

RIM 1/2

Cat.No. 140 203; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: 1 : 500 IHC: 1 : 500 (see remarks) IHC-P/FFPE: 1 : 500 EM: yes
Immunogen	Recombinant protein corresponding to AA 1 to 466 from rat Rim2 (UniProt Id: Q9JIS1)
Reactivity	Reacts with: human (Q86UR5, Q9UQ26), rat (Q9JIR4, Q9JIS1), mouse (Q99NE5, Q9EQZ7), zebrafish. Other species not tested yet.
Specificity	RIM 2 including splice variants, cross reacts to RIM 1.
Remarks	IHC: This antibody requires antigen retrieval with pepsin according to: Lorincz A & Nusser Z (2008). recommended protocol

TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

RIMs are presynaptic active zone proteins that regulate Ca²⁺ triggered release of neurotransmitters. RIM 1α and RIM 2α are composed of an N-terminal zinc-finger domain, a central PDZ domain and two C-terminal C2 domains that are separated by long alternatively spliced sequences. RIM 2β consists of a specific N-terminus, the central PDZ domain and the C-terminal C2 domains. The mRNA for RIM 2β is transcribed from an internal promoter of the RIM 2α gene. Shorter variants of RIM 2 which comprise only the C-terminal C₂B domain and some flanking regions are referred to as NIM 2 / RIM 2γ and NIM 3 / RIM 3γ.

Selected References SYSY Antibodies

- RIM, Munc13, and Rab3A interplay in acrosomal exocytosis. Bello OD, Zanetti MN, Mayorga LS, Michaut MA. *Experimental cell research* (2012) 318(5): 478-88. **WB, ICC**
- Rab3-interacting molecule gamma isoforms lacking the Rab3-binding domain induce long lasting currents but block neurotransmitter vesicle anchoring in voltage-dependent P/Q-type Ca²⁺ channels. Uriu Y, Kiyonaka S, Miki T, Yagi M, Akiyama S, Mori E, Nakao A, Beedle AM, Campbell KP, Wakamori M, Mori Y, et al. *The Journal of biological chemistry* (2010) 285(28): 21750-67. **WB, IP**
- Extensive remodeling of the presynaptic cytomatrix upon homeostatic adaptation to network activity silencing. Lazarevic V, Schöne C, Heine M, Gundelfinger ED, Fejtova A. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2011) 31(28): 10189-200. **WB, ICC**
- Rab3a interacting molecule (RIM) and the tethering of pre-synaptic transmitter release site-associated CaV2.2 calcium channels. Wong FK, Stanley EF. *Journal of neurochemistry* (2010) 112(2): 463-73. **WB, IP; tested species: chicken**
- Release probability of hippocampal glutamatergic terminals scales with the size of the active zone. Holderith N, Lorincz A, Katona G, Rózsa B, Kulik A, Watanabe M, Nusser Z. *Nature neuroscience* (2012) 15(7): 988-97. **EM**
- Deletion of the presynaptic scaffold CAST reduces active zone size in rod photoreceptors and impairs visual processing. tom Dieck S, Specht D, Strenzke N, Hida Y, Krishnamoorthy V, Schmidt KF, Inoue E, Ishizaki H, Tanaka-Okamoto M, Miyoshi J, Hagiwara A, et al. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2012) 32(35): 12192-203. **IHC**
- Visualization of Synchronous or Asynchronous Release of Single Synaptic Vesicle in Active-Zone-Like Membrane Formed on Neurologin-Coated Glass Surface. Funahashi J, Tanaka H, Hirano T. *Frontiers in cellular neuroscience* (2018) 12: 140. **ICC; tested species: rat**
- Riluzole attenuates the efficacy of glutamatergic transmission by interfering with the size of the readily releasable neurotransmitter pool. Lazarevic V, Yang Y, Ivanova D, Fejtova A, Svenningsson P. *Neuropharmacology* (2018) : **ICC; tested species: rat**
- 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. *Nature communications* (2018) 9(1): 3421. **ICC; tested species: mouse**
- Objective quantification of nanoscale protein distributions. Szoboszlai M, Kirizs T, Nusser Z. *Scientific reports* (2017) 7(1): 15240. **EM; tested species: mouse**
- Nanoscale Structural Plasticity of the Active Zone Matrix Modulates Presynaptic Function. Glebov OO, Jackson RE, Winterflood CM, Owen DM, Barker EA, Doherty P, Ewers H, Burrone J. *Cell reports* (2017) 18(11): 2715-2728. **ICC**
- RIM-binding protein 2 regulates release probability by fine-tuning calcium channel localization at murine hippocampal synapses. Grauel MK, Maglione M, Reddy-Alla S, Willmes CG, Brockmann MM, Trimbuch T, Rosenmund T, Pangalos M, Vardar G, Stumpf A, Walter AM, et al. *Proceedings of the National Academy of Sciences of the United States of America* (2016) 113(41): 11615-11620. **WB; tested species: mouse**
- Inhibitory and excitatory axon terminals share a common nano-architecture of their Cav2.1 (P/Q-type) Ca(2+) channels. Althof D, Baehrens D, Watanabe M, Suzuki N, Fakler B, Kulik Á. *Frontiers in cellular neuroscience* (2015) 9: 315. **EM**
- Tonic endocannabinoid-mediated modulation of GABA release is independent of the CB1 content of axon terminals. Lenkey N, Kirizs T, Holderith N, Máté Z, Szabó G, Vizi ES, Hájos N, Nusser Z. *Nature communications* (2015) 6: 6557. **EM**
- Inter-channel scaffolding of presynaptic CaV2.2 via the C terminal PDZ ligand domain. Gardezi SR, Li Q, Stanley EF. *Biology open* (2013) 2(5): 492-8. **WB**
- Liprin-α2 promotes the presynaptic recruitment and turnover of RIM1/CASK to facilitate synaptic transmission. Spangler SA, Schmitz SK, Kevenaar JT, de Graaff E, de Wit H, Demmers J, Toonen RF, Hoogenraad CC. *The Journal of cell biology* (2013) 201(6): 915-28. **WB; tested species: rat**
- A readily retrievable pool of synaptic vesicles. Hua Y, Sinha R, Thiel CS, Schmidt R, Hüve J, Martens H, Hell SW, Egner A, Klingauf J. *Nature neuroscience* (2011) 14(7): 833-9. **ICC**