

## Research profile of Rodrigo Herrera-Molina

### - Personal data

Rodrigo Herrera-Molina, PhD (BMSc.)  
Young Research Group Leader  
AG Neuronal and Synaptic Signals  
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### - Scientific career

#### Academic degrees:

2010 Doctor in Biomedicine (maximal honours), University of Chile.  
2004 MSc in Biochemistry (with excellence), University of Chile.  
2004 MSc in Pharmacy, University of Chile.

#### Academic appointments:

2018 – Currently Young Research Group Leader “AG Neuronal and Synaptic Signals”. LIN-Magdeburg, Germany  
2017 – Currently Invited Guest Scientist and Lecturer. University Bernardo O’Higgins, Santiago de Chile  
2015 – Currently Coordinator of the PhD student’s exchange between the Institute of Biomedical Sciences (ICBM), Universidad de Chile and the LIN-Magdeburg  
2014 – Currently Lecturer. Otto von Guericke University, Magdeburg  
Lecturer. Faculty of Medicine, Universidad de los Andes, Chile  
2012 - 2016 Postdoctoral Researcher. Leibniz Institute for Neurobiology (LIN)-Magdeburg, Germany

### - Current third-party funding

2017 – 2019 Collaborator. Bilateral collaborative grant “PrePlastic” granted by CONICYT-BMBF in Chile-Germany.  
2020 – 2022 Leader. LSA Fellow grant by the CBBS, Germany.  
2020 – 2022 Leader in Germany of the Multilateral collaborative grant Chile-Germany-USA granted by CONICYT. Chile.

### - Publications (2019 – 2014 only)

1. Vemula SK, Malci A, Junge L, Lehmann AC, Rama R, Hradsky J, Matute RA, Naumann M, Kreutz MR, Seidenbecher CI, Gundelfinger ED, **Herrera-Molina R** (2019) TRAF6 controls excitatory spinogenesis and excitation-inhibition balance through binding neuroplastin. *bioRxiv* doi: <https://doi.org/10.1101/768341>
2. Ilic K, Auer B, Mlinac-Jerkovic K, **Herrera-Molina R** (2019) Neuronal signalling by Thy-1 in nanodomains with specific ganglioside composition: Shall we open the door to a new complexity? *Front. Cell Dev. Biol.* doi: 10.3389/fcell.2019.00027.
3. Bruna B, Lobos P, **Herrera-Molina R**, Hidalgo C, Paula-Lima A, Adasme T (2018) The Signaling Pathways Underlying BDNF-Induced Nrf2 Hippocampal Nuclear Translocation Involve ROS, RyR-Mediated Ca<sup>2+</sup> Signals, ERK and PI3K. *BBRC* 20;505(1):201-207
4. Lang D, Schott BH, van Ham M, Morton L, Parlog A, Kulikovskaja L, **Herrera-Molina R**, Pielot R, Montag D, Jaensch L, Gundelfinger ED, Smalla KH, Dunay IR (2018) Chronic Toxoplasma-induced neuroinflammation is associated with distinct changes in the synaptic protein composition. *J Neuroinflammation* 15(1):216. doi: 10.1186/s12974-018-1242-1

5. Lagos-Cabr e R, Brenet M , D az J , P erez RD, P erey LA, **Herrera-Molina R**, Quest AFG, Leyton L (2018) Intracellular Ca<sup>2+</sup> increases and Connexin 43 hemichannel opening are necessary but not sufficient for Thy-1-induced astrocyte migration. *Int J Mol Sci* (19)(8). pii: E2179. doi: 10.3390/ijms19082179)
6. **Herrera-Molina R**, Mlinac-Jerkovic K, Ilic K, St ober F, Kumar Vemula S, Sandoval M, Jovanov Milosevic N, Simic G, Smalla KH, Goldschmidt J, Kalanj Bognar S, Montag D (2017) Neuroplastin deletion in glutamatergic neurons impairs selective brain functions and calcium regulation: implication for cognitive deterioration. *Scientific Report* 4;7(1):7273
7. Bhattacharya S\*, **Herrera-Molina R\***, Sabanov V, Ahmed T, Iscru E, St ober F, Richter K, Fischer KD, Angenstein F, Goldschmidt J, Beesley PW, Balschun D, Smalla KH, Gundelfinger ED, Montag D (2017) Genetically-induced retrograde amnesia of associative memories after neuroplastin ablation. *Biological Psychiatry* 81:124-135 (\***sharing first authorship**)
8. Lagos-Cabr e R, Alvarez A, Kong M, Burgos-Bravo F, C ardenas A, Rojas-Mancilla E, P erez-Nu ez R, **Herrera-Molina R**, Rojas F, Schneider P, Herrera-Marschitz M, Quest AFG, van Zundert B, Leyton L (2017)  $\alpha_v\beta_3$  Integrin regulates astrocyte reactivity. *J Neuroinflammation* 29;14(1):194
9. Korthalsa M, Langnaese K, Smalla KH, K ahne T, **Herrera-Molina R**, Handschuh J, Lehmann AC, Herbert I, Mamula D, Naumann M, Seidenbecher CI, Tedford K, Gundelfinger ED, Montag D, Fischer KD, Thomas U (2017) A complex of Neuroplastin and Plasma Membrane Calcium ATPase controls T cell activation. *Scientific Report* 21;7(1):8358
10. Maldonado H, Calderon C, Kobler O, Zuschratter W, Ramirez O, H artel S, Schneider P, Quest AFG, **Herrera-Molina R\***, Leyton L (2016) Integrin-induced changes in the Thy-1/CBP/Csk complex regulate the Src/RhoA/ROCK axis to alter the neuronal cytoskeleton. *BBA-Mol Cell Research* 1864(2):243-254 (\***co-corresponding author**)
11. **Herrera-Molina R**, Sarto-Jackson I, Montenegro-Venegas C, Heine M, Smalla KH, Seidenbecher CI, Beesley PW, Gundelfinger ED, Montag D (2014) Structure of excitatory synapses and GABA<sub>A</sub> receptor localization at inhibitory synapses are regulated by neuroplastin-65. *J Biol Chem.* 289:8973-88
12. Beesley PW, **Herrera-Molina R**, Smalla KH, Seidenbecher CI (2014) The neuroplastin adhesion molecules: key regulators of neuronal plasticity and synaptic function. *J Neurochem* 131(3):268-83

**- Supervision of students (MSc, MD, and PhD only)**

- 2017 – Currently Ayse Malci, PhD thesis  
 2015 – Currently Xiao Lin, PhD thesis

**Former students**

- 2018 Benedikt Auer MSc and Lennart Junge, M.D.  
 2017 Sampath Vemula, PhD  
 2016 Ting Jiao, MSc and Abaya Prakash, MSc  
 2015 Horacio Maldorado, PhD  
 2014 Ramy Ramya, MSc

**- Awards:**

- 2016 Junkers Award of the State of Saxony-Anhalt – Category “Most innovative approaches in basic research” (2<sup>nd</sup> place).  
 2010 Medal of Honour University of Chile – Excellence in PhD work.