused on the molecular mechanism of splicing that produces Δ Ron isoform, a constitutively active variant of the receptor, studying the implication of two regulatory and antagonistic splicing factors, SRSF1 and hnRNP A1.

Additional Education and professional experiences

- 2019** Course: “Corso di formazione in ambito di comunicazione efficace e Public Speaking.”
- 2019** Participation in the organization of “LabEscape@IGM” during Porte Aperte IGM-CNR.
- 2018** Participation in the organization of the scientific stand of IGM-CNR Institute at the event “Sharper-Notte Europea dei Ricercatori” and “Porte Aperte all’IGM”, part of the European Biotech Week (EBW). (Pavia, Italy, September 28-29, 2018).
- 2016** Practical course: “iCLIP and Ribosome Profiling” (Barcellona, Spain, March 13-19, 2016).
- 2012** Theoretical course: “RNA Structure and Function” (Trieste, Italy, 27 February- 1 March 2012).
- 2011** Part-time work at the Museum of Electrical Technology, University of Pavia. Roles: support activities, documentation and assistance in the library of the museum.

Teaching activity

2014-2019 Tutor of three undergraduate students in the laboratory; correlator of three experimental thesis (one Molecular Biology and Genetics and two Scienze Biologiche, University of Pavia. 110/110 cum Laude).

Professional associations

2017-now: Junior Member of ABCD (Associazione di Biologia Cellulare e del Differenziamento).

Competitions and awards

April 2016 Selected for the Mobility Program for PhD students by University of Pavia.

June 2015 “Short Term Mobility Program” from CNR.

May 2012 “Premio di Ricerca” from “Associazione Alumnae of Collegio Nuovo” of Pavia.

2010-2012 “Dote di Residenzialità”, a support to students of colleges from Regione Lombardia.

2009-2013 Selected as alumnus of the “Collegio Nuovo-Fondazione Sandra e Enea Mattei”, historic college of Pavia and among the thirteen Italian university institutions of high cultural qualification set under the control of the Ministry of Education, Universities and Research (MIUR).

Technical skills and competences

Molecular biology: Cloning procedures, plasmid production and purification. RNA extraction and purification from cells, tissues and Zebrafish embryos. PCR, qPCR, PCR mediated mutagenesis, RT-PCR. Electrophoresis on agarose gel, LM gel and acrylamide gel. DNA, RNA and protein quantification. UV-RIP, iCLIP and PAR-CLIP techniques. SDS-PAGE and Western blotting. Immunofluorescence on mammalian cells.

Cellular Biology: Eukaryotic cell culture. Eukaryotic cell transfection.

Mouse Biology: ENU mutagenesis of murine eyes and dissection of the retina. *in situ* hybridization on whole-mount mouse retina.

Microscopy: Optical and Fluorescent Microscopy.

Bioinformatic tools and Software: NCBI, Ensembl, UCSC, BLAST, DAVID, Primer3, ExonMine, Uniprot, InterPro, Expasy, IGV (Integrative Genomic Viewer). MS Office. Photoshop. NIH ImageJ. Illustrator. GraphPad Prism.

Research activity: Experience in writing scientific papers and project proposals.

Proceedings – Congress communications

- **Di Matteo A**, Belloni E, Terenzani E, Giannotta M, Deflorian G, Paronetto MP, Pradella D, Cereda M, Peirone S, Dejana E, Ghigna C. “The Nova2/Ptbp2 circuit integrates alternative splicing decision during angiogenesis”. LIFE SCIENCE 2020, 3rd Joint Annual Symposium of the Departments of Biology and Biotechnology, Molecular Medicine and CNR Institute of Molecular Genetics, University of Pavia. February 19-21, 2020. Pavia, Italy. Oral communication.

- **Di Matteo A**, Fracassi C, Deflorian G, Belloni E, Giampietro C, Pradella D, Savorani C, Paronetto MP, Irimia M, Cereda M, Dejana E, Ghigna C. “A hierarchy of splicing factors integrating angiogenesis decisions”. ABCD (Italian Association of Cell Biology and differentiation) Meeting.

“From stress response to tissue development and regeneration”. Settembre 28-29, 2018, Pavia, Italy. Poster.

- Pradella D, Deflorian G, Campolungo D, Campioni M, Forneris F, Paradisi A, Belloni E, **Di Matteo A**, Dejana E, Eichmann A, Mehlen P, Ghigna C. "A novel alternative splicing isoform of the Unc5b dependence receptor involved in the formation of specific blood vessels". ABCD (Italian Association of Cell Biology and differentiation) Meeting: "From stress response to tissue development and regeneration". September 28-29, 2018. Pavia, Italy. Oral communication.

- Pradella D, Deflorian G, Campolungo D, Campioni M, Forneris F, Giampietro C, Belloni E, **Di Matteo A**, Dejana E, Eichmann A, Ghigna C. "Nova2 drives the formation of specific blood vessels through the production of a novel alternative splicing isoform of the dependence receptor Unc5b". 2nd Joint Annual Symposium of the Departments of Biology and Biotechnology, Molecular Medicine and CNR Institute of Molecular Genetics. June 20-21-22, 2018. Pavia, Italy. Oral communication.

- **Di Matteo A**, Deflorian G, Giampietro C, Savorani C, Paronetto MP, Irimia M, Cereda M, Fracassi C, Dejana E and Ghigna C. "A hierarchy of splicing factors during angiogenesis decisions". ABCD (Associazione di Biologia Cellulare e del Differenziamento) 2017. September 21-23, 2017. Bologna, Italy. **Selected for oral communication.**

- **Di Matteo A**, Deflorian G, Giampietro C, Savorani C, Paronetto MP, Irimia M, Cereda M, Fracassi C, Dejana E and Ghigna C. "A hierarchy of splicing factors integrating splicing decisions". SIBBM (Società Italiana di Biofisica e Biologia Molecolare) 2017. June 14-16, 2017. Milano, Italy. Poster.

- Giampietro C, Gallo S, Deflorian G, Bonomi S, **Di Matteo A**, Belloni E, Quaranta V, Nyqvist D, Confalonieri S, Bertalot G, Pradella D, Fredrickx E, Biamonti G, Taveggia C, Irimia M, Di Fiore PP, Blencowe BJ, Dejana E, Ghigna C. "The alternative splicing factor Nova2 is a novel regulator of angiogenesis". SIICA (Società Italiana Immunologia, Immunologia Clinica e Allergologia) Meetings: Angiogenesi: basi molecolari ed implicazioni terapeutiche. May 25-27, 2015. Certosa di Pontignano, Italy. Poster.

- Gallo S, Bonomi S, Giampietro C, Deflorian G, **Di Matteo A**, Pradella D, Dejana E, Ghigna C. Identification of a novel post-transcriptional regulator of angiogenesis. Joint national PhD meeting, Società SIBBM e ABCD. October 10-12, 2013. Pesaro, Italy. Poster.

- Gallo S, Giampietro C, Bonomi S, Deflorian G, **Di Matteo A**, Belloni E, Quaranta V, Pradella D, Biamonti G, Dejana E and Ghigna C. "The alternative splicing factor Nova2 is a novel regulator of angiogenesis". Joint IGM Meeting. October 3, 2014. Pavia, Italy. Oral communication.

- Bonomi S, **Di Matteo A**, Buratti E, Baralle FE, Ghigna C, Biamonti G. 2013. "HnRNP A1 controls a splicing regulatory circuit promoting mesenchymal-to-epithelial transition (MET)". SIBBM Frontiers in Molecular Biology Seminar 2013. June 5-7, 2013. Pavia, Italy. Poster.

- Bonomi S, **Di Matteo A**, Buratti E, Baralle FE, Ghigna C, Biamonti G. 2013. "HnRNP A1 controls a splicing regulatory circuit promoting mesenchymal-to-epithelial transition (MET)". Convegno congiunto IGM. May 14, 2013. Bologna, Italy. Oral communication.

- Bonomi S, **Di Matteo A**, Buratti E, Baralle FE, Ghigna C, Biamonti G. 2012. "HnRNPA1 inhibits the production of Δ Ron isoform promoting mesenchymal to epithelial transition". 1st Post-EURASNET Symposium. March 24-27, 2012. Trieste, Italy. Oral communication.

Publications

Article

1. 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[#]. (2015). The alternative splicing factor Nova2 regulates vascular development and lumen formation. *Nat Commun.* **6**:8479. **IF. 11.47.**

2. Bonomi S, **Di Matteo A**, Buratti E, Cabianca DS, Baralle FE, Ghigna C, Biamonti G. (2013). HnRNP A1 controls a splicing regulatory circuit promoting mesenchymal-to-epithelial transition. *Nucleic Acids Res.* **41**: 8665-79. **IF. 8.808.**

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[#]. (2019). A Novel L1 isoform with angiogenic activity generated by NOVA2-mediated alternative splicing. *eLife.* 8. pii: e44305. **IF. 7.616.**

Review

Frisone P, Pradella D, **Di Matteo A**, Belloni E, Ghigna C, Paronetto MP. (2015). SAM68: Signal Transduction and RNA Metabolism in Human Cancer. *Biomed Res Int.* **2015**:528954. **IF. 1.579.**

Biamonti G, Amato A, Belloni E, **Di Matteo A**, Infantino L, Pradella D, Ghigna C. (2019). Alternative splicing in Alzheimer's disease. *Aging Clin Exp Res.* **IF:2.331.**

Chapter in book

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.* **2**:1-16.