

Rabphilin 3a

Cat.No. 118-0P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg peptide, 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. Control peptides should also be stored at -20°C when still lyophilized!
Immunogen	Synthetic peptide corresponding to AA 671 to 684 from rat Rabphilin3a (UniProt Id: P47709)
Recommended dilution	Optimal concentrations should be determined by the end-user.
matching antibodies	118 002, 118 003
Remarks	This control peptide consists of the synthetic peptide (WHQLQNENHVSSD) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of peptide needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

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

Rabphilin 3a is a putative effector protein for the low molecular weight GTP-binding protein rab 3. Rab 3 occurs in four isoforms (Rab 3a, b, c and d), all of which probably bind to rabphilin 3a when in the GTP-bound form.

Rabphilin 3a contains an N-terminal Zn²⁺-finger sequence that is essential for binding rab 3, and two C-terminal C2 - domains that may bind Ca²⁺. It does not have a transmembrane region.

Rabphilin 3a is primarily expressed in neurons where it is localized to synaptic vesicles. It is probably recruited to synaptic vesicles by rab 3a and 3c. The structure of rabphilin 3a and its interaction with rab 3 suggests that it may be a Ca²⁺ sensor on synaptic vesicles that is recruited to synaptic vesicles as a function of GTP by rab 3.

Selected General References

Rabphilin knock-out mice reveal that rabphilin is not required for rab3 function in regulating neurotransmitter release. Schlüter OM, Schnell E, Verhage M, Tzonopoulos T, Nicoll RA, Janz R, Malenka RC, Geppert M, Südhof TC The Journal of neuroscience : the official journal of the Society for Neuroscience (1999) 19(14): 5834-46.

Genetics of synaptic vesicle function: toward the complete functional anatomy of an organelle. Fernández-Chacón R, Südhof TC Annual review of physiology (1999) 61: 753-76.

Rab3 reversibly recruits rabphilin to synaptic vesicles by a mechanism analogous to raf recruitment by ras. Stahl B, Chou JH, Li C, Südhof TC, Jahn R The EMBO journal (1996) 15(8): 1799-809.

Synaptic targeting of rabphilin-3A, a synaptic vesicle Ca²⁺/phospholipid-binding protein, depends on rab3A/3C. Li C, Takei K, Geppert M, Daniell L, Stenius K, Chapman ER, Jahn R, De Camilli P, Südhof TC Neuron (1994) 13(4): 885-98.

Rabphilin-3A, a putative target protein for smg p25A/rab3A p25 small GTP-binding protein related to synaptotagmin. Shirataki H, Kaibuchi K, Sakoda T, Kishida S, Yamaguchi T, Wada K, Miyazaki M, Takai Y Molecular and cellular biology (1993) 13(4): 2061-8.