

XXXIII
CONGRESO ANUAL
SAN 2018
CORDOBA –
ARGENTINA
24 AL 26 DE OCTUBRE

PRE-CONGRESS COURSE “NEUROBIOLOGY OF DRUG ADDICTION”

SAN IBRO LARC Course and ISN Small Conference (ISN-CC) Associated to the XXXIII SAN 2018 Meeting

October 22nd -23rd, 2018

Ciudad Universitaria, Córdoba, Argentina

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-Salón de Actos Pabellón Argentina, Ciudad Universitaria, Córdoba, Argentina

WORKSHOP *Homage to Ricardo Miledi*
**“Workshop: Past, Present and Beyond of Synaptic
Transmission”**

*Previous and satellite activity of the XXXIII Annual Congress of the Argentine
Society of Neuroscience Research – SAN*

October 22th- 23th, 2018 – Instituto Martín y Mercedes Ferreyra, Córdoba

LOCATION:

Instituto de Investigaciones Médicas
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Ciudad de Córdoba, República Argentina

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XXXII Congress of the Argentine Society for Research in Neuroscience

October 24th–26th, 2018

Pabellón Argentina, Ciudad Universitaria, UNC

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P12.-A deeper view into the effects of repetitive traumatic stress on aging

Natalia Andersen, Facundo Aletto, María José De Rosa, Diego Rayes

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An attack, or even the perception of a predator elicits a rapid “fight-or-flight” response to enhance the animal’s chance of survival. In mammals, the acute fight-or-flight response leads to the release of catecholamines (CA). Perpetuated activation of this acute stress response, as is the case of patients suffering from post-traumatic stress disorder (PTSD) is associated with accelerated aging.

Nevertheless the molecular and cellular mechanisms that underlie this detrimental effect remain largely obscure. Taking advantage of its relative simple anatomy, genetics, high degree of conservation and short lifespan, we introduced a model of the nematode *C. elegans*, to go deep into these mechanisms.

C. elegans coordinates stress response by releasing the CA tyramine (TA), the structural and functional counterpart of adrenaline in mammals. We here determined that TA-deficient animals (*tdc-1*) exhibit increased healthspan and lifespan. On contrary, animals permanently exposed to acute stressors, have reduced lifespan and deteriorated general fitness. These detrimental effects are not observed in *tdc-1* mutants suggesting that they depend on TA release. We are currently performing experiments in order to explore how neuronal architecture and function are affected by persistent activation of the fear-related response. This study was aimed to unravel how the stress response impacts on the structural, cellular and functional changes that normally occur with aging.