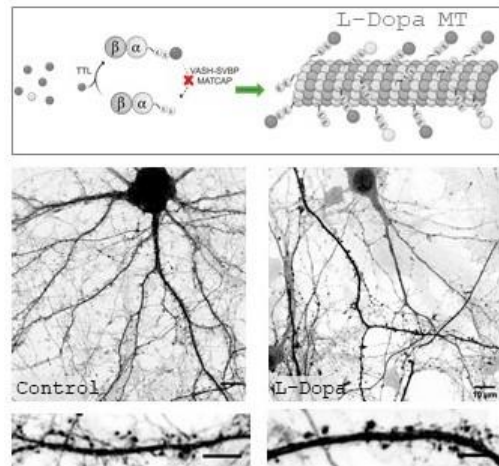


**L-DOPA INCORPORATION INTO TUBULIN ALTERS MICROTUBULE DYNAMICS AND REDUCES DENDRITIC SPINE INVASION AND SYNAPSE MAINTENANCE**

Previous research demonstrated that L-dopa, a tyrosine analog used in the treatment of Parkinson's disease, can be incorporated into  $\alpha$ -tubulin and form microtubules. Now we show that L-dopa treatment in mature wild-type hippocampal neurons reduces dendritic spine density and the number of excitatory synapses, affecting the quality and quantity of synapses. The incorporation of L-dopa into  $\alpha$ -tubulin disrupts microtubule dynamics, leading to decreased microtubule invasion into dendritic spines and increased synaptotoxicity. In neurons lacking key enzymes in the tubulin tyrosination/detyrosination cycle, these effects are absent, confirming the role of L-dopa-modified tubulin in synaptic dysfunction. This highlights the importance of balanced tubulin modification in synaptic health and the need for new strategies in Parkinson's treatment to avoid such side effects.



**JUEVES 5 de SEPTIEMBRE . 12:00 h**

**Zoom:** <https://zoom.us/j/91097843541?pwd=a1VVeXBQZDIrOE5NYW53dVh0WXC3UT09>

**ID de reunión:** 910 9784 3541 **Código de acceso:** 489930



Investigador Independiente . Profesor Adjunto  
**CIQUBIC-CONICET**  
 Departamento de Química Biológica  
 Facultad de Ciencias Químicas  
 Universidad Nacional de Córdoba

**DR. GASTON BISIG**



C I Q U I B I C

**INVITAN DENTRO DE SUS CICLOS DE SEMINARIOS 2024**



I N I N F A

DEPARTAMENTO DE FARMACOLOGÍA



FACULTAD DE FARMACIA Y BIOQUÍMICA

U B A

