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Current academic positions

Full Professor at the Universidad de Valparaíso, Faculty of Sciences
Principal Investigator at Centro Interdisciplinario de Neurociencia de Valparaíso

Educational Summary

Chemistry and Pharmacy, Universidad de Chile, 1984
Ph.D. in Pharmacology, Universidad Complutense de Madrid, 1988
Postdoctoral training at National Institutes of Health, USA, 1992-1994

Current Projects:

- Role of dysferlin in cytoskeletal actin remodeling and its impact on vesicle trafficking and membrane repair in muscular dystrophy linked to dysferlin mutations. Fondecyt Regular1160495.
- Role of pannexin channel and P2X receptors in exocytosis. CINV, P09-022-F from ICM-ANID,

List of scientific publications

1. Fernández, E., Cárdenas, A.M. & Martínez, G. (1987) "Phototoxicity from nalidixic acid: oxygendependent photohemolysis" *Farmaco* 42:681-690.

2. Cárdenas, A.M., Montiel, C., Artalejo, A.R., Sánchez-García, P., García, A.G. (1988) "Sodiumdependent inhibition by PN200-110 enantiomers of nicotinic adrenal catecholamine release" *British Journal of Pharmacology* 95:9-14.

3. Cárdenas, A.M., Montiel, C., Esteban, C., Borges, R. & García, A.G. (1988) "Secretion from adrenaline and nor-adrenaline storing adrenomedullary cells is regulated by a common dihydropyridine-sensitive calcium channel" *Brain Research* 456:364-366.

4. Fernández, E. & Cárdenas, A.M. (1990) "The mechanism of photohemolysis by photoproducts of nalidixic acid" *Journal of Photochemistry and Photobiology, B:Biology* 4:329-333.

5. Cárdenas, A.M., Montiel, C., García, AG. & Sanchez-García, P. (1991) "Mechanism of blockade by (+)isradipine of adrenal catecholamine release" *European Journal of Pharmacology* 192:243-251.

6. Cortés, MP, Cárdenas, A.M., Navarrete, E. & Fernández, E. (1991) "Phototoxic ability of nalidixic and oxolinic acids: decrease in cell survival of chick embryo fibroblast and Hep-2 cells" *J. Photochem. Photobiol, B:Biology* 9:229-234.

7. Cárdenas, A.M., Vargas, F., Fernández, E. & Hidalgo, M.E. (1991) "Phototoxic potential of quinolones" *J. Photochem. Photobiol., B:Biology* 10:249-255.

8. Cárdenas, A.M., Cortés, M.P., Fernández, E. & Peña, W. (1992) "Lipid peroxidation and loss of potassium from red blood cells produced by phototoxic quinolones" *Toxicology* 72:145-151.

9. Hidalgo, M.E., Pessoa, C., Fernández, E. & Cárdenas, A.M. (1993) "Comparative determination of photodegradation kinetics of quinolones" *J. Photochem. Photobiol. A:Chem.* 73:135-138.

10. Cortés, M.P., Cárdenas, A.M., Hidalgo, M.E., Glena, C., Fernández, E. & Sunkel, C. (1993) "New 4alkyl-1,4-dihydropyridines: evaluation of photostability and phototoxic potential" *J. Photochem. Photobiol. B: Biol.* 19:135-138.

11. Cárdenas, A.M., Kuijpers, G.A.J., Pollard, H.B. (1995) "Effect of protein synthesis inhibitors on synexin levels and secretory response in bovine adrenal medullary chromaffin cells" *Biochimica et Biophysica Acta* 1234:255-260.

12. Gandía, L, López, MG, Villarroya, M., Gilabert, A., Cárdenas, A.M., García, A.G. & Borges, R. (1996) "Otilonium blocks calcium channels and secretion in rat chromaffin cells" *European Journal of Pharmacology* 298:199-205.

13. Cárdenas, A.M. & Cortés, M.P. "Photochemistry and photobiology of quinolones" (1997) *En Modern Topics in Photochemistry and Photobiology* ed. por F. Vargas, Research Signpost (India) pgs. 103113.

14. Cárdenas, A.M., Vizcarra, J., Raffo, M., Pincheira, R., Inostroza, O. & García, R. (1998) "Clinical evaluation of the effect of calcium-channel blockers on verbal learning" *European Neuropsicopharmacology* 8, 187-189.

15. Sepúlveda, C.M., Troncoso, C.C., Lara, H., Cárdenas, A.M. (1998) "Intracellular calcium and arachidonic acid increase SNAP-25 expression in cultured rat hippocampal axplants, but not in cultured cerebellar explants" *Neuroscience Letters* 252, 127-130.

16. Cárdenas, A.M., Rodríguez, M.P., Cortés, M.P., Alvarez, R.M., Wei,W., Rapoport, S.I., Shimahara,T., Caviedes, R., Caviedes, P. (1999) "Calcium signals in cell lines derived from the cerebral cortex of normal and trisomy 16 mice" *Neuroreport* 10, 363-369.

17. García-Palomero, E., Montiel, C., García, A.G., Alvarez, R., Arnalich, FM, Herrero, Renart, J. Lara, H., Cárdenas, A.M. (2000) "Multiple calcium pathways induce the expression of SNAP-25 protein in chromaffin cells" *J. Neurochem.* 74:1049-1058.

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19. Tapia, J.C., Cárdenas, A.M., Nualart, F., Mentis, G.Z., Navarrete, R., Aguayo, L.G. (2000) "Neurite outgrowth in developing mouse spinal cord neurons is modulated by glycine receptors" *Neuroreport* 11:3007-3010.

20. Cárdenas, A.M., Allen, D., Arriagada, C., Olivares, A., Bennett, L., Caviedes, R., Dagnino-Subiabre, A., Mendoza, I.E., Segura-Aguilar, J., Rapaport, S., Caviedes, P. (2002) "Establishment and characterization of immortalized neuronal cell lines derived from the spinal cord of normal and trisomy 16 fetal mice, an animal model of Down Syndrome". *Journal of Neuroscience Research* 68:46-58.

21. Allen, D., Cárdenas, A.M., Arriagada, C., Bennett, C., García, C.J., Caviedes, R., Rapoport, S.I., Caviedes, P. (2002) "A dorsal root ganglia cell line derived from of trisomy 16 fetal mice, a model for Down Syndrome". *Neuroreport* 13:491-496.

22. Cárdenas, A.M., Arriagada, C., Cortes, J.F., Allen, D., Martín, J., Couve, E., Rapoport, S.I., Shimahara, T., Caviedes, R., Caviedes, P. (2002) "Neuronal cell lines from the hippocampus of the normal and trisomy 16 mouse fetus (a model for down syndrome) exhibit neuronal markers, cholinergic function and functional neurotransmitter receptors". *Experimental Neurology* 177:159-170.

23. Mendoza, I., Tonk, E., Díaz-Raya, P., Cárdenas, A.M. (2002) "Mitogen-activated protein kinase is activated by Ca(2+) entry through L- and N-Type channels and regulates Ca(2+)-induced SNAP-25 expression". *Ann. N. Y. Acad. Sci*. 971:159-161.

24. Montiel, C., Mendoza, I., García, C.J,, Awad, Y., Olivares-Garcia, J., Solis-Garrido, L.M., Lara H, García AG, Cárdenas AM. (2003) "Distinct Protein Kinases Regulate the SNAP-25 Expression in Chromaffin Cells". *Journal of Neuroscience Research* 71, 353-364.

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31. Ardiles, A., Maripillan, J., Lagos, V., Toro, R., Mora, I.G., Villarroel, L., Ales, E., Borges, R., Cárdenas, A.M. (2006) "A rapid exocytosis mode in chromaffin cells with a neuronal phenotype". *J. Neurochem*. 99:29-41.

32. Opazo, P., Saud, K., de Saint Pierre M., Cárdenas, A.M., Allen, D., Segura-Aguilar, J., Caviedes, R., Caviedes, P. (2006) "Knockdown of amyloid precursor protein normalizes cholinergic function in a cell line derived from the cerebral cortex of a trisomy 16 mouse, an animal model of Down syndrome". *J. Neurosci. Res*. 84:1303-1310

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39. Cárdenas AM, Ardiles AO, Barraza N, Baez-Matus X, Caviedes P (2012) "Role of protein tau in neuronal damage in Alzheimer's disease and Down syndrome". Archives of Medical Research 43:645654.

40. González-Jamett AM, Momboisse F, Guerra MJ, Ory S, Báez-Matus X, Barraza N, Calco V, Houy S, Couve E, Neely A, Martínez AD, Gasman S, Cárdenas AM (2013) Dynamin-2 regulates fusion pore expansion and quantal release through a mechanism that involves actin dynamics in neuroendocrine chromaffin cells. PLoS One 8:70638

41. González-Jamett AM, Momboisse F, Haro-Acuña V, Bevilacqua JA, Caviedes P, Cárdenas AM (2013) Dynamin-2 function and dysfunction along the secretory pathway. Front. Endocrinol. 4:126.

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51. Moya-Díaz J, Álvarez YD, Montenegro M, Bayonés L, Belingheri AV, González-Jamett AM, Cárdenas AM, Marengo FD (2016) Sustained Exocytosis after Action Potential-Like Stimulation at Low Frequencies in Mouse Chromaffin Cells Depends on a Dynamin-Dependent Fast Endocytotic Process. Front Cell Neurosci. 10:184

52. Cárdenas AM, Fernández-Olivares P, Díaz-Franulic I, González-Jamett AM, Shimahara T, Segura-Aguilar J, Caviedes R, Caviedes P (2017) Knockdown of Myo-Inositol Transporter SMIT1 Normalizes Cholinergic and Glutamatergic Function in an Immortalized Cell Line Established from the Cerebral Cortex of a Trisomy 16 Fetal Mouse, an Animal Model of Human Trisomy 21 (Down Syndrome). Neurotox Res. 32:614-623.

53. González-Jamett AM, Guerra MJ, Olivares MJ, Haro-Acuña V, Baéz-Matus X, Vásquez-Navarrete J, Momboisse F, Martinez-Quiles N, Cárdenas AM (2017) The F-Actin Binding Protein Cortactin Regulates the Dynamics of the Exocytotic Fusion Pore through its SH3 Domain. Front Cell Neurosci. 11:130.

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