

Rab 5

Cat.No. 108 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For reconstitution add 100 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 up to 1 : 10000 (AP staining) IP: yes ICC: 1 : 100 up to 1 : 1000 (see remarks) IHC: not tested yet IHC-P/FFPE: not tested yet
Clone	621.3
Subtype	IgG2a (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 215 from rat Rab5 (UniProt Id: O88565)
Reactivity	Reacts with: human (Q9UJ41), rat (M0RC99), mouse (Q9JM13), hamster. No signal: zebrafish. Other species not tested yet.
Specificity	Specific for rab 5 (probably only rab 5a). No cross-reactivity to other rab proteins.
Remarks	ICC: Not suitable for ICC of aldehyde- fixed tissues or cells. - Recommended for human samples. - This antibody was used very successfully for immunoisolation of early endosomes and for the differentiation of early endosomes from related trafficking organelles in neurons and nonneuronal cells.

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

Rab 5 is a member of the Rab protein family that belongs to the ras-related superfamily of small monomeric GTPases. Rab 5 is ubiquitously expressed in all tissues where it functions in the fusion of early endosomes which is the first fusion step of endocytic organelles after their formation and detachment from the plasma membrane. It is presently the best marker with selectivity for this compartment.

Selected References SYSY Antibodies

Quantitative analysis of synaptic vesicle Rabs uncovers distinct yet overlapping roles for Rab3a and Rab27b in Ca²⁺-triggered exocytosis.
Pavlos NJ, Grønberg M, Riedel D, Chua JJ, Boyken J, Kloepper TH, Urlaub H, Rizzoli SO, Jahn R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 30(40): 13441-53. **WB, ICC**

The serine/threonine kinase Ndr2 controls integrin trafficking and integrin-dependent neurite growth.
Rehberg K, Kliche S, Madencioglu DA, Thiere M, Müller B, Meineke BM, Freund C, Budinger E, Stork O
The Journal of neuroscience : the official journal of the Society for Neuroscience (2014) 34(15): 5342-54. **WB, ICC**

Rab5 and Rab7 control endocytic sorting along the axonal retrograde transport pathway.
Deinhardt K, Salinas S, Verastegui C, Watson R, Worth D, Hanrahan S, Bucci C, Schiavo G
Neuron (2006) 52(2): 293-305. **ICC, WB**

Sunday driver interacts with two distinct classes of axonal organelles.
Abe N, Almenar-Queralt A, Lillo C, Shen Z, Lozach J, Briggs SP, Williams DS, Goldstein LS, Cavalli V
The Journal of biological chemistry (2009) 284(50): 34628-39. **IP**

Parkinson Sac Domain Mutation in Synaptojanin 1 Impairs Clathrin Uncoating at Synapses and Triggers Dystrophic Changes in Dopaminergic Axons.
Cao M, Wu Y, Ashrafi G, McCartney AJ, Wheeler H, Bushong EA, Boassa D, Ellisman MH, Ryan TA, De Camilli P
Neuron (2017) 93(4): 882-896.e5. **WB; tested species: mouse**

Optogenetic acidification of synaptic vesicles and lysosomes.
Rost BR, Schneider F, Grauel MK, Wozny C, Bentz C, Blessing A, Rosenmund T, Jentsch TJ, Schmitz D, Hegemann P, Rosenmund C, et al.
Nature neuroscience (2015) 18(12): 1845-1852. **ICC; tested species: human**

Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins.
Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al.
Science (New York, N.Y.) (2014) 344(6187): 1023-8. **WB**

Regulation of mammalian autophagy by class II and III PI 3-kinases through PI3P synthesis.
Devereaux K, Dall'Armi C, Alcazar-Roman A, Ogasawara Y, Zhou X, Wang F, Yamamoto A, De Camilli P, Di Paolo G
PloS one (2013) 8(10): e76405. **WB; tested species: mouse**

Small-scale isolation of synaptic vesicles from mammalian brain.
Ahmed S, Holt M, Riedel D, Jahn R
Nature protocols (2013) 8(5): 998-1009. **WB; tested species: mouse**

Comparative lipidomics analysis of HIV-1 particles and their producer cell membrane in different cell lines.
Lorizate M, Sachsenheimer T, Glass B, Habermann A, Gerl MJ, Kräusslich HG, Brügger B
Cellular microbiology (2013) 15(2): 292-304. **WB**

CSPa knockout causes neurodegeneration by impairing SNAP-25 function.
Sharma M, Burré J, Bronk P, Zhang Y, Xu W, Südhof TC
The EMBO journal (2012) 31(4): 829-41. **WB; tested species: mouse**

Synaptic and vesicular coexistence of VGLUT and VGAT in selected excitatory and inhibitory synapses.
Zander JF, Münster-Wandowski A, Brunk I, Pahnner I, Gómez-Lira G, Heinemann U, Gutiérrez R, Laube G, Ahnert-Hilger G
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 30(22): 7634-45. **IP**

Localization to mature melanosomes by virtue of cytoplasmic dileucine motifs is required for human OCA2 function.
Sitaram A, Piccirillo R, Palmisano I, Harper DC, Dell'Angelica EC, Schiaffino MV, Marks MS
Molecular biology of the cell (2009) 20(5): 1464-77. **WB**

Neurotransmitter release regulated by a MALS-liprin-alpha presynaptic complex.
Olsen O, Moore KA, Fukata M, Kazuta T, Trinidad JC, Kauer FW, Streuli M, Misawa H, Burlingame AL, Nicoll RA, Bredt DS, et al.
The Journal of cell biology (2005) 170(7): 1127-34. **WB**

Localization versus function of Rab3 proteins. Evidence for a common regulatory role in controlling fusion.
Schlüter OM, Khvotchev M, Jahn R, Südhof TC
The Journal of biological chemistry (2002) 277(43): 40919-29. **IP**

SNARE proteins are highly enriched in lipid rafts in PC12 cells: implications for the spatial control of exocytosis.
Chamberlain LH, Burgoyne RD, Gould GW
Proceedings of the National Academy of Sciences of the United States of America (2001) 98(10): 5619-24. **WB**

The R-SNARE endobrevin/VAMP-8 mediates homotypic fusion of early endosomes and late endosomes.
Antonin W, Holroyd C, Tikkanen R, Höning S, Jahn R
Molecular biology of the cell (2000) 11(10): 3289-98. **WB**