

**SAN2011**

XXVI CONGRESO ANUAL  
DE LA SOCIEDAD ARGENTINA  
DE INVESTIGACIÓN EN NEUROCIENCIA

HUERTA GRANDE, CÓRDOBA  
18-22 OCTUBRE 2011.

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*Logistic Organization:* **Silvina Andrea Ceriani**

intracellular cysteine by alanine (C364A) rendered receptors insensitive to H2O2, suggesting a single modulatory site.

Neurochemistry and Neuropharmacology

**Poster Number 181 | Session 1**

*"Pharmacology of nicotinic receptors from *C. elegans* muscle"*

**Ignacio Bergé, Leonardo Dionisio, Cecilia Bouzat**

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*Caenorhabditis elegans* has emerged as a model organism useful for drug screening. It expresses two types of muscle nicotinic receptors (AChRs): levamisole-sensitive (L-AChR) and nicotine-sensitive (N-AChR). L-AChRs are targets of anthelmintic drugs, which act as specific and potent agonists. We here explore activation of both AChR types by the nematocide drug oxantel. Single-channel recordings from *C. elegans* muscle cultured cells show that oxantel elicits openings with amplitudes similar to those of L-AChRs. However, the frequency of opening is significantly reduced with respect to that observed in the presence of ACh, indicating reduced activation. In whole-cell recordings from cells expressing N-AChRs, peak currents elicited by oxantel are 45% of those elicited by ACh. Molecular docking studies show binding of oxantel to both types of AChRs, with similar binding energies but different orientations at the binding pocket. We conclude that oxantel behaves as a partial and non selective agonist of both L- and N-muscle AChRs, thus showing a different pharmacological profile compared to that of typical anthelmintic agents. These results contribute to the understanding of the pharmacology related to neuromuscular transmission in the model organism.

Neurochemistry and Neuropharmacology

**Poster Number 182 | Session 2**

*"Stereospecific modulation of  $\alpha 9\alpha 10$  nicotinic cholinergic receptors by L-ascorbic acid"*

**Juan Carlos Boffi, Carolina Wedemeyer, Eleonora Katz, Daniel J. Calvo, Ana Belén Elgoyhen**

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The activation of  $\alpha 9\alpha 10$  nicotinic receptors in cochlear hair cells can ameliorate