

Alex Rafacho, CPF:285.799.478-80

Curriculum Vitae

Date and place of birth

08th of July 1980 in Bauru, São Paulo State, Brazil.

Higher Education Degree

Degree: Undergraduate in Biological Sciences

Year: 2004

University: São Paulo State University, Brazil.



Doctoral Degree

Year: 2005-2008

Discipline: Physiology

University: Campinas State University, Institute of Biology, Department of Structural and Functional Biology, Brazil.

Title: Evaluation of the effects of different concentrations of dexamethasone on physiological parameters of pancreatic islets.

Supervisor: Professor José Roberto Bosqueiro.

Post Doctoral Stayings

Year: 2009-2010

University: São Paulo State University, School of Sciences, Department of Physical Education, Brazil.

Short Post Doctoral Stayings

Year: 2018

Andalusian Center of Molecular Biology and Regenerative Medicine (CABIMER), Seville, Spain

Year: 2015

University: Miguel Hernández University, Bioengineering Institute, Department of Cellular Physiology and Nutrition, Elche, Spain.

Year: 2014

University: Málaga Biomedical Institute of Investigation, Civil Hospital, Málaga, Spain.

Year: 2013

University: Miguel Hernández University, Bioengineering Institute, Department of Cellular Physiology and Nutrition, Elche, Spain.

Year: 2012

University: Geneve University, Medical Center, Department of Cellular Physiology and Metabolism, Geneve, Switzerland.

Short Visit as Visitant Professor

Year: 2013

Universidad Nacional de Córdoba, Córdoba, Argentina

Year: 2022

Universidad Miguel Hernández (UMH), Elche, Spain

Year: 2019

Universidad Nacional de Córdoba, Córdoba, Argentina

Year: 2018

Universidad Nacional de La Plata, la Plata, Argentina

Academic position

Associate professor from July 2017 until the present: Department of Physiological Sciences, Center of Biological Sciences (CCB), Federal University of Santa Catarina, Florianópolis (UFSC), SC, Brazil.

Assistant professor from July 2010 to June 2017: Department of Physiological Sciences, Center of Biological Sciences (CCB), Federal University of Santa Catarina, Florianópolis (UFSC), SC, Brazil.

Additional information

Positions of trust

- Coordinator of the Animal Breeding Center at the Department of Physiological Sciences, from 2021 until the present moment.
- Coordinator of Multicenter Graduate Program in Physiological Sciences, from 2017 to 2019
- Titular member of the Prorectorate graduate Committee, from 2017 to 2019.
- Coordinator of Multicenter Graduate Program in Physiological Sciences, from 2011 to 2015
- SubCoordinator of Multicenter Graduate Program in Physiological Sciences, from 2015 until the present moment
- Coordinator of Laboratory of Investigation in Chronical Diseases, CCB, UFSC, from 2011 until the present moment.
- Vice President of Graduate Programs Forum from CCB, from 2014 until the present moment.
- Titular member of the Ethical Committee in Animal Use, from 2011 to 2013.
- Research chief in the Department of Physiological Sciences, CCB, UFSC, from 2016 until the present moment.

Graduate Programs accreditation

- Full member of the Multicenter Graduate Program in Physiological Sciences, CCB, UFSC, from 2010 until the present moment.
- Full member of the Graduate Program in Pharmacology, CCB, UFSC, from 2014 until the present moment.
- Full member of the Graduate Program in Neurosciences, CCB, UFSC, from 2019 until the present moment.

Assignments as referee for Scientific Journals

More than 90 assignments from, among others, Scientific Reports, PLoS ONE, Endocrinology, American Journal of Physiology Endocrinology and Metabolism, Molecular Cell Endocrinology, Acta Physiologica.

Assignments as Editor for Scientific Journals Panel

Member of the editorial panel in the Scientific Report and Frontiers in Physiology

Other Experience and Professional Memberships

2005- Member, Brazilian Society in Physiology

2011- Member, European Association for the Study of Diabetes

2017- Member, Brazilian Society for the Science Progress

2013-2019 Member, Endocrine Society

Honors

2015- Productivity Scholarship 2, CNPq

Contributions to Science

ORCID, Researcher ID, Researchgate, and Others:

- ORCID: <https://orcid.org/0000-0002-8637-6097>
- Researcher ID (Publons): <https://publons.com/researcher/1313993/alex-rafacho/>
- Researchgate: https://www.researchgate.net/profile/Alex_Rafacho2
- AD Scientific Index: <https://www.adscientificindex.com/scientist/alex-rafacho/1088608>

Complete List of Published Work in PubMed:

<https://www.ncbi.nlm.nih.gov/pubmed/?term=rafacho+A>

Publication list for the last 15 papers published

- Zimath PL, Almeida MS, Bruxel MA, Rafacho A. Oral mometasone furoate administration preserves anti-inflammatory action with fewer metabolic adverse effects in rats. *Biochem Pharmacol.* 2023 Apr;210:115486. doi: 10.1016/j.bcp.2023.115486. Epub 2023 Mar 7. PMID: 36893817
- Martins JRN, Lopes S, Hurtado HN, da Silva FN, Villard DR, Taboga SR, Souza KLA, Quesada I, Soriano S, Rafacho A. Acute and chronic effects of the organophosphate malathion on the pancreatic α and β cell viability, cell structure, and voltage-gated K⁺ currents. *Environ Toxicol Pharmacol.* 2023 Mar;98:104046. doi: 10.1016/j.etap.2022.104046. Epub 2022 Dec 29. PMID: 36587778
- Bruxel MA, da Silva FN, da Silva RA, Zimath PL, Rojas A, Moreira ELG, Quesada I, Rafacho A. Preconception exposure to malathion and glucose homeostasis in rats: Effects on dams during pregnancy and post-term periods, and on their progeny. *Environ Pollut.* 2023 Jan 1;316(Pt 2):120633. doi: 10.1016/j.envpol.2022.120633. Epub 2022 Nov 9. PMID: 36370973
- Dos Santos C, Karagiannopoulos A, Rafacho A, Perfilyev A, Eliasson L, Ling C, Bacos K. Glucocorticoids and glucolipototoxicity alter the DNA methylome and function of human EndoC- β H1 cells. *Life Sci.* 2022 Oct 15;307:120854. doi: 10.1016/j.lfs.2022.120854. Epub 2022 Jul 30. PMID: 35917939 Free article.
- The effects of macronutrients composition on hormones and substrates during a meal tolerance test in drug-naïve and sitagliptin-treated individuals with type 2 diabetes: a randomized crossover study.
- da Silva Schreiber C, Rafacho A, Silverio R, Betti R, Lerário AC, Lotenberg AMP, Rahmann K, de Oliveira CP, Wajchenberg BL, da Luz PL. *Arch Endocrinol Metab.* 2022 May 12;66(3):312-23. doi: 10.20945/2359-3997000000478. Online ahead of print. PMID: 35551683 Free PMC article.
- Silvério R, Barth R, Heimann AS, Reckziegel P, Dos Santos GJ, Romero-Zerbo SY, Bermúdez-Silva FJ, Rafacho A, Ferro ES. Pep19 Has a Positive Effect on Insulin Sensitivity and Ameliorates Both Hepatic and Adipose Tissue Phenotype of Diet-Induced Obese Mice. *Int J Mol Sci.* 2022 Apr 7;23(8):4082. doi: 10.3390/ijms23084082. PMID: 35456900 Free PMC article.
- Gregorio T, Lorenzon F, Niebisch F, Stolte RCK, Rafacho A, Dos Santos GJ, Lino de Oliveira C, Lima FB. Antidepressant-like activity of gestational administration of vitamin D is suppressed by prenatal

- overexposure to dexamethasone in female Wistar rats. *Physiol Behav.* 2022 May 15;249:113765. doi: 10.1016/j.physbeh.2022.113765. Epub 2022 Feb 26. PMID: 35227701
- Figueiredo BS, Ferreira FBD, Barbosa AM, Dos Santos C, Ortsäter H, Rafacho A. Coadministration of sitagliptin or metformin has no major impact on the adverse metabolic outcomes induced by dexamethasone treatment in rats. *Life Sci.* 2021 Dec 1;286:120026. doi: 10.1016/j.lfs.2021.120026. Epub 2021 Oct 8. PMID: 34627773
 - Tudurí E, Soriano S, Almagro L, García-Heredia A, Rafacho A, Alonso-Magdalena P, Nadal Á, Quesada I. The Effects of Aging on Male Mouse Pancreatic β -Cell Function Involve Multiple Events in the Regulation of Secretion: Influence of Insulin Sensitivity. *J Gerontol A Biol Sci Med Sci.* 2022 Mar 3;77(3):405-415. doi: 10.1093/gerona/glab276. PMID: 34562079
 - Dos Santos C, Rafacho A, Ferreira SM, Vettorazzi JF, Dos Reis Araújo T, Mateus Gonçalves L, Ruhrmann S, Bacos K, Ling C, Boscherio AC, Jorge Dos Santos G. Excess of glucocorticoids during late gestation impairs the recovery of offspring's β -cell function after a postnatal injury. *FASEB J.* 2021 Aug;35(8):e21828. doi: 10.1096/fj.202100841R. PMID: 34325494
 - Lorenzon F, Gregorio T, Niebisch F, Stolte RCK, Dos Santos GJ, Rafacho A, Lima FB. Maternal vitamin D administration attenuates metabolic disturbances induced by prenatal exposure to dexamethasone in a sex-dependent manner. *J Steroid Biochem Mol Biol.* 2021 Sep;212:105941. doi: 10.1016/j.jsbmb.2021.105941. Epub 2021 Jun 18. PMID: 34147644 Free article.
 - Taschetto APD, Zimath PL, Silvério R, Dos Santos C, Boscherio AC, Dos Santos GJ, Rafacho A. Reduced insulin sensitivity and increased β/α cell mass is associated with reduced hepatic insulin-degrading enzyme activity in pregnant rats. *Life Sci.* 2021 Jul 15;277:119509. doi: 10.1016/j.lfs.2021.119509. Epub 2021 Apr 15. PMID: 33865877
 - Gonçalves RM, Delgobo M, Agnes JP, das Neves RN, Falchetti M, Casagrande T, Garcia APV, Vieira TC, Somensi N, Bruxel MA, Mendes DAGB, Rafacho A, Báfica A, Gelain DP, Moreira JCF, Cassali GD, Bishop AJR, Zanotto-Filho A. COX-2 promotes mammary adipose tissue inflammation, local estrogen biosynthesis, and carcinogenesis in high-sugar/fat diet treated mice. *Cancer Lett.* 2021 Apr 1;502:44-57. doi: 10.1016/j.canlet.2021.01.003. Epub 2021 Jan 9. PMID: 33429006 Free article.
 - Santos CD, da Silva JS, Brunetta HS, Chagas TR, Zoccal DB, Nunes EA, Rafacho A. Impact of combined long-term fructose and prednisolone intake on glucose and lipid homeostasis in rats: benefits of intake interruption or fish oil administration. *J Nutr Biochem.* 2021 Apr;90:108572. doi: 10.1016/j.jnutbio.2020.108572. Epub 2020 Dec 31. PMID: 33388348

Review articles and book chapters

- Pasiaka AM, Rafacho A. Impact of Glucocorticoid Excess on Glucose Tolerance: Clinical and Preclinical Evidence. *Metabolites.* 2016 Aug 3;6(3). pii: E24. doi: 10.3390/metabo6030024.
- Rafacho A et al. How much we know about the attenuation of insulin signaling in the adipose tissue caused by glucocorticoid treatment?. *Inflammation and Cell Signaling*, p. 1-6, 2015.
- Rafacho A. Canagliflozin in the treatment of diabetes: Perspectives. *Diabetes*, v. 1, p. 7-10, 2015.
- Nunes EA, Rafacho A. Implications of palmitoleic acid (palmitoleate) on glucose homeostasis, insulin resistance and diabetes. *Current Drug Targets (Print)*, v. 17, p. 1-10, 2015.
- Rafacho et al. Glucocorticoid treatment and endocrine pancreas function. *Journal of Endocrinology*, 223(3):R49-62. doi: 10.1530/JOE-14-0373, 2014.
- Henrik Ortsäter, Åke Sjöholm and Alex Rafacho (2012). Regulation of Glucocorticoid Receptor Signaling and the Diabetogenic Effects of Glucocorticoid Excess, State of the Art of Therapeutic Endocrinology, Dr. Sameh Magdeldin (Ed.), ISBN: 978-953-51-0772-9, InTech, DOI: 10.5772/51759.

- Alex Rafacho, Antonio C. Boschero and Henrik Ortsäter (2012). Functional and Molecular Aspects of Glucocorticoids in the Endocrine Pancreas and Glucose Homeostasis, State of the Art of Therapeutic Endocrinology, Dr. Sameh Magdeldin (Ed.), ISBN: 978-953-51-0772-9, InTech, DOI: 10.5772/50233.

Graduate Students Supervision

Masters concluded

- Nine. See at: <https://lidoc.ufsc.br/lidoc-team/ex-collaborators/master-students/>

Master under supervision

- Two. See at: <https://lidoc.ufsc.br/lidoc-team/students-2/master-students/>

Doctorate concluded

- Four. See at: <https://lidoc.ufsc.br/lidoc-team/ex-collaborators/ph-d-students/>

Doctorates under supervision

- One. See at: <https://lidoc.ufsc.br/lidoc-team/students-2/ph-d-students/>

Post-doc concluded

- Two. See at: <https://lidoc.ufsc.br/lidoc-team/ex-collaborators/ph-d-students/>

Projects with approved grants

Concluded

- Impact of the exposure to organophosphate pesticide on the pregnancy, post-pregnancy, fetus, and adult offspring. The goal is to search for the possible gestational diabetes risk factor of pesticide and the consequences on the offspring metabolism. Edital Universal CNPq 2018. ID. 47139/2011-3. R\$ 46.000,00.
- Repercussões metabólicas da administração crônica de frutose e prednisolona: busca por novos modelos experimentais envolvendo alterações no metabolismo de glicose e do potencial impacto positivo da suplementação com óleo de peixe. Edital Universal CNPq 14/2014. ID. 44816/2014-9. R\$ 30.000,00.
- Conteúdo do receptor de glicocorticóide, da enzima 11 β -HSD1 e de proteínas chaves da via insulínica e via inflamatória em tecidos responsivos à insulina de ratos tratados com glicocorticóide. Edital Universal CNPq 14/2011. ID. 47139/2011-3. R\$ 20.000,00.
- Estudo dos mecanismos do controle neural do sistema cardio-respiratório e do metabolismo de glicose e lipídios modulados pela hipóxia intermitente: implicações sobre a apnéia obstrutiva do sono. Edital 003/2010 FAPESC/MS-CNPq/SES-SC 03/2010 PPSUS. R\$ 40.000,00.

Under conduction

- None with grant/funding at moment.

Personal Statement

I have a background in structural, functional, and molecular parameters related to glucose tolerance and insulin sensitivity performed in experimental animal models. As PI or co-Investigator on several projects, I have investigated the impact of diabetogenic drugs or diets on glucose and lipid homeostasis. All data regarding what I do can be found at <https://lidoc.ufsc.br/>