

MARINA VIDAKI, Ph.D.

PERSONAL INFORMATION

Name: Marina
Surname: Vidaki
Nationality: Greek
Current address: University of Crete, Faculty of Medicine, Division of Basic Sciences, Voutes, Heraklion
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CURRENT POSITION

University of Crete, Faculty of Medicine & IMBB-FORTH, Heraklion, Greece

2019-current: Assistant Professor of Cellular-Molecular Biology, Principal Investigator

Research Direction: Cellular/Molecular Neuroscience, Mechanisms of Axon Development and Regeneration

RESEARCH INTEREST

The main goal of my research is to understand how neuronal connectivity in the nervous system (NS) is established and repaired. To this end, my lab studies axon growth and guidance, both during development and regeneration, focusing on mechanisms of local mRNA translation. Defective local mRNA translation is implicated in numerous neurodevelopmental disorders, as well as in the diminished capacity of the adult central NS (CNS) to regenerate. We study local molecular components and regulation of translation in developing and adult CNS and peripheral NS (PNS) axons, their dynamic alterations during guidance and regeneration, and whether they can be manipulated to regulate axonal behavior

RESEARCH POSITIONS

Massachusetts Institute of Technology, Cambridge, USA

2015-2019: Research Scientist

Role of cytoskeleton-associated proteins in mRNA biology and localized protein synthesis during neuronal development.

(Laboratory of Prof. F. Gertler).

2010-2015: Postdoctoral Associate

Cellular and Molecular mechanisms of axon guidance and neuronal development.

(Laboratory of Prof. F. Gertler)

EDUCATION

University of Crete, Heraklion, Crete, Greece

2005-2010: PhD in Developmental Neuroscience, Faculty of Medicine

“Intracellular & extracellular signals in the development of GABAergic interneurons”.

- Scientific supervisor: Prof. Domna Karagogeos
- 2003-2005:** **MSc in Molecular Biology & Biomedicine**, Department of Biology & Faculty of Medicine
 “Expression pattern of the maternally imprinted gene *Gtl2* in the forebrain, during embryonic development and adulthood”.
 Scientific supervisor: Prof. Domna Karagogeos
- 1999-2003:** **BSc in Biology**, Department of Biology
 “Phenotypic analysis of the cerebellum of TAG-1 *-/-* mice, during postnatal development and adulthood”.
 Scientific supervisor: Prof. Domna Karagogeos

Languages

- Greek:** Native speaker
English: Fluent (Cambridge Proficiency in English/Teaching permit)
German: Basic (Goethe Zertificat A1)

PUBLICATIONS

Peer-Reviewed Articles

1. Kastriti ME, Stratigi A, Theodosiou M, Savvaki M, **Vidaki M**, Theodorakis K, Karagogeos D. (2019). “Telencephalic ablation of CNTN2+ pyramidal neurons during development results in decreased neocortical size and axonal tract defects in the mouse brain”. **Front Cell Neurosci.** 13:454
2. **Vidaki M**^{*}, Drees F, Saxena T, Lanslots E., Taliaferro MJ, Tatarakis A., Burge CB, Wang, E, Gertler FB^{*}. (2017). “A requirement for Mena, an actin regulator, in local mRNA translation in developing axons”. **Neuron**, 95(3): 608-622. *Co-corresponding authors, Highlighted Article
3. McConnell RE, vanVeen JE, **Vidaki M**, Kwiatkowski AV, Meyer AS, Gertler FB. (2016). “A requirement for filopodia extension towards Slit during Robo-mediated axon repulsion”. **J Cell Bio.** 213(2): 261-74
4. Taliaferro MJ, **Vidaki M**, Oliveira R, Olson, S, Zhan L, Graveley BR, Gertler FB, Swanson MS, Burge CB. (2016). “Distal alternative last exons localize mRNAs to neural projections”. **Mol Cell.** 61(6): 821-33
5. Bastakis G, Savvaki M, Stamatakis A, **Vidaki M**, Karagogeos D. (2015). “TAG-1 deficiency results in olfactory dysfunction due to impaired migration of mitral cells”. **Development** 142(24): 4318-28
6. Schmidt ER, Brignani S, Adolfs Y, Lemstra S, Demmers J, **Vidaki M**, Donahoo AL, Lilliväli K, Vasar E, Richards LJ, Karagogeos D, Kolk SM, Pasterkamp RJ. (2014). “Subdomain-mediated axon-axon signaling and chemoattraction cooperate to regulate afferent innervation of the lateral habenula”. **Neuron** 83(2): 372-87
7. Tivodar S, Kalemaki K, Kounoupa Z, **Vidaki M**, Theodorakis K, Denaxa M, Kessarar N, de Curtis I, Pachnis V, Karagogeos D. (2015). “Rac-GTPases Regulate Microtubule Stability and Axon Growth of Cortical GABAergic Interneurons”. **Cer Cortex** 25(9): 2370-82
8. **Vidaki M**, Tivodar S, Doulgeraki K, Kessarar N, Pachnis V, Karagogeos D. (2012). “Rac1-dependent cell cycle exit of MGE precursors & GABAergic interneuron migration to the cortex”. **Cer Cortex** 22(3): 680-92
9. Pinheiro EM, Zhigang X, Norovich AL, **Vidaki M**, Tsai LH, Gertler FB (2011). “A molecular switch between gliophilic and axonophilic neuronal migration”. **Nat Cell Biol** 13(8): 989-95
10. McLaughlin D, **Vidaki M**, Karagogeos D. (2008). “Localization of CRMP5 mRNA by in situ hybridisation during development of the mouse forebrain”. **Neurosci Lett** 432(2): 117-20
11. McLaughlin D^{*}, **Vidaki M**^{*}, Renieri E, Karagogeos, D. (2006). “Expression pattern of the maternally imprinted gene *Gtl2* in the forebrain during embryonic development and adulthood”. **Mechanisms of Development GEP** 6(4):394-9. *equal contribution
12. Denaxa M, Kyriakopoulou K, Theodorakis K, Trichas G, **Vidaki M**, Takeda Y, Watanabe K, Karagogeos D. (2005). “The adhesion molecule TAG-1 is required for proper migration of the superficial migratory stream in the medulla but not of cortical interneurons”. **Developmental Biology** 288(1): 87-99

Review Articles

13. Katidou M *, **Vidaki M** *, Strigini M, Karagogeos D. (2008). “The Immunoglobulin superfamily of neuronal cell adhesion molecules: Lessons from animal models and correlation with human disease”. **Biotechnol. J.** 3: 1564-80, Review. *equal contribution

Published Conference Proceedings

14. Taliaferro MJ, **Vidaki M**, Gertler FB, Burge CB. (2015). “Identification of mRNA localization motifs through cell fractionation and alternative splicing analysis”. **FASEB J.** 29: 562.30
15. Savvaki M, Bastakis GG, Stamatakis A, **Vidaki M**, Karagogeos D. (2015). “Numbers Matter: A mouse model with reduced mitral cells and olfactory system dysfunction”. **Chemical Senses** 40 (7): 628-628
16. McConnell RE, Van Veen JE, **Vidaki M**, Meyer AS, Kwiatkowski AV, Gertler FB. (2015). “SLIT stimulates filopodium formation and axon elongation to mediate repulsive axon guidance”. **Mol Biol of Cell** 26
17. Tivodar S, **Vidaki M**, Tybulewicz V, Kessarar N, Pachnis V, Karagogeos D. (2011). “The role of small Rho-GTPases in cortical GABAergic interneuron development”. **J Neurochem** 118, 81-82

INVITED TALKS

- 2019:** National Meeting of the Hellenic Society for Neuroscience, Heraklion, Greece
- 2018:** Centre for Psychiatry and Neuroscience (CPN), Université Paris Descartes, Paris, France
- 2018:** Hertie Institute for Clinical Brain Research, University of Tübingen, Tübingen, Germany
- 2018:** European Molecular Biology Laboratory (EMBL), Rome, Italy
- 2017:** American Society for Cell Biology, ASCB/EMBO Meeting, Philadelphia, PA, USA
- 2017:** Neuroscience Center (HiLife), University of Helsinki, Helsinki, Finland
- 2016:** The D. Koch Institute for Integrative Cancer Research at MIT, Cambridge, MA, USA
- 2016:** Institute of Molecular Biology and Biotechnology-FORTH, Heraklion, Greece
- 2013:** International Society for Neurochemistry Meeting, Chania, Greece
- 2013:** The Picower Institute Brain Lectures, MIT, Cambridge, MA, USA
- 2008:** National Meeting of the Hellenic Society for Neuroscience, Athens, Greece

PATENT APPLICATIONS

- **Vidaki M** and Gertler FB, “Methods of modulating protein expression from the Mena-ribonucleoprotein complex in cells”, filed June 21, 2017, U.S. Provisional Pat. Ser. No. 1515028_109USO

VISITING RESEARCHER

- 2008:** Visiting EMBO Fellow at the Laboratory of Dr. N. Kessarar, Wolfson Institute for Biomedical Research, University College London, UK. Construction of *Tag1*^{loxP-GFP-loxP-DTA} transgenic mouse line (Bastakis et al, 2015; Kastri et al, *in prep*)
- 2007:** Visiting scientist at the Laboratory of Dr. N. Kessarar, Wolfson Institute for Biomedical Research, University College London, UK. Construction of *Tag1*^{Cre} transgenic mouse line (Schmidt et al, 2014)
- 2005:** Visiting trainee at the Laboratory of Prof. O. Marin, Instituto de Neurociencias de Alicante, Alicante, Spain. Training on Neuronal transplants, Organotypic brain slices, Slice Electroporation, 2D- and 3D-primary cortical neuron cultures

FUNDING

- **2018-2021: Hellenic Foundation of Research and Innovation (ΕΑΙΔΕΚ)**
“Local Translation during Axonal Development and Regeneration”, proposal ID# 2343 (€180000)

FELLOWSHIPS / AWARDS

- 2013:** International Society for Neurochemistry, travel award for the ISN & FENS School on “Local Protein Synthesis in Axons and Dendrites”, Kolymbari, Crete, Greece
- 2009:** Hellenic Society for Neuroscience Fellowship for summer school on Neuroglial interactions: From womb to tomb in health and disease, Izmir, Turkey
- 2008:** Manasakis Graduate Fellowship of the University of Crete
- 2008:** EMBO (European Molecular Biology Laboratory) Short Term Fellowship at the laboratory of Dr. N. Kessaris, Wolfson Institute for Biomedical Research, University College London, UK
- 2006:** Best Poster Presentation Award, 20th National Conference of the Hellenic Society for Neuroscience, Heraklion, Crete, Greece

TEACHING EXPERIENCE

- **2019-current:** Ass Prof University of Crete, Medical School,
Undergraduate courses: Biology A (1st Semester)
Graduate program: Molecular Biology-Biomedicine, University of Crete & IMBB-FORTH
Graduate program: Neurosciences, University of Crete & IMBB-FORTH
- **2017:** Kaufman Teaching Certificate Program (KTCP) at MIT
- Mentoring MSc, Graduate and Rotation Students and supervising technicians
- **2010-2018:** During my postdoc I supervised 1 Research Assistant and mentored 2 PhD students, 2 rotating students, and 1 visiting student (designing experiments, teaching techniques, editing theses and manuscripts)
- **2005-2010:** During my PhD, I supervised 5 MSc students and 1 undergraduate student (teaching techniques, designing experiments, suggesting and discussing literature, editing theses)
- **2005:** Instructor of Laser Scanning Confocal Microscopy, seminars for “Modern Light Microscopy Techniques in Biomedical Research”, University of Crete
- **2004:** Teaching Assistant, Microbiology and Molecular Biology laboratory course, University of Crete (preparation and instruction of laboratory courses for 2nd year Biology undergraduate students)