Institut NeuroMyoGène

Lyon 1 Inserm cnrs

Seminar

Monday May 30th 14.00

Salle Guillermond – Bâtiment l'Herbier – 9 rue Raphael DUBOIS –
Domaine Universitaire de la DOUA
(http://oscar.univ-lyon1.fr/appli-externe/plan/plans/plan_campus_ouest.html)

Yishi Jin

UC San Diego

http://biology.ucsd.edu/research/faculty/yijin
http://labs.biology.ucsd.edu/yishijin/index.shtml

" Mechanisms regulating synapse maintenance and neural activity"

Abstract

Synapses are organized subcellular structures that transmit information within the nervous system and to other parts of our body. Our studies use C. elegans have uncovered multiple pathways controlling synapse formation, maintenance and function. Using a genetic model mimicking the physiological state of seizures, our recent work have identified novel regulatory themes affecting presynaptic release machinery. We also discovered that a novel immunoglobulin superfamily (IgSF) transmembrane protein mediates synapse and non-neuronal tissue interaction in synapse maintenance. These findings have implications to our understanding of circuit malfunction under disease conditions

If you wish to meet Yishi Jin on Monday May 30th, please contact Jean-Louis Bessereau (jean-louis.bessereau@univ-lyon1.fr).

Institut NeuroMyoGène

Selected recent publications:

Cherra S. J., and **Jin, Y.** A Two-Immunoglobulin-Domain Transmembrane Protein Mediates an Epidermal-Neuronal Interaction to Maintain Synapse Density. Neuron. 2016 Jan 12. pii: S0896-6273(15)01126-5.

Noma, K., and **Jin, Y.** Optogenetic mutagenesis in Caenorhabditis elegans. Nat Commun. 2015 Dec 3;6:8868.

Chen, F., Zhou, Y., Qi, Y. B. Khivansara, V., Li, H., Chun, S. Y., Kim, J. K., Fu, X., and **Jin, Y.**Context-dependent modulation of Pol II CTD phosphatase SSUP-72 regulates alternative polyadenylation in neuronal development. Genes Dev. 2015 Nov 15;29(22):2377-90.

Kurup, N., Yan, D., Goncharov, A., and **Jin, Y.**Dynamic microtubules drive circuit rewiring in the absence of neurite remodeling. Curr Biol. 2015 Jun 15;25(12):1594-605.

Cherra, S., and **Jin, Y.** (2015). Advances in synapse formation: Forging connections in the worm. Wiley Interdiscip Rev Dev Biol. 2015 Mar;4(2):85-97.

Hubert, T., Wu, Z., Chisholm, A. D., and **Jin, Y.** (2014). S6 kinase inhibits intrinsic axon regeneration capacity via AMP kinase in *C. elegans.* J. Neurosci. Jan 15;34(3):758-63.

Zhou, K., Stawicki, T., Goncharov, A., and **Jin, Y.** (2013). Position of UNC-13 in the active zone regulates synaptic vesicle release probability and release kinetics. eLife Nov 12;2:e01180.

Wang, Z., Hou, Y., Guo, X., van der Voet, M., Boxem, M., Dixon, J. E., and **Jin, Y.** (2013) The EBAX-type Cullin-RING E3 ligase and Hsp90 guard the protein quality of the SAX-3/Robo receptor in developing neurons. Neuron, 79(5):903-16.

Stawicki, T. M., Takayanagi-Kiya, S. Zhou, K., and **Jin, Y.** (2013) Neuropeptides function in a homeostatic manner to modulate excitation-inhibition imbalance in *C. elegans*. PLoS Genetics, (5):e1003472.

Qi, Y. B., Po, M., McEachern, P., Kawano, T., Jorgensen, E.M., Zhen, M., and **Jin, Y.** (2013) Hyperactivation of B-type motor neurons results in aberrant synchrony of the *Caenorhabditis elegans* motor circuit. J. Neurosci, 33(12):5319-5325.

Yan, D., and **Jin, Y.** (2012). The DLK-1 kinase is activated by calcium-mediated dissociation from an inhibitory isoform in *C. elegans* neuronal development and axon regeneration. Neuron, 76:534-48.

Qi, B. Y., Garren, E., Shu, X., Tsien, R. Y., and **Jin, Y.** (2012). Photo-inducible cell ablation in *C. elegans* using the genetically encoded singlet oxygen generating protein miniSOG. Proc Natl Acad Sci U S A. 109:7499-504. PMCID: PMC3358873

Chen, L., Wang, Z., Ghosh-Roy, A., Hubert, T., Yan, D., O'Rourke, S., Bowerman, B., Wu, Z., **Jin**. **Y*.,** and Chisholm AD*. (2011) Axon regeneration pathways identified by systematic genetic screening in *C. elegans*. Neuron. 71(6):1043-57.

Stawicki, T.M., Zhou, K., Yochem J., Chen, L., and **Jin, Y.** (2011). TRPM channels modulate epileptic-like convulsions via systemic ion homeostasis. Current Biology 21: 883-8.