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## Research interests

El Dr. Sáez tiene un gran interés por las enfermedades neurodegenerativas, en particular por la enfermedad de Alzheimer, y como el metabolismo de ácidos grasos saturados puede interactuar con la proteína precursora amiloide, y favorecer el desarrollo de la patología, así como el efecto de los ácidos grasos saturados en la función neuronal normal.

## Resultado de la investigación

New Benzodihydrofuran Derivatives Alter the Amyloid  $\beta$  Peptide Aggregation: Strategies To Develop New Anti-Alzheimer Drugs

Sánchez, Y., Castillo, C., Fuentealba, J., Sáez-Orellana, F., Burgos, C. F., López, J. J., F. de la Torre, A. & Jiménez, C. A., 2023, En: ACS Chemical Neuroscience. 14, 15, p. 2590-2602 13 p.

Neuroprotective Properties of Eudesmin on a Cellular Model of Amyloid- $\beta$  Peptide Toxicity

Castillo, C., Bravo-Arrepol, G., Wendt, A., Saez-Orellana, F., Millar, C., Burgos, C. F., Gavilán, J., Pacheco, C., Ahumada-Rudolph, R., Napiórkowska, M., Pérez, C., Becerra, J., Fuentealba, J. & Cabrera-Pardo, J. R., 2023, En: Journal of Alzheimer's Disease. 94, p. S97-S108

Microglial Activation Modulated by P2X4R in Ischemia and Repercussions in Alzheimer's Disease

Castillo, C., Saez-Orellana, F., Godoy, P. A. & Fuentealba, J., 2022, En: Frontiers in Physiology. 13, 814999.

Regulation of PPAR  $\alpha$  by APP in Alzheimer disease affects the pharmacological modulation of synaptic activity

Sáez-Orellana, F., Leroy, T., Ribeiro, F., Kreis, A., Leroy, K., Lalloyer, F., Baugé, E., Staels, B., Duyckaerts, C., Brion, J. P., Gailly, P., Octave, J. N. & Pierrot, N., 2021, En: JCI Insight. 6, 16, e150099.

Alzheimer's Disease, a Lipid Story: Involvement of Peroxisome Proliferator-Activated Receptor  $\alpha$

Sáez-Orellana, F., Octave, J. N. & Pierrot, N., 2020, En: Cells. 9, 5, 1199.

P2X receptor overexpression induced by soluble oligomers of amyloid beta peptide potentiates synaptic failure and neuronal dyshomeostasis in cellular models of Alzheimer's disease

Sáez-Orellana, F., Fuentes-Fuentes, M. C., Godoy, P. A., Silva-Grecchi, T., Panes, J. D., Guzmán, L., Yévenes, G. E., Gavilán, J., Egan, T. M., Aguayo, L. G. & Fuentealba, J., 2018, En: Neuropharmacology. 128, p. 366-378 13 p.

A natural benzofuran from the patagonic aleurodiscus vitellinus fungus has potent neuroprotective properties on a cellular model of amyloid- $\beta$  peptide toxicity

González-Ramírez, M., Gavilán, J., Silva-Grecchi, T., Cajas-Madriaga, D., Triviño, S., Becerra, J., Saez-Orellana, F., Pérez, C. & Fuentealba, J., 2018, En: Journal of Alzheimer's Disease. 61, 4, p. 1463-1475 13 p.

ATP leakage induces P2XR activation and contributes to acute synaptic excitotoxicity induced by soluble oligomers of  $\beta$ -amyloid peptide in hippocampal neurons

Sáez-Orellana, F., Godoy, P. A., Bastidas, C. Y., Silva-Grecchi, T., Guzmán, L., Aguayo, L. G. & Fuentealba, J., 2016, En: Neuropharmacology. 100, p. 116-123 8 p.

Modulation of the neuronal network activity by P2X receptors and their involvement in neurological disorders

Sáez-Orellana, F., Godoy, P. A., Silva-Grecchi, T., Barra, K. M. & Fuentealba, J., 2015, En: Pharmacological Research. 101, p. 109-115 7 p.

Cellular and molecular targets as starting points to attenuate the synaptic failure in Alzheimer beta amyloid toxicity: The purinergic transmission  
Fuentealba, J., Godoy, P., Silva-Grecchi, T., Saez-Orellana, F. & Aguayo, L. G., 2015, *Synaptic Fundamentals of Memory Performance*. Nova Science Publishers, Inc., p. 193-212 20 p.

Neuroactive alkaloids that modulate the neuronal nicotinic receptor and provide neuroprotection in an Alzheimer's disease model: The case of teline monspessulana  
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Modulation of Neuronal Nicotinic Receptor by Quinolizidine Alkaloids Causes Neuroprotection on a Cellular Alzheimer Model  
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Synaptic silencing and plasma membrane dyshomeostasis induced by amyloid- $\beta$  peptide are prevented by *aristotelia chilensis* enriched extract  
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Synaptic failure and adenosine triphosphate imbalance induced by amyloid- $\beta$  aggregates are prevented by blueberry-enriched polyphenols extract  
Fuentealba, J., Dibarrart, A. J., Fuentes-Fuentes, M. C., Saez-Orellana, F., Quiñones, K., Guzmán, L., Perez, C., Becerra, J. & Aguayo, L. G., 2011, En: *Journal of Neuroscience Research*. 89, 9, p. 1499-1508 10 p.

## **Prensa/medios de comunicación**