

# ***Danila Di Meo, Ph.D.***

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**Phone:** +393275725398; **Date of birth:** 19/08/1992

**Nationality:** Italian



## **EDUCATION**

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**Ph.D. in Natural Science** (magna cum laude) (2017-2022)

Westfälische Wilhelms-Universität Münster, Institute of Integrative Cell Biology and Physiology (NRW, Germany)

Research group: *Molecular Neurobiology*, Prof. Dr. Andreas W. Püschel (PI)

Dissertation title: *Membrane and mitochondrial dynamics during neuronal polarization: novel functions for type 1 Pip5ks and Sad kinases.*

Part of the *CiM-IMPRS Graduate Program* (Cells in Motion Interfaculty Centre (CiM) and the International Max-Planck Research School (IMPRS))

**M.Sc. in Pharmaceutical Biotechnology** (2014-2016)

University of Perugia, Department of Chemistry, Biology and Biotechnology (Italy)

Research group: *Biochemistry and Molecular Biology*, Prof. Dr. Carla Emiliani (PI)

Dissertation title: *Everolimus treatment restores the migration capability of Tsc1 deficient neural stem cells by mTORC1 dependent pathway.*

Supervisor: Dr. Alessandro Magini and Prof. Dr. Emiliani Carla

**B.Sc. in Biotechnology** (2011-2014)

University of Perugia, Department of Chemistry, Biology and Biotechnology (Italy)

Research group: *Biochemistry and Molecular Biology*, Prof. Dr. Carla Emiliani (PI)

Dissertation title: *Tsc1<sup>-/-</sup> neural stem cells production to obtain a Tuberous Sclerosis murine model.*

Supervisor: Dr. Alessandro Magini

## **WORK EXPERIENCES**

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**Postdoctoral Researcher** (Dec 2022-present)

**European Laboratory for Non-Linear Spectroscopy (LENS), Sesto Fiorentino, Italy**

*Project:* Ricostruzione 3D ad alta risoluzione della neuroanatomia del cervello umano attraverso tecniche microscopiche avanzate. Progetto Human Brain Ente Cassa di Risparmio di Firenze

*Research Group:* Biophotonics, Prof. Francesco Saverio Pavone (PI).

Development and optimization of tissues optical clearing and labeling methods for volumetric 3D reconstruction of large areas of post-mortem human brain using advanced microscopy techniques such as multi-photon and light sheet fluorescence microscopy.

**Postdoctoral Researcher**

(May 2022-Oct 2022)

**Institute of Integrative Cell Biology and Physiology, Westfälische Wilhelms-Universität Münster, Germany**

*Research Group:* Molecular Neurobiology, Prof. Dr. Andreas W. Püschel (PI)

Analysis of the role of Type I Pip5ks during the establishment of neuronal polarity in developing hippocampal neurons using molecular and cellular biology techniques combined with confocal microscopy analysis.

**Research assistant**

(2016-2017)

**Department of Chemistry, Biology and Biotechnology, University of Perugia, Italy**

*Research Group:* Biochemistry and Molecular Biology, Prof. Dr. Carla Emiliani

Analysis of the mTORC1 pathway in a CNS-restricted Tuberous Sclerosis Complex disease (TSC) cell model.

## **PUBLICATIONS**

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**Di Meo, D.**, Ravindran P., Dhumale P., Püschel, A.W. (2021) *The balance of mitochondrial fission and fusion in cortical axons depends on the kinases SadA and SadB*. Cell Rep. 37(12):110141, doi: 10.1016/j.celrep.2021.110141.

Humpert, I., **Di Meo, D.**, Püschel, A.W., and Pietschmann, J.-F. (2021). *On the Role of Vesicle Transport in Neurite Growth: Modelling and Experiments*. Math Biosci 338:108632; doi: 10.1016/j.mbs.2021.108632.

Jin, J., Ravindran, P., **Di Meo, D.**, and Püschel, A.W. (2019). *Igf1R/InsR function is required for axon extension and corpus callosum formation*. PLoS One 14(7): e0219362; doi: 10.1371/journal.pone.0219362.

Magini, A., Polchi, A., **Di Meo, D.**, Buratta, S., Chiaradia, E., Germani, R., Emiliani, C., and Tancini, B. (2019). *Curcumin analogue C1 promotes hex and gal recruitment to the plasma membrane via mTORC1-independent TFEB activation*. Int. J. Mol. Sci. 20(6):1363; doi: 10.3390/ijms20061363.

Polchi, A., Magini, A., **Di Meo, D.**, Tancini, B., and Emiliani, C. (2018). *mTOR signaling and neural stem cells: The tuberous sclerosis complex model*. Int. J. Mol. Sci. 19(5):1474, doi: 10.3390/ijms19051474.

Magini, A., Polchi, A., **Di Meo, D.**, Mariucci, G., Sagini, K., De Marco, F., Cassano, T., Giovagnoli, S., Dolcetta, D., and Emiliani, C. (2017). *TFEB activation restores migration ability to Tsc1-deficient adult neural stem/progenitor cells*. Hum. Mol. Genet. 26(17):3303- 3312, doi: 10.1093/hmg/ddx214.

**Number of citations: 64**

**h-index: 6**

**i10-index: 3**

## CONFERENCES

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Dynamic exchanges at the plasma membrane, CRC 1348 meeting (Münster, 8-10 June 2022) Oral presentation: *A novel function of Sad kinases in regulating the balance of mitochondrial fission and fusion in cortical axons through Tau phosphorylation.*

EMBO Workshop Axons 2021: Structure and Function (Virtual, 4-7 October 2021). Oral presentation: *SadA and SadB kinases modulate the mitochondrial fission and fusion balance in cortical axons.*

14th Interdisciplinary Graduate School Meeting, Breaking the Frontiers: Modern Perspectives in Life Science (Münster, 30 September - 2 October 2020). Poster presentation: *Role of Pip5k1s in neuronal polarization.*

13th Interdisciplinary Graduate School Meeting, Horizons in biology: beyond the biological borders (Münster, 24-26 April 2019). Organizing team

International TSC research conference (Lisbon, 3-5 November 2016). Poster presentation: *Everolimus treatment reduces proliferation of TSC1-deficient adult neural stem/progenitor cells and restores their migration capability.*

## TEACHING EXPERIENCE

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### **Bachelor thesis supervision:**

- Martina Orlandi, B.Sc. in Biology, University of Florence, Italy
- Louisa Brieskorn, B.Sc. in Biosciences, Westfälische Wilhelms-Universität Münster, Germany

### **Tutor for M.Sc. in Biosciences, practical modules** (Westfälische Wilhelms-Universität Münster, Germany):

- Winter semester 2021/22 and 2019/20: Live cell imaging methods for the analysis of cellular processes.
- Winter semester 2017/18: Molecular neurobiology.

## TECHNICAL EXPERTIES

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- Techniques of tissue optical clearing and immunolabelling for post-mortem human brain specimens.
- Culture and transfection of primary neurons and mammalian cell lines with genetically encoded fluorescent probes.
- *Ex vivo* mouse brain electroporation and organotypic slice cultures.
- Confocal microscopy, TIRF microscopy and Light sheet fluorescence microscopy.
- SDS-PAGE, IP and pulldown assay, DNA, RNA and protein extraction, PCR, qPCR, vector design and cloning.
- Extensive knowledge of ImageJ, GraphPad Prism, Inkscape, Huygens, Microsoft office.

## LANGUAGES

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**Italian:** Native Language

**English:** Fluent

## REFERENCES

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Prof. Dr. Andreas W. Püschel

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