

BIOGRAPHICAL SKETCH

NAME Ardiles, Álvaro Oscar		POSITION TITLE Associate professor	
LAST NAME aardiles			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Pontificia Universidad Católica de Valparaíso	B.S.	09/06	Biochemistry
Universidad de Valparaíso	Ph.D.	04/12	Neuroscience
Universidad de Valparaíso	Postdoc		Neurobiology

Positions and Honors

Positions and Employment

- 2011-12 Lecturer professor at facultad de Ciencias Biológicas, Universidad Andres Bello.
 2012 Postdoctoral Fellow at ECOVIS lab., Interdisciplinary Center for Neuroscience, Universidad de Valparaíso.
 2013-2015 Postdoctoral Fellow at Intercellular Communication Lab., Interdisciplinary Center for Neuroscience, Universidad de Valparaíso.
 2015- Young Research Associate, Interdisciplinary Center for Neuroscience, Universidad de Valparaíso.
 2016- Associate Professor. School of Medicine, Universidad de Valparaíso.

Other Experience and Professional Memberships

- 2004-06 Research assistant, Fondecyt #1020812 (PI: Cárdenas, AM).
 2005 Visiting student, departamento de Fisiología Médica y Biofísica, Universidad de Sevilla.
 2006 Research assistant, Anillos ACT-45, (PI: Schmachtenberg, O).
 2008 Visiting student, Mind/Brain Institute, Johns Hopkins University, USA. (Alfredo Kirkwood's Lab)
 2008- Member, Neurotoxicity society, USA
 2009 Visiting student, Centro de Regulación Celular y Patología Joaquín V. Luco (CRCP), facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, Chile. (Nibaldo Inestrosa's Lab)
 2010 Visiting student, Mind/Brain Institute, Johns Hopkins University, USA. (Alfredo Kirkwood's Lab)
 2014- Member, Chilean Neuroscience Society
 2015-2016 Associate Editor, Journal of Neurology and stroke
 2016-2017 Guest Editor, Neural plasticity (special issue on molecular and cellular mechanisms of synaptopathies)

Honors

- 2007 Fellow MECESUP UVA0603
 2008 Fellow CONICYT 21080345
 2009 Fellow CONICYT AT24091109
 2012 Postdoctoral Fellow ICM-MILENIO PO9-022-F
 2013 Postdoctoral Fellow FONDECYT 3130759

Recent Peer-reviewed Publications (Last 5 years)

Original Reseacr Papers

1. Jorge Arriagada-Díaz, Lorena Prado-Vega, Ana M. Cárdenas Díaz, **Alvaro O. Ardiles** and Arlek M. Gonzalez-Jamett. Dynamin Superfamily at Pre- and Postsynapses: Master Regulators of Synaptic Transmission and Plasticity in Health and Disease. *The Neuroscientist* 1–18. <https://doi.org/10.1177/1073858420974313>.
2. Francisca García, Pedro Lobos, Alejandra Ponce, Karla Cataldo, Daniela Meza, Patricio Farías, Carolina Estay, Felipe Oyarzún, Rodrigo Herrera-Molina, Andrea Paula-Lima, **Álvaro O. Ardiles**, Cecilia Hidalgo, Tatiana Adasme and Pablo Muñoz. (2020). Astaxanthin Counteracts Excitotoxicity and Reduces the Ensuing Increases in Calcium Levels and Mitochondrial Reactive Oxygen Species Generation. *Mar. Drugs* 2020, 18(6), 335; <https://doi.org/10.3390/md18060335>.
3. Pablo Muñoz, **Álvaro O. Ardiles**, Boris Pérez, Cristián Nuñez, Andrea Paula-Lima, Christian González-Billault, Yolanda Espinosa-Parrilla. (2020). Redox modifications in synaptic components as biomarkers of cognitive status, in brain aging and disease. *Mech. Ageing. Dev.* 189:111250. doi: 10.1016/j.mad.2020.111250.
4. Carolina Flores-Muñoz, Bárbara Gómez, Elena Mery, Ivana Gajardo, Paula Mujica, Claudio Córdova, Daniela López-Espíndola, Claudia Durán-Aniotz, Claudio Hetz, Pablo Muñoz Arlek González-Jamett, and **Álvaro O. Ardiles**. (2020). Acute Pannexin 1 blockade mitigates early synaptic plasticity deficits in Alzheimer's disease model. *Front. Cell. Neurosci.* 14:46. doi: 10.3389/fncel.2020.00046
5. Lily Yu-Li Chang, Alvaro O. Ardiles, Cheril Tapia-Rojas, Joaquín Araya, Nibaldo C. Inestrosa, Adrian G Palacios and Monica Liliana Acosta. (2020). Evidence of synaptic and neurochemical remodeling in the retina of ageing degus. *Front. Neurosci.* 14:161. doi: 10.3389/fnins.2020.00161
6. Gajardo I, Salazar CS, Lopez-Espíndola D, Estay C, Flores-Muñoz C, Gonzalez-Jamett AM, Martínez AD, Muñoz P, and **Ardiles AO**. (2018). Lack of Pannexin 1 alters synaptic GluN2 subunit composition and spatial reversal learning in mice. *Front Mol Neurosci.* 11: 114.
7. **Ardiles AO**, Grabrucker AM, Scholl FG, Rudenko G, Borsello T. (2017). Molecular and Cellular Mechanisms of Synaptopathies. *Neural Plast.* 2017:2643943.
8. Claudia Duran-Aniotz, Victor Hugo Cornejo, Sandra Espinoza, **Álvaro O. Ardiles**, Danilo B. Medinas, Claudia Salazar, Andrew Foley, Ivana Gajardo, Peter Thielen, Takao Iwawaki, Wiep Scheper, Claudio Soto, Adrian G. Palacios Jeroen J. M. Hoozemans, and Claudio Hetz. (2017). IRE1 signaling exacerbates Alzheimer's disease pathogenesis. *Acta Neuropathol.* 134 (3):489–506.
9. Pablo Muñoz, Carolina Estay, Paula Díaz, Claudio Elgueta, **Álvaro O. Ardiles**, and Pablo A. Lizana. (2016). Inhibition of DNA Methylation Impairs Synaptic Plasticity during an Early Time Window in Rats. *Neural Plast.* 2016:4783836
10. Salazar C, Valdivia G, **Ardiles AO**, Ewer J, Palacios AG. (2016). Genetic variants associated with neurodegenerative Alzheimer disease in natural models. *Biol Res.* 49:14.
11. Gabriela Martínez, René L. Vidal, Pablo Mardones, Felipe G. Serrano, **Alvaro O. Ardiles**, Craig Wirth, Claudia Molina, Pamela Valdés, Peter Thielen, Cecilia Hidalgo, Bernard L. Schneider, Bredford Kerr, Jose Luis Valdés, Adrian G. Palacios, Nibaldo C. Inestrosa, Laurie H. Glimcher and Claudio Hetz. (2016). Regulation of memory formation by the transcription factor XBP1. *Cell reports* 14:1-13.
12. Hui Huang, **Alvaro O. Ardiles**, Sunggu Wang, Gonzalo Valdivia, Min Baek, Adrian Palacios, Michela Gallagher and Alfredo Kirkwood. (2016). Metabotropic Glutamate Receptors Induce a Form of LTP Controlled by Translation and Arc Signaling in the hippocampus. *J. Neurosci.* 36:1723 –1729.

Chapters Books

1. Pablo Muñoz, Francisca García, Carolina Estay, Alejandra Arias, Cecilia Hidalgo and **Álvaro O. Ardiles** (2016). Redox Homeostasis in Neural Plasticity and the Aged Brain, Nutritional Deficiency, Dr. Pinar Erkekoğlu (Ed.), InTech, DOI: 10.5772/63931. Available from: <http://www.intechopen.com/books/nutritional-deficiency/redox-homeostasis-in-neural-plasticity-and-the-aged-brain>

Research Support

Ongoing Research Support

FONDECYT REGULAR 1201342. “Over-activation of Panx1 in neurons leads to intracellular Ca²⁺ overload and subsequent defects in neuronal cytoskeleton and signaling receptor trafficking supporting synaptic defects in an Alzheimer’s disease model”. PI

2020-2024 FONDECYT REGULAR 1200250. “Role of promigratory activation of VEGFR2 in the brain angiogenesis and its potential implication in learning and memory of offspring born to preeclampsia”. Co-PI

Completed Research Support

FONDECYT 3130759. Role of pannexin1 in synaptic physiology: 2013-15. This grant seeks to investigate the role of pannexin1 in synaptic function and plasticity in the hippocampus from mice.

INNOVA-CORFO 13IDL2-18271. 2013 – 2016. Obtención de astaxantina como agente anti-envejecimiento cerebral, a partir del descarte de la centolla (Co-Director).

FONDECYT 11150776. A novel role of Pannexin 1 channels in the synaptopathy associated to the soluble amyloid β -oligomers in Alzheimer’s disease: 2015-18. This grant seeks to investigate the signaling pathways involved in synaptotoxic effects of amyloid beta oligomers. PI

Programa de Atracción e Inserción de Capital Humano Avanzado, PAI 79150045 “Panexina 1: un nuevo actor en los mecanismos patológicos asociados a la enfermedad de Alzheimer”. PI

2016-2018 III Concurso IDeA en dos etapas (PI: Claudio Hetz). “Proteostaser-1: una terapia génica enfocada a disminuir la neurodegeneración y aumentar la función cognitiva en la enfermedad de Alzheimer”