

Bonn Lecture Series in Neuroscience



The Rab3-RIM pathway is essential for
neuropeptide secretion in CNS neurons

Selected Publications

Pool size estimations for dense-core vesicles in mammalian CNS neurons. Persoon CM, Moro A, Nassal JP, Farina M, Broeke JH, Arora S, Dominguez N, van Weering JR, **Toonen RF#**, Verhage M. *EMBO J.* 2018 37(20). pii: e99672.

Vti1a/b regulate synaptic vesicle and dense core vesicle secretion via protein sorting at the Golgi. Emperador-Melero J, Huson V, van Weering J, Bollmann C, Fischer von Mollard G, **Toonen RF#**, Verhage M. *Nat Commun.* 2018 9(1):3421

SNAP-25 gene family members differentially support secretory vesicle fusion. Arora S, Saarloos I, Kooistra R, van de Bospoort R, Verhage M, **Toonen RF.** *J Cell Sci.* 2017 Jun 1;130(11):1877-1889.

CAPS-1 promotes fusion competence of stationary dense-core vesicles in presynaptic terminals of mammalian neurons. Farina M, van de Bospoort R, He E, Persoon CM, van Weering JR, Broeke JH, Verhage M, **Toonen RF.** *Elife.* 2015 Nov 18;4:e12968.

Munc13 controls the location and efficiency of dense-core vesicle release in neurons. van de Bospoort R, Farina M, Schmitz SK, de Jong A, de Wit H, Verhage M, **Toonen RF.** *J Cell Biol.* 2012 199(6):883-91.

Dr. Ruud Toonen

Center for Neurogenomics and Cognitive
Research (CNCR), VU University Amsterdam

Tuesday, February 5, 2019, 4.00 pm
Clinic for Epileptology, Conference room,
Ground Floor

Research interests:

Neuropeptide signaling is a central factor in brain communication. Neuropeptide vesicles store, transport and release these neuromodulators. However, in contrast to well-characterized synaptic vesicle release principles neuropeptide vesicle fusion mechanisms remain largely unknown. My lab studies the molecular mechanisms that transport and recruit these vesicles to release sites, their calcium dependent fusion and the effect of secreted neuropeptides on synaptic plasticity.