Michelle Melgarejo da Rosa

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Overview

Assistant professor/Early-stage investigator - Universidade Federal de Pernambuco (UFPE - Department of Biochemistry), Recife, Brazil.
Center for Therapeutic Innovation - NUPIT/UFPE.
Research focus: Neuroactive molecules in fear memory and emotional disorders.
Ph.D. in Neurobiology (molecular mechanism of Synaptic Plasticity and Homeostatic Synaptic Plasticity - Leibniz Institute for Neurobiology, Magdeburg, Germany, 2016).
Master's degree in Biochemistry (Influence of glutamatergic and opioid system in fear memory - Federal University of Santa Maria, Brazil).

Professional Experience

December 2019 – Present

- Assistant professor/Early-stage investigator - Universidade Federal de Pernambuco (UFPE - Department of Biochemistry), Recife, Brazil.
- Researcher at the Center for Therapeutic Innovation - NUPIT/UFPE.
- Research focus: Neuroactive molecules in fear memory and emotional disorders.

December 2018 – December 2019

- Course coordinator - Pharmacy - UNIFBV-Wyden, Brazil, Recife

August 2016 – December 2019

- Professor (pharmacology, biochemistry, and toxicology) - UniFBV-Wyden, Brazil, Recife

August 2016 – July 2018

- Part-time Pharmacology Professor - UFPE, Recife, Brazil

April 2012 – April 2017

- **Ph.D Student at Leibniz Institute for Neurobiology, Germany, Magdeburg**
- **Project:** The study of Molecules and Immediate Early Genes in Synaptic Plasticity and Homeostatic Synaptic Plasticity.
- **Methodologies:**western blot; immunocytochemistry; co-immunoprecipitation; PCR; basics of cloning; primary neuronal culture stimulation; hippocampus slices stimulation; high-resolution confocal microscopy; fluorescent microscopy.

March 2011 – March 2012

- **Master's Student at Universidade Federal de Santa Maria (UFSM), Brazil, Santa Maria - Biochemistry**
- **Project:** *in vivo* studies of the molecular basis of fear memory consolidation.
- **Methodologies:** behavioral approaches - inhibitory avoidance; fear conditioning; extinction of fear memory; open field; object recognition; elevated plus maze; and rodent stereotaxic surgery.

Education

- **2012 – 2016**

P.h.D – Leibniz Institute for Neurobiology, Magdeburg, Germany.

- **2011-2012**

Master's degree – Biochemistry, UFSM, Brazil.

- **2006-2011**

Pharmacy degree - UFSM, Brazil.

Publications

- Rosa, M.M.; de Aguiar M.F.; Oliveira C.A.; Santos, A.C:M.; Silva, Y.M.; Sharjeel, M.; Mello, M.J.M.; Pereira, M.C.; Pitta, M.G. Alzheimer's disease: Is there a role for galectins? European Journal of Pharmacology, v. 909, p. 174437, 2021. doi: 10.1016/j.ejphar.2021.174437
- Silva, M.M.; Lucena, A.S.; Junior, S.P.; Carvalho, V.; Stela, P.; Rosa, M.M.; Rego, M.; Pitta, M.R.; Pereira, M. C. Cell death mechanisms involved in cell injury caused by Sars-Cov2. Reviews in Medical Virology, 2021, doi.org/10.1002/rmv.2292
- Rosa, M.M.; Sampaio, M.C.; Calvancanti, R.V.; Sharjeel, M.; Araujo, C.; Pitta, M.G.R.; Pereira, M.C.; Rego, M.J. Unveiling the Pathogenesis of

Perineural Invasion from the Perspective of Neuroactive molecules. Biochemical Pharmacology, 2021. https://doi.org/10.1016/j.bcp.2021.114547

- Lima, B.R.F.; Patriota, L.L.; Albuquerque, L.; Ramos, D.B.M.; Paiva, M.G.; Pontual, E.V.; Rosa, M.M.; Napoleao, T.H. Can Plant Lectins be Alternatives to Treat Anxiety and Depressive Disorders? Advances in Research. 2348-0394, p 102-112. doi: 10.9734/AIR/2020/v21i1130274, January, 2021.
- Rosa, M.M. Communication of Glioma cells with neuronal plasticity: What is the underlying mechanism? Neurochem Int. 2020 Dec;141:104879. doi: 10.1016/j.neuint.2020.104879. Epub 2020 Oct 14. PMID: 33068685.
- Miranda, P.H.O.; Silva, G.C.; Veras, B.O.; Amorin, L.; Alves, J.V.; Assis, C.R.; Rosa, M.M.; Correia, M.T.; Silva, M.V. Antioxidant and acetylcholinesterase inhibition activity from Hymenaea rubriflora Ducke (Fabaceae) leaf extract. Brazilian Applied Science Review. October, 2020.
- Rosa, M.M.; Yuanxiang P.; Brambilla R, Kreutz M.R.; Karpova, A. Synaptic GluN2B/CaMKII-α Signaling Induces Synapto-Nuclear Transport of ERK and Jacob. Front Mol Neurosci. 2016 Aug 10;9:66. doi: 10.3389/fnmol.2016.00066. PMID: 27559307; PMCID: PMC4978723.
- Maciel RM, Carvalho FB, Olabiyi AA, Schmatz R, Gutierres JM, Stefanello N, Zanini D, Rosa MM, Andrade CM, Rubin MA, Schetinger MR, Morsch VM, Danesi CC, Lopes STA. Neuroprotective effects of quercetin on memory and anxiogenic-like behavior in diabetic rats: Role of ectonucleotidases and acetylcholinesterase activities. Biomed Pharmacother. 2016 Dec;84:559-568. doi: 10.1016/j.biopha.2016.09.069. Epub 2016 Sep 29. PMID: 27694000.
- da Costa P, Gonçalves JF, Baldissarelli J, Mann TR, Abdalla FH, Fiorenza AM, da Rosa MM, Carvalho FB, Gutierres JM, de Andrade CM, Rubin MA, Schetinger MR, Morsch VM. Curcumin attenuates memory deficits and the impairment of cholinergic and purinergic signaling in rats chronically exposed to cadmium. Environ Toxicol. 2017 Jan;32(1):70-83. doi: 10.1002/tox.22213. Epub 2015 Nov 23. PMID: 26592365.
- Stefanello N, Schmatz R, Pereira LB, Rubin MA, da Rocha JB, Facco G, Pereira ME, Mazzanti CM, Passamonti S, Rodrigues MV, Carvalho FB, da Rosa MM, Gutierres JM, Cardoso AM, Morsch VM, Schetinger MR. Effects of chlorogenic acid, caffeine, and coffee on behavioral and biochemical parameters of diabetic rats. Mol Cell Biochem. 2014 Mar;388(1-2):277-86. doi: 10.1007/s11010-013-1919-9. Epub 2013 Dec 27. PMID: 24370728.
- Abdalla FH, Schmatz R, Cardoso AM, Carvalho FB, Baldissarelli J, de Oliveira JS, Rosa MM, Gonçalves Nunes MA, Rubin MA, da Cruz IB, Barbisan F, Dressler VL, Pereira LB, Schetinger MR, Morsch VM, Gonçalves JF, Mazzanti CM. Quercetin protects the impairment of memory and anxiogenic-like behavior in rats exposed to cadmium: Possible involvement of the acetylcholinesterase and Na(+),K(+)-ATPase activities. Physiol Behav. 2014 Aug;135:152-67. doi: 10.1016/j.physbeh.2014.06.008. Epub 2014 Jun 18. PMID: 24952260.

- Gutierres JM, Carvalho FB, Schetinger MR, Agostinho P, Marisco PC, Vieira JM, Rosa MM, Bohnert C, Rubin MA, Morsch VM, Spanevello R, Mazzanti CM. Neuroprotective effect of anthocyanins on acetylcholinesterase activity and attenuation of scopolamine-induced amnesia in rats. Int J Dev Neurosci. 2014 Apr;33:88-97. doi: 10.1016/j.ijdevneu.2013.12.006. Epub 2013 Dec 24. PMID: 24374256.
- Jaques JA, Doleski PH, Castilhos LG, da Rosa MM, Souza Vdo C, Carvalho FB, Marisco P, Thorstenberg ML, Rezer JF, Ruchel JB, Coradini K, Beck RC, Rubin MA, Schetinger MR, Leal DB. Free and nanoencapsulated curcumin prevents cigarette smoke-induced cognitive impairment and redox imbalance. Neurobiol Learn Mem. 2013 Feb;100:98-107. doi: 10.1016/j.nlm.2012.12.007. Epub 2012 Dec 20. PMID: 23261855.
- Marisco PC, Carvalho FB, Rosa MM, Girardi BA, Gutierres JM, Jaques JA, Salla AP, Pimentel VC, Schetinger MR, Leal DB, Mello CF, Rubin MA. Piracetam prevents scopolamine-induced memory impairment and decrease of NTPDase, 5'-nucleotidase and adenosine deaminase activities. Neurochem Res. 2013 Aug;38(8):1704-14. doi: 10.1007/s11064-013-1072-6. Epub 2013 May 16. PMID: 23677777.
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- da Rosa MM, Mello CF, Camera K, Ceretta AP, Ribeiro DA, Signor C, Rubin MA. Opioid mechanisms are involved in the disruption of arcaine-induced amnesia by context pre-exposure. Neurobiol Learn Mem. 2012 Mar;97(3):294-300. doi: 10.1016/j.nlm.2012.02.002. Epub 2012 Feb 27. PMID: 22390858.
- Gonçalves JF, Nicoloso FT, da Costa P, Farias JG, Carvalho FB, da Rosa MM, Gutierres JM, Abdalla FH, Pereira JS, Dias GR, Barbosa NB, Dressler VL, Rubin MA, Morsch VM, Schetinger MR. Behavior and brain enzymatic changes after long-term intoxication with cadmium salt or contaminated potatoes. Food Chem Toxicol. 2012 Oct;50(10):3709-18. doi: 10.1016/j.fct.2012.07.016. Epub 2012 Jul 20. PMID: 22819775.
- Guerra GP, Mello CF, Bochi GV, Pazini AM, Rosa MM, Ferreira J, Rubin MA. Spermidine-induced improvement of memory involves a cross-talk between protein kinases C and A. J Neurochem. 2012 Jul;122(2):363-73. doi: 10.1111/j.1471-4159.2012.07778.x. Epub 2012 May 24. PMID: 22564082.
- Anwar J, Spanevello RM, Thomé G, Stefanello N, Schmatz R, Gutierres J, Vieira J, Baldissarelli J, Carvalho FB, da Rosa MM, Rubin MA, Fiorenza A, Morsch VM, Schetinger MR. Effects of caffeic acid on behavioral parameters and on the activity of acetylcholinesterase in different tissues from adult rats.

Pharmacol Biochem Behav. 2012 Dec;103(2):386-94. doi: 10.1016/j.pbb.2012.09.006. Epub 2012 Sep 12. PMID: 22982740.

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- Gutierres, J.M.; Carvalho, F.B.; Rosa, M.M.; Schmatz, R.; Rodrigues, M.; Vieira, J.M.; Mazzanti, C.M.; Morscha, V.V.; Rubin, M.A.; Schetinger, M.R.; Spanevello, R. Protective effect of alfa-Tocopherol on memory deficits and Na+K+-ATPase and acetylcholinesterase activities in rats with diet-induced hypercholesterolemia. Biomedicine and Aging Pathology, 2012. https://doi.org/10.1016/j.ijdevneu.2013.12.006
- Mariani RK, Mello CF, Rosa MM, Ceretta AP, Camera K, Rubin MA. Effect of naloxone and morphine on arcaine-induced state-dependent memory in rats. Psychopharmacology (Berl). 2011 Jun;215(3):483-91. doi: 10.1007/s00213-011-2215-6. Epub 2011 Mar 1. PMID: 21360010.
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Book Chapter

- Dendrites. Título do capítulo: Activity dependent protein transport from the synapses to the nucleus. pag: 111-124 - Agosto, 2016, volume: VII, 608, Springer-Japan. ISBN: 978-4-431-56050-0. Doi: 10.1007/978-4-431-56050-0