

## Alejandro Sodero

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Alzheimer dementia



### Education

Biochemistry, Universidad Nacional de Córdoba (UNC, Argentina), 1999  
PhD Pharmacology, UNC, 2005

### Current Position

Postdoctoral researcher  
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### Current project members

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### Keywords

Alzheimer's disease - Neuronal aging - Cholesterol homeostasis - Hippocampal neurons - Synaptic function

### Science

Cholesterol homeostasis is an essential, tightly-regulated process that ensures neuronal integrity, viability, and function. The best known mechanism that neurons put to work to regulate the amount of cellular cholesterol is its oxidation to 24S-hydroxycholesterol (24S-HC) via activation of the 24S-cholesterol hydroxylase enzyme (CYP46A1). On the other hand, altered levels of 24S-HC have been detected in the CSF and plasma of individuals affected by Alzheimer's disease (AD), suggesting that deregulation of cholesterol catabolism is an important contributor for the development of this pathology. I am currently exploring possible cellular mechanisms that could help the neuron to adjust the cholesterol content in different physiological and pathological conditions, with the hope that understanding the molecular basis of the intricate cholesterol regulation in neurons might contribute to gain insight into the etiology of AD.

## Publications

Sodero AO, Vriens J, Ghosh D, Stegner D, Brachet A, Pallotto M, Sassoè-Pognetto M, Brouwers JF, Helms JB, Nieswandt B, Voets T, Dotti CG. Cholesterol loss during glutamate-mediated excitotoxicity. *The EMBO Journal*, 31(7):1764-73 (2012).

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Sodero AO, Weissmann C, Ledesma MD, Dotti CG. Cellular stress from excitatory neurotransmission contributes to cholesterol loss in hippocampal neurons aging in vitro. *Neurobiol. Aging* 32: 1043-53 (2011).

Sodero AO, Orsingher OA, Ramírez OA. Altered serotonergic function of dorsal raphe nucleus in perinatally protein-deprived rats: effects of fluoxetine administration. *Eur. J. Pharmacol.* 532: 230-5 (2006).

Sodero AO, Valdomero A, Cuadra GR, Ramírez OA, Orsingher OA. Locus coeruleus activity in perinatally protein-deprived rats: effects of fluoxetine administration. *Eur. J. Pharmacol.* 503: 35-42 (2004).