

## Curriculum Vitae



Juliana M Rosa, PhD

Principal Investigator

Experimental Neurophysiology and Neuronal Circuits Group

(Lab i1-05; office i1-08)

Hospital Nacional de Paraplégicos, Toledo, Spain

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Researcher ID: P-6969-2017

### Academic degrees:

Ph.D. in Pharmacology, Autonomous University of Madrid, Medicine School (Spain). 2011

Master in Neuroscience, Federal University of Santa Catarina (Brazil). 2005

Degree in Pharmacy, University of the South of Santa Catarina (Brazil). 2002

### RESEARCH AND PROFESSIONAL EXPERIENCE.

- Current Position: Principal Investigator (*Ramón y Cajal*), Experimental Neurophysiology and Neuronal Circuits Lab, Hospital Nacional de Paraplégicos, SESCAM, Toledo, Spain.
- 2018 - 2021: *Marie Curie Research Fellow*, Hospital Nacional de Paraplégicos, Toledo, Spain.
- 2017 - 2018: *Research Fellow* Stop Fuga de Cerebros, IIS Hospital Universitario La Princesa, Madrid, Spain.
- 2014 - 2016: *Research Fellow*, Hellen Wills Neuroscience Institute, Dept of Molecular and Cell Biology, University of California, Berkeley, USA
- 2013 - 2013: *Research Associate* (Wellcome Trust), Laboratory of Molecular Biology, Medical Research Council (LMB – MRC), Cambridge, UK.
- 2011 - 2013: *Marie Curie Research Fellow*, Laboratory of Molecular Biology, Medical Research Council (LMB – MRC), Cambridge, UK.

- 2008 - 2008: *Visiting Trainee*, Ministry of Education and Science, Spanish Government, Neuroscience Institute, Alicante, Spain.
- 2005 - 2011: *PhD Student*, FPU fellowship, Universidad Autónoma de Madrid, Madrid.
- 2003 - 2005: *Master student*, CAPES fellowship, Universidade Federal de Santa Catarina, Brazil
- 2000 - 2002: *Undergraduate student trainee*, Scientific Initiation Fellowship, Department of Toxicology and Pharmacology at the Universidade do Sul de Santa Catarina, Brazil.

### ***Maternity break and other non-scientific professional activities***

- Aug 2018 – Feb 2019: Maternity leave
- Feb 2016 – Oct 2017: Maternity leave
- Sep 2002 – Feb 2003: Responsible Pharmacist, Brazil
- Sep 2002 – Dec 2002: High School Chemistry Teacher, Brazil

### **MAIN RESEARCH LINES**

- 1) Role of astrocytes and astrocyte-neuron interaction in the modulation of cortical sensory processing.
- 2) Glial cells as therapeutic targets to repair neural circuits following spinal cord injury and traumatic brain injury.

### **SCIENTIFIC PUBLICATIONS:**

#### 2021

1. **Rosa, JM\***; Farré-Alins, V; Ortega, MC; Navarrete, M; Lopez-Rodriguez, A; Palomino-Antolin, A; Fernandez-Lopez, E; Decouty, C; Narros-Fernández, P; Vila-del Sol, V; Clemente, D; Egea, Javier\*. TLR4-pathway impairs synaptic number and cerebrovascular functions through astrocyte activation following traumatic brain injury. *British Journal of Pharmacology*, DOI: 10.1002/BPH.15488, \*corresponding (**D1, IF: 7.7**)
2. Farre-Alins V., Palomino-Antolin A., Narros-Fernandez P. et al. Serum Amyloid A1/Toll-Like Receptor-4 Axis, an Important Link between Inflammation and Outcome of TBI Patients. *Biomedicines* 2021, 9(6), 599; <https://doi.org/10.3390/biomedicines9060599> (**Q1, IF: 4,717**)

#### 2020

3. Zaforas, M\*; **Rosa, JM\***; Alonso-Calvino, E; Fernandez-Lopez, E; Miguel-Quesada, C; Oliviero, A; Aguilar, J. (1/7). 2020. Cortical layer-specific modulation of neuronal activity after sensory deprivation due to spinal cord injury. *preprint bioRxiv* DOI:10.1101/2020.12.28.424612
4. Dafre, AL; **Rosa, JM**; Rodrigues, ALS; Cunha, MP. Multiple cellular targets involved in the antidepressant-like effect of glutathione. *Chemico-Biological Interactions*. DOI:10.1016/j.cbi.2020.109195 (**Q3, IF: 2.57**)

## 2019

5. Parada E, Casas AI, Palomino-Antolin A, Gomez\_Rangel V, Rubio-Navarro A, Farre-Alins V, Narros-Fernandez P, Guerrero-Hue M, Moreno JA, **Rosa JM**, Hernandez-Garcia B, Egea J. Early toll-like receptor 4 blockade reduces ROS and inflammation triggered by microglial pro-inflammatory phenotype in rodent and human brain ischaemia models. *British Journal of Pharmacology*. DOI: 10.1111/bph (**D1, IF: 7.7**)

## 2016

6. **Rosa JM**, Ruhle S, Ding H, Lagnado L. Crossover Inhibition Generates Sustained Visual Responses in the Inner Retina, *Neuron* 90(2):308-19. DOI: 10.1016/j.neuron.2016.03.015 (**D1, IF: 14.4**)

7. **Rosa JM**, Morrie RD, Baertchs HC, Feller M. Contributions of Rod and Cone Pathways to Retinal Direction Selectivity Through Development, *The Journal of Neuroscience* 36(37): 9683-9695. DOI: 10.1523/JNEUROSCI.3824-15.2016 (**Q1, IF: 6.074**)

## 2015

8. **Rosa JM**, Bos R, Sack GS, Fortuny C, Agarwal A, Bergles DE, Flannery JG, Feller M. Neuron-glia interaction in developing retina mediated by neurotransmitter spillover, *eLife* 10.7554. DOI: 10.7554/eLife.09590 (**D1, IF: 8.28**)

9. Hamby A, **Rosa JM**, Hsu CH and Feller MB. CaV3.2KO mice have altered retinal waves but normal direction selectivity. *Vis Neurosc* 32:E003. DOI: 10.1017/S0952523814000364 (**Q3, IF: 1.94**)

## 2014

10. **Rosa JM** and Feller MB. Neurodevelopment: A novel role for activity in shaping retinal circuits. *Current Biology* 24(19):PR964-6. DOI: 10.1016/j.cub.2014.09.002 (**D1, IF: 9.57**)

## 2013

11. Esposti F, Johnston J, **Rosa JM**, Leung K, Lagnado L. Olfactory stimulation selectively modulates OFF pathway in the zebrafish retina. *Neuron* 79(1):97-110. DOI: 10.1016/j.neuron.2013.05.001 (**D1, IF: 14.25**)

12. **Rosa JM**, Dafre AL, Rodrigues AL. Antidepressant-like responses in the forced swimming test elicited by glutathione and redox modulation. *Behav Brain Res* 253C:165-172 DOI: 10.1016/j.bbr.2013.07.009 (**Q1, IF: 3.39**)

## 2012

13. **Rosa JM**, Nanclares C, Orozco A, Colmena I, de Pascual R, García AG, Gandía L. Regulation by L-type Calcium Channels of Endocytosis: An Overview *J Mol Neurosci* 48(2):360-7. DOI: 10.1007/s12031-012-9786-5 (**Q3, IF: 2.67**)

## 2011

14. **Rosa JM**, Conde M, Nanclares C, Orozco A, Colmena I, de Pascual R, García AG, Gandía L.

Paradoxical facilitation of exocytosis by inhibition of L-type calcium channels of bovine chromaffin cells. *Biochem Biophys Res Commun* 410(2):307-11. DOI: 10.1016/j.bbrc.2011.05.138 (**Q2, IF: 2.98**)

15. **Rosa JM**, Torregrosa-Hetland CJ, Colmena I, Gutiérrez LM, García AG, Gandía L. Calcium entry through slow-inactivating L-type calcium channels preferentially triggers endocytosis rather than exocytosis in bovine chromaffin cells. *Am J Physiol Cell Physiol* 301(1):C86-98. DOI: 10.1152/ajpcell.00440.2010 (**Q1, IF: 4.125**)

16. Pascual R, Colmena I, Rios C, **Rosa JM**, Correa-Leite PE, Lima-Araújo KG, Ferreira VF, Rocha DR, Gonzaga DTG, García AG, Santos WC, Gandía L. Augmentation of catecholamine release elicited by an *Eugenia punicifolia* extract in chromaffin cells. *Brazilian Journal of Pharmacognosy* v.22, p.1 - 12. DOI: 10.1590/S0102-695X2011005000191

## 2010

17. **Rosa JM**, Gandía L, García AG. Permissive role of sphingosine on calcium-dependent endocytosis in chromaffin cells. *Pflugers Arch* 460(5):901-14. DOI: 10.1007/s00424-010-0861-x (**Q1, IF: 4.98**)

18. Franco JL, Trevisan R, Posser T, Trivella DB, Hoppe R, **Rosa JM**, Dinslaken DF, Decker H, Tasca CI, Leal RB, Marques MR, Bainy AC, Dafré AL. Biochemical alterations in caged Nile tilapia *Oreochromis niloticus*. *Eco Env Safety* 24. DOI: 10.1016/j.ecoenv.2010.03.002

## 2009

19. **Rosa JM**, Gandía L, García AG. Inhibition of N and PQ calcium channels by calcium entry through L channels in chromaffin cells. *Pflugers Arch* 458(4):795-807. DOI: 10.1007/s00424-009-0662-2 (**Q1, IF: 4.98**)

20. Darios F, Wasser C, Shakirzyanova A, Giniatullin A, Goodman K, Bravo JLM, Raingo J, Jorgačevski J, Kreft M, Zorec R, **Rosa JM**, Gandía L, Gutiérrez LM, Giniatullin R, Binz T, Kavalali ET and Davletov B. Sphingosine targets synaptobrevin and activates synaptic vesicle exocytosis. *Neuron* 62, 683–694 DOI: 10.1016/j.neuron.2009.04.024 (**D1, IF: 14.25**)

## 2007

21. **Rosa JM**, de Diego AMG, Gandía L, García AG. L-type calcium channels are preferentially coupled to endocytosis in bovine chromaffin cells. *Bioch Biophys Res Comm* 357:834–839. DOI: 10.1016/j.bbrc.2007.03.207 (**Q2, IF: 2.98**)

## 2006

22. Meotti FC, **Rosa JM**, Brocardo PS, Balz D, Waltrick AP, Bagio A, Comeli E, Dafre AL, Rodrigues ALS, Santos ARS. Hepatoprotective effect of crude extract from *Wedelia paludosa* (Asteraceae) on the hepatotoxicity induced by paracetamol in mice. *J Pharm Pharmacol* 58(1):137-42. DOI: 10.1211/jpp.58.1.0017 (**Q3, IF: 1.83**)

## 2005

23. Rodrigues ALS, **Rosa JM**, Goulart EC, Rosa LS, Gonçalves RM, Corrêa R, Santos ARS. Antidepressant and antinociceptive actions of 4-(4'-chlorophenyl)-6-(4''-methylphenyl)-2-hydrazinepyrimidine Mannich base in mice. *Pharm Bioch Behav* Sep;82(1):156-62. DOI:

10.1016/j.pbb.2005.08.003 (Q3, IF: 2.51)

## **PATENTS**

1. Inventors: Farre-Alins, V; Palomino-Antolin, A; Narros-Fernandez, P; Rosa, JM; Lagares, A; Egea, J. P202031194.

Método para determinar la evolución de daño cerebral agudo y composición farmacéutica para su tratamiento España.

30/11/2020.

## **GRANTED RESEARCH PROJECTS:**

### **Projects as Principal Investigator**

1. Neural circuits repair after CNS injuries. Funding Entity: Programa Ramón y Cajal, Ministerio de Ciencia e Innovación, Spanish Government, RYC2019-026870-I. Start-End date: 2021-2026. **Total: 308.600 €**

**Principal Investigador: Juliana M Rosa**

2. Spatial-temporal characteristics of Cortical Reorganization after Spinal Cord Injury and the role of interneurons and astrocytes. Funding Entity: Marie-Sklodowska Curie Actions Individual Grant 794926-CRASCI-H2020-MSCA-IF-2017. Start-End: 2018-2021. **Total 170.121 €**

**Principal investigator: Juliana Martins da Rosa**

3. Synaptic plasticity and remodelling in the somatosensory cortex after traumatic injuries. Funding Entity: RochePharma SFC2017, Start-End 2017-2019, **Total: 60.000 €**

**Principal Investigator: Juliana M Rosa**

4. Fast and slow endocytosis at synapses. Funding Entity: Marie-Sklodowska Curie Actions Individual Grant IEF (FSES-IEF-2010-272723), Fechas: 2011-2013, **Total: 209.092 €**

**Investigador Principal: Juliana M Rosa**

### **Projects as Team Member**

5. Development of Direction Selectivity in Retina. Funding entity: National Institute of Health. Entity: University of California, Berkeley, Berkeley, USA. Start-End: 2014-2015. Principal investigator: Marla B Feller. Team Member: Juliana M Rosa

6. Function of Neural Activity in Developing Retina. Funding entity: National Institute of Health. Entity: University of California, Berkeley, Berkeley, USA. Start-End date: 2014 – 2015. Principal investigator: Marla B Feller. Team member : Juliana M Rosa

7. Effects of amyloid-beta peptide in the cholinergic transmission (Universidad Autónoma de Madrid). PI.: Luis Gandia, Type of participation: Team member, MICINN-SAF, 2010 - 2011

8. Nicotinic receptors and neurotransmitter release, Universidad Autónoma de Madrid, PI: Luis Gandia, Type of participation: Team member, MICINN-SAF, 2007 - 2011

9. Calcium signals and exocytosis of neurotransmitters, Universidad Autónoma de Madrid, PI: Antonio Garcia Garcia, Type of participation: Team member, MICINN-SAF

### **Teaching and Formative Capacity:**

- Profesor invitado Master Neurociencias Universidad Autónoma de Madrid.
- 2020-2023/4: Tutora Tesis Doctoral Claudia Miguel-Quesada, Doctorado en Ciencias de la Salud, Universidad Castilla-La Mancha.
- 2020-2021 Tutora Trabajo Fin de Master Alba María Fernández, Master en Biología Sanitaria, Universidad Complutense de Madrid.
- 2020 Tutora Trabajo Fin de Grado Paula Martin Malle, Bioquímica, Universidad de Castilla-La Mancha.
- 2020 Tutora Trabajo Fin de Grado Sergio Nombela, Bioquímica, Universidad de Castilla-La Mancha.
- 2019-20: Tutora Trabajo Fin de Master Lara Sánchez Morales, Master en Biología Sanitaria, Universidad Complutense de Madrid.

### **Organization of Research and Academic Events**

- Co-organizer Simposio Homenaje Manuel Nieto Sampedro, Hospital Nacional de Paraplégicos 2019, Sep 2019.
- Organizer Seminarios Internos de la Unidad de Investigación del HNP (2020 – to date).
- Co-organizer Brain Awareness Week 2020, 2019, 2018 *HNP y Hospital La Princesa*
- Co-organizer Día de la Mujer y de la Nina en la Ciencia *HNP y Hospital La Princesa*, 2020, 2019, 2018
- *Co-organizer Medularte*. Cientific photographs Exposition. Toledo, January 2020.
- Member of Bay Area Science in Schools (University of California, Berkeley, USA), 2014-2015
- Co-Organizer, Science Open Days, University of California, Berkeley, USA. 2015.

### **Awards:**

2019. FAAM de Oro, prize given by the Federacion de Discapacitados de Almeria for my research in spinal cord injury.

2018. **Marie Curie Intra-European Fellowship Horizon 2020**

2017. **Stop Fuga de Cerebros Award, Spain.**

2015. **Members in training outstanding posters award**

“Communicator in Hot Topics” recognition from the Association for Research in Vision and Ophthalmology to the best 10% research projects.

ARVO Travel Grant to attend the ARVO Conference.

2011. **Marie Curie Intra-European Fellowship FP7**

**Best Research Project Prize (Poster Award)**, Spanish Society of Pharmacology.

2010. FENS Travel Grant to attend the FENS congress.

2009. **Best Research Project Prize (Poster Award)**, Spanish Society of Pharmacology.

2007. **FPU Doctoral Grant, Spain.**

2005. Teófilo Hernando PhD Fellowship, Spain.

2004. CAPEs Master Fellowship, Brazilian Science and Education Ministry.

2000. Undergraduate Grant “Scientific Initiation Fellowship”, Brazilian Science and Education Ministry.

**Peer Review Activity:**

PNAS

Current Biology

Scientific Reports

Cell Calcium