

CV- Paula Pierozan

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Personal Objective:

I have a wide experience with laboratory techniques and potential to contribute with research projects. Able to work with animals and cell cultures, as well as analyze the results and write scientific publications and supervising ungraduated and graduated students.

Education

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| Since Oct 2016 | Uppsala University- Uppsala, Sweden
Postdoctoral: Toxicology
Project: Exposure to environmental contaminants could affect offspring and future generations |
| Jan-Sept 2016 | UFRGS- Universidade Federal do Rio Grande do Sul, Porto Alegre
Postdoctoral: Biochemistry
Project: Behavioral, biochemical and morphologic studies of the effects of quinolinic acid and homocysteine as a risk factor for Alzheimer's disease |
| 2014-2016 | UFRGS- Universidade Federal do Rio Grande do Sul, Porto Alegre
Postdoctoral: Biochemistry
Project: Effects of methylmercury on cytoskeleton and oxidative stress of neural cells |
| 2010- 2014 | UFRGS- Universidade Federal do Rio Grande do Sul, Porto Alegre
PhD in Biochemistry
Thesis Title: Signaling mechanisms downstream of quinolinic acid targeting the cytoskeleton of rats: emphasis on signaling pathways, neurochemical and morphological damage |
| 2008-2010 | UFRGS- Universidade Federal do Rio Grande do Sul, Porto Alegre
Master degree in Biochemistry
Dissertation Title: Acute intrastriatal administration of quinolinic acid provokes hyperphosphorylation of cytoskeletal intermediate filament proteins in astrocytes and neurons of rats |

2000-2005 **UFRGS**-Universidade Federal do Rio Grande do Sul, Porto Alegre
Graduation in pharmacy
Graduation Thesis: Neutrophil apoptosis: a marker of disease severity in sepsis and sepsis-induced acute respiratory distress syndrome.

Work Experience

Working with academic members of University in order to develop research projects and supervising ungraduated and graduated students. Responsible for some techniques in laboratory of neurometabolic disease and neuroprotection of departamento de Bioquímica da UFRGS.

- Since Oct 2016 Research work at Uppsala University, Uppsala
- 2010-2016 Laboratory and research work at UFRGS University, Porto Alegre
- 2015-2016 Teacher of Biochemistry for Dentistry College at UFRGS, Porto Alegre
- 2012- 2016 Supervision of ungraduated students in Research Program at UFRGS, Porto Alegre

Work in progress

Exposure to environmental contaminants could affect offspring and future generations.

Effects of Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) on long non-coding RNAs in human breast cells in culture.

Secretion of melatonin by pineal gland cells exposed to environmental contaminants.

Effects of BMAA on neural differentiation.

Skills

- Languages Portuguese, native speaker
English, good command
- Computer MS Office (Word, Power- Point, Excel), advanced skills
- Teaching Postgraduate Demonstrator. Supervise practicals for

undergraduate students. Teacher of Biochemistry for Dentistry College at UFRGS, Porto Alegre.

Interests Neurodegenerative diseases, neuron-astrocyte interactions, microglial activation, toxicity, epigenetic

Publications

1. Kynurenic Acid Restores Nrf2 Levels and Prevents Quinolinic Acid-Induced Toxicity in Rat Striatal Slices.

Ferreira FS, Biasibetti-Brendler H, Pierozan P, Schmitz F, Bertó CG, Prezzi CA, Manfredini V, Wyse ATS. *Mol Neurobiol*. 2018 Mar 21. doi:10.1007/s12035-018-1003-2.

2. The environmental neurotoxin β -N-methylamino-L-alanine (BMAA) inhibits melatonin synthesis in primary pinealocytes and a rat model.

Pierozan P, Andersson M, Brandt I, Karlsson O. *J Pineal Res*. 2018 Mar 12. doi: 10.1111/jpi.12488.

3. Perfluorooctanoic acid (PFOA) exposure promotes proliferation, migration and invasion potential in human breast epithelial cells.

Pierozan P, Jerneeren F, Karlsson O. *Arch Toxicol*. 2018 Mar 3. doi: 10.1007/s00204-018-2181-4.

4. Methylphenidate disrupts cytoskeletal homeostasis and reduces membrane-associated lipid content in juvenile rat hippocampus.

Schmitz F, Pierozan P, Biasibetti-Brendler H, Ferreira FS, Dos Santos Petry F, Trindade VMT, Pessoa-Pureur R, Wyse ATS. *Metab Brain Dis*. 2017 Dec 29. doi: 10.1007/s11011-017-0177-z.

5. Reverse T3 interacts with α v β 3 integrin receptor and restores enzyme activities in the hippocampus of hypothyroid developing rats: Insight on signaling mechanisms.

Domingues JT, Cattani D, Cesconetto PA, Nascimento de Almeida BA, Pierozan P, Dos Santos K, Razzera G, Mena Barreto Silva FR, Pessoa-Pureur R, Zamoner A. *Mol Cell Endocrinol*. 2017 Nov 16. pii: S0303-7207(17)30596-8. doi: 10.1016/j.mce.2017.11.013.

6. Synergistic Toxicity of the Neurometabolites Quinolinic Acid and Homocysteine in Cortical Neurons and Astrocytes: Implications in Alzheimer's Disease.

Pierozan P, Biasibetti-Brendler H, Schmitz F, Ferreira F, Netto CA, Wyse ATS. *Neurotox Res*. 2017 Nov 9. doi: 10.1007/s12640-017-9834-6.

7. PFOS induces proliferation, cell-cycle progression, and malignant phenotype in human breast epithelial cells.

Pierozan P, Karlsson O. *Arch Toxicol*. 2018 Feb;92(2):705-716. doi: 10.1007/s00204-017-2077-8.

8. Toxic Synergism Between Quinolinic Acid and Glutaric Acid in Neuronal Cells Is Mediated by Oxidative Stress: Insights to a New Toxic Model.

Pierozan P, Colín-González AL, Biasibetti H, da Silva JC, Wyse A, Wajner M, Santamaria A. *Mol Neurobiol*. 2017 Sep 21. doi: 10.1007/s12035-017-0761-6.

9. Kynurenic Acid Prevents Cytoskeletal Disorganization Induced by Quinolinic Acid in Mixed Cultures of Rat Striatum.

Pierozan P, Biasibetti-Brendler H, Schmitz F, Ferreira F, Pessoa-Pureur R, Wyse ATS. Mol Neurobiol. 2017 Aug 24. doi: 10.1007/s12035-017-0749-2.

10. Vitamin D3 Reverses the Hippocampal Cytoskeleton Imbalance But Not Memory Deficits Caused by Ovariectomy in Adult Wistar Rats.

Siebert C, Pierozan P, Kolling J, Dos Santos TM, Sebotaio MC, Marques EP, Biasibetti H, Longoni A, Ferreira F, Pessoa-Pureur R, Netto CA, Wyse ATS. Neuromolecular Med. 2017 Sep;19(2-3):345-356. doi: 10.1007/s12017-017-8449-7.

11. Cytoskeleton as a Target of Quinolinic Acid Neurotoxicity: Insight from Animal Models.

Pierozan P, Pessoa-Pureur R. Mol Neurobiol. 2018 May;55(5):4362-4372. doi: 10.1007/s12035-017-0654-8.

12. Hypoxanthine Induces Neuroenergetic Impairment and Cell Death in Striatum of Young Adult Wistar Rats. Biasibetti-Brendler H, Schmitz F, Pierozan P, Zanotto BS, Prezzi CA, de Andrade RB, Wannmacher CMD, Wyse ATS. Mol Neurobiol. 2018 May;55(5):4098-4106. doi: 10.1007/s12035-017-0634-z.

13. The Choice of Euthanasia Method Affects Metabolic Serum Biomarkers.

Pierozan P, Jernerén F, Ransome Y, Karlsson O. Basic Clin Pharmacol Toxicol. 2017 Aug;121(2):113-118. doi: 10.1111/bcpt.12774.

14. Astrocyte-neuron interaction in diphenyl ditelluride toxicity directed to the cytoskeleton.

Heimfarth L, da Silva Ferreira F, Pierozan P, Mingori MR, Moreira JC, da Rocha JB, Pessoa-Pureur R. Toxicology. 2017 Mar 15;379:1-11. doi: 10.1016/j.tox.2017.01.015.

15. Maternal Hypermethioninemia Affects Neurons Number, Neurotrophins Levels, Energy Metabolism, and Na⁺,K⁺-ATPase Expression/Content in Brain of Rat Offspring.

Bruna M. Schweinberger, André F. Rodrigues, Elias Turcatel, Paula Pierozan, Leticia F. Pettenuzzo, Mateus Grings, Giselli Scaini, Mariana M. Parisi, Guilhian Leipnitz, Emilio L. Streck, Florencia M. Barbé-Tuana, Angela T. S. Wyse. Mol Neurobiol. 2017 Jan 13. doi: 10.1007/s12035-017-0383-z.

16. Methylphenidate Decreases ATP Levels and Impairs Glutamate Uptake and Na⁺,K⁺-ATPase Activity in Juvenile Rat Hippocampus.

Felipe Schmitz, Paula Pierozan, André F. Rodrigues, Helena Biasibetti, Mateus Grings, Bruna Zanotto, Daniella M. Coelho, Carmen R. Vargas, Guilhian Leipnitz, Angela T. S. Wyse. Mol Neurobiol. 2016 Nov 14. [Epub ahead of print].

17. Quinolinic acid neurotoxicity: Differential roles of astrocytes and microglia via FGF-2-mediated signaling in redox-linked cytoskeletal changes.

Paula Pierozan, Helena Biasibetti, Felipe Schmitz, Helena Ávila, Mariana M. Parisi, Florencia Barbe-Tuana, Angela T.S. Wyse, Regina Pessoa-Pureur. Biochim Biophys Acta. 2016 Dec;1863(12):3001-3014.

18. Transplantation of mononuclear cells from bone marrow in a rat model of Huntingtons disease.

SERRANO, TERESA ; PIEROZAN, Paula ; ALBERTI, ESTEBAN ; BLANCO, LISETTE ; DE LA CUÉTARA BERNAL, KARELYS ; GONZÁLEZ, MARÍA ; PAVÓN, NANCY ; LORIGADOS, LOURDES ; ROBINSON-AGRAMONTE, MARÍA ; BERGADO, JORGE . Journal of Neurorestoratology, v. Volume 4, p. 95-105, 2016.

19. Neurotoxicity of Methylmercury in Isolated Astrocytes and Neurons: the Cytoskeleton as a Main Target.

Paula Pierozan, Helena Biasibetti, Felipe Schmitz, Helena Ávila, Carolina Gonçalves Fernandes, Regina Pessoa-Pureur, Angela T. S. Wyse. *Mol Neurobiol.* 2016 Sep 22. [Epub ahead of print].

20. Calcium signaling mechanisms disrupt the cytoskeleton of primary astrocytes and neurons exposed to diphenylditelluride.

Luana Heimfarth, Fernanda da Silva Ferreira, Paula Pierozan, Samanta Oliveira Loureiro, Moara Rodrigues Mingori, José Cláudio Fonseca Moreira, João Batista Teixeira da Rocha, Regina Pessoa-Pureur. *Biochim Biophys Acta.* 2016 Nov;1860(11 Pt A):2510-20. doi: 10.1016/j.bbagen.2016.07.023.

21. Methylphenidate Causes Behavioral Impairments and Neuron and Astrocyte Loss in the Hippocampus of Juvenile Rats.

Felipe Schmitz, Paula Pierozan, André F. Rodrigues, Helena Biasibetti, Matheus Grunevald, Letícia F. Petteuzzo, Giselli Scaini, Emilio L. Streck, Carlos A. Netto, Angela T. S. Wyse. *Mol Neurobiol.* 2016 Jun 21. [Epub ahead of print].

22. D-Galactose Causes Motor Coordination Impairment, and Histological and Biochemical Changes in the Cerebellum of Rats.

Rodrigues AF, Biasibetti H, Zanotto BS, Sanches EF, Schmitz F, Nunes VT, Pierozan P, Manfredini V, Magro DD, Netto CA, Wyse AT. *Mol Neurobiol.* 2016 Jun 20. [Epub ahead of print].

23. Hypoxanthine Intrastratial Administration Alters Neuroinflammatory Profile and Redox Status in Striatum of Infant and Young Adult Rats.

Biasibetti H, Pierozan P, Rodrigues AF, Manfredini V, Wyse AT. *Mol Neurobiol.* 2016 Mar 24. [Epub ahead of print]

24. Intracerebroventricular D-galactose administration impairs memory and alters activity and expression of acetylcholinesterase in the rat.

Rodrigues AF, Biasibetti H, Zanotto BS, Sanches EF, Pierozan P, Schmitz F, Parisi MM, Barbé-Tuana F, Netto CA, Wyse AT. *Int J Dev Neurosci.* 2016 May;50:1-6. doi: 10.1016/j.ijdevneu.2016.01.007. Epub 2016 Mar 4.

25. Acute Hyperammonemia Induces NMDA-Mediated Hypophosphorylation of Intermediate Filaments Through PP1 and PP2B in Cerebral Cortex of Young Rats.

Carvalho RV, da Silva Ferreira F, Heimfarth L, Pierozan P, Fernandes C, Pessoa-Pureur R. *Neurotox Res.* 2016 Aug;30(2):138-49. doi: 10.1007/s12640-016-9607-7. Epub 2016 Mar 2.

26. High postnatal susceptibility of hippocampal cytoskeleton in response to ethanol exposure during pregnancy and lactation.

Reis KP, Heimfarth L, Pierozan P, Ferreira F, Loureiro SO, Fernandes CG, Carvalho RV, Pessoa-Pureur R. *Alcohol.* 2015 Aug 6. doi: S0741 8329(15)20294-7. doi: 10.1016/j.alcohol.2015.06.005

27. NMDA Receptors and Oxidative Stress Induced by the Major Metabolites Accumulating in HMG Lyase Deficiency Mediate Hypophosphorylation of Cytoskeletal Proteins in Brain From Adolescent Rats: Potential Mechanisms Contributing to the Neuropathology of This Disease.

Fernandes CG, Pierozan P, Soares GM, Ferreira F, Zanatta Â, Amaral AU, Borges CG, Wajner M, Pessoa-Pureur R. *Neurotox Res.* 2015 Oct;28(3):239-52. doi: 10.1007/s12640-015-9542-z. Epub 2015 Jul 15.

28. Chronic Treatment with a Clinically Relevant Dose of Methylphenidate Increases Glutamate Levels in Cerebrospinal Fluid and Impairs Glutamatergic Homeostasis in Prefrontal Cortex of Juvenile Rats.

Schmitz F, Pierozan P, Rodrigues AF, Biasibetti H, Coelho DM, Mussulini BH, Pereira MS, Parisi MM, Barbé-Tuana F, de Oliveira DL, Vargas CR, Wyse AT. *Mol Neurobiol*. 2015 May 24

29. Quinolinic acid induces disrupts cytoskeletal homeostasis in striatal neurons. Protective role of astrocyte-neuron interaction.

Pierozan P, Ferreira F, de Lima BO, Pessoa-Pureur R. *J Neurosci Res*. 2015 Feb;93(2):268-84. doi: 10.1002/jnr.23494. Epub 2014 Oct 13.

30. Acute intrastriatal injection of quinolinic acid provokes long-lasting misregulation of the cytoskeleton in the striatum, cerebral cortex and hippocampus of young rats.

Pierozan P, Gonçalves Fernandes C, Ferreira F, Pessoa-Pureur R. *Brain Res*. 2014 Aug 19;1577:1-10. doi: 10.1016/j.brainres.2014.06.024. Epub 2014 Jun 26.

31. Biochemical, histopathological and behavioral alterations caused by intrastriatal administration of quinolinic acid to young rats.

Pierozan P, Fernandes CG, Dutra MF, Pandolfo P, Ferreira F, de Lima BO, Porciúncula L, Wajner M, Pessoa-Pureur R. *FEBS J*. 2014 Apr;281(8):2061-73. doi: 10.1111/febs.12762. Epub 2014 Mar 13.

32. The phosphorylation status and cytoskeletal remodeling of striatal astrocytes treated with quinolinic acid.

Pierozan P, Ferreira F, Ortiz de Lima B, Gonçalves Fernandes C, Totarelli Monteforte P, de Castro Medaglia N, Bincoletto C, Soubhi Smaili S, Pessoa-Pureur R. *Exp Cell Res*. 2014 Apr 1;322(2):313-23. doi: 10.1016/j.yexcr.2014.02.024. Epub 2014 Feb 26.

33. Roundup disrupts male reproductive functions by triggering calcium-mediated cell death in rat testis and Sertoli cells.

de Liz Oliveira Cavalli VL, Cattani D, Heinz Rieg CE, Pierozan P, Zanatta L, Benedetti Parisotto E, Wilhelm Filho D, Mena Barreto Silva FR, Pessoa-Pureur R, Zamoner A. *Free Radic Biol Med*. 2013 Dec;65:335-46. doi: 10.1016/j.freeradbiomed.2013.06.043. Epub 2013 Jun 29.

34. Congenital hypothyroidism alters the oxidative status, enzyme activities and morphological parameters in the hippocampus of developing rats.

Cattani D, Goulart PB, Cavalli VL, Winkelmann-Duarte E, Dos Santos AQ, Pierozan P, de Souza DF, Woehl VM, Fernandes MC, Silva FR, Gonçalves CA, Pessoa-Pureur R, Zamoner A. *Mol Cell Endocrinol*. 2013 Aug 15;375(1-2):14-26. doi: 10.1016/j.mce.2013.05.001. Epub 2013 May 18.

35. In vivo experimental evidence that the major metabolites accumulating in 3-hydroxy-3-methylglutaryl-CoA lyase deficiency induce oxidative stress in striatum of developing rats: a potential pathophysiological mechanism of striatal damage in this disorder.

Fernandes CG, da Rosa MS, Seminotti B, Pierozan P, Martell RW, Lagranha VL, Busanello EN, Leipnitz G, Wajner M. *Mol Genet Metab*. 2013 Jun;109(2):144-53. doi: 10.1016/j.ymgme.2013.03.017. Epub 2013 Apr 6.

36. Methylglyoxal-induced cytotoxicity in neonatal rat brain: a role for oxidative stress and MAP kinases.

Heimfarth L, Loureiro SO, Pierozan P, de Lima BO, Reis KP, Torres EB, Pessoa-Pureur R. *Metab Brain Dis*. 2013 Sep;28(3):429-38. doi: 10.1007/s11011-013-9379-1. Epub 2013 Feb 2.

37. $1\alpha,25$ -dihydroxyvitamin D(3) mechanism of action: modulation of L-type calcium channels leading to calcium uptake and intermediate filament phosphorylation in cerebral cortex of young rats.

Zanatta L, Goulart PB, Gonçalves R, Pierozan P, Winkelmann-Duarte EC, Woehl VM, Pessoa-Pureur R, Silva FR, Zamoner A. *Biochim Biophys Acta*. 2012 Oct;1823(10):1708-19. doi: 10.1016/j.bbamcr.2012.06.023. Epub 2012 Jun 25.

38. Signaling mechanisms downstream of quinolinic acid targeting the cytoskeleton of rat striatal neurons and astrocytes.

Pierozan P, Zamoner A, Soska AK, de Lima BO, Reis KP, Zamboni F, Wajner M, Pessoa-Pureur R. *Exp Neurol*. 2012 Jan;233(1):391-9. doi: 10.1016/j.expneurol.2011.11.005. Epub 2011 Nov 13.

39. Acute intrastriatal administration of quinolinic acid provokes hyperphosphorylation of cytoskeletal intermediate filament proteins in astrocytes and neurons of rats.

Pierozan P, Zamoner A, Soska AK, Silvestrin RB, Loureiro SO, Heimfarth L, Mello e Souza T, Wajner M, Pessoa-Pureur R. *Exp Neurol*. 2010 Jul;224(1):188-96. doi: 10.1016/j.expneurol.2010.03.009. Epub 2010 Mar 18.

40. Vimentin phosphorylation as a target of cell signaling mechanisms induced by $1\alpha,25$ -dihydroxyvitamin D3 in immature rat testes.

Zamoner A, Pierozan P, Vidal LF, Lacerda BA, Dos Santos NG, Vanzin CS, Pessoa-Pureur R. *Steroids*. 2008 Dec 22;73(14):1400-8. doi: 10.1016/j.steroids.2008.07.002. Epub 2008 Jul 17.

41. Neutrophil apoptosis: a marker of disease severity in sepsis and sepsis-induced acute respiratory distress syndrome.

Fialkow L, Fochesatto Filho L, Bozzetti MC, Milani AR, Rodrigues Filho EM, Ladniuk RM, Pierozan P, de Moura RM, Prolla JC, Vachon E, Downey GP. *Crit Care*. 2006;10(6):R155.