Revision 1

#9765 Store at -20°C

Vesicle Trafficking Antibody Sampler Kit

1 Kit (8 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Phospho-Caveolin-1 (Tyr14) Antibody	3251	20 µl	23, 25 kDa	Rabbit
Caveolin-1 (D46G3) XP® Rabbit mAb	3267	20 µl	21, 24 kDa	Rabbit IgG
Clathrin Heavy Chain (D3C6) XP® Rabbit mAb	4796	20 µl	190 kDa	Rabbit IgG
APPL1 (D83H4) XP® Rabbit mAb	3858	20 µl	82 kDa	Rabbit IgG
EEA1 (C45B10) Rabbit mAb	3288	20 µl	170 kDa	Rabbit IgG
Syntaxin 6 (C34B2) Rabbit mAb	2869	20 µl	32 kDa	Rabbit IgG
Rab5A (E6N8S) Mouse mAb	46449	20 µl	25 kDa	Mouse IgG1
GOPC (D10A12) Rabbit mAb	8576	20 µl	59 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat
Anti-mouse IgG, HRP-linked Antibody	7076	100 µl		Horse

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Vesicle Trafficking Antibody Sampler kit provides an economical means to analyze proteins involved in the intracellular transport of cargo proteins. This kit includes enough primary and secondary antibody to perform two western blot experiments.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

Vesicle trafficking is an integral cellular process and the associated proteins involved also play major roles in other signaling pathways. Caveolins are involved in diverse biological functions including vesicular trafficking, cholesterol homeostasis, cell adhesion, apoptosis, and are also indicated in neurodegenerative disease (1). It is believed that caveolins serve as scaffolding proteins for the integration of signal transduction. Phosphorylation at Tyr14 is essential for caveolin association with SH2 or PTB domain-containing adaptor proteins, such as GRB7 (2-4).

Clathrin-coated vesicles provide for the intracellular transport of proteins following endocytosis and during multiple vesicle trafficking pathways. Vesicles form at specialized areas of the cell membrane where clathrin and associated proteins form clathrin-coated pits. Invagination of these cell membrane-associated pits internalizes proteins and forms an intracellular clathrin-coated vesicle (5,6). Clathrin is the most abundant protein in these vesicles and is present as a basic assembly unit called a triskelion. Each clathrin triskelion is composed of three clathrin heavy chains and three clathrin light chains. Clathrin heavy chain proteins are composed of several functional domains that associate with other vesicle proteins (6).

The APPL1 multidomain adaptor protein is a BAR-domain protein family member that is involved in membrane trafficking within a number of signal transduction pathways (7).

EEA1 is an early endosomal marker and a Rab5 effector protein essential for early endosomal membrane fusion and trafficking (8,9). Syntaxin 6 is a ubiquitously expressed S25C family member of the SNARE proteins (10,11). Syntaxin 6 protein is localized to the trans-Golgi and within endosomes and regulates membrane trafficking by partnering with a variety of other SNARE proteins (12-14). It has two coiled-coil domains (CC1 and CC2) located in the amino-terminal region and a PDZ domain in the carboxy-terminal region (15). The CC2 domain and its adjacent linker region mediate the association of GOPC with the Golgi protein golgin-160 and the Q-SNARE protein syntaxin 6 (15,16). The PDZ domain of GOPC interacts with the carboxy terminus of target proteins to mediate target protein vesicular trafficking and surface expression (17-20).

Rab5 is a member of the Ras superfamily of small Rab GTPases. Rab5 is localized at the plasma membrane and early endosomes and functions as a key regulator of vesicular trafficking during early endocytosis (21).

Background References

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