Revision 1

#9385 Store at -20°C

Rab Family Antibody Sampler Kit

1 Kit (5 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Rab4 Antibody	2167	20 µl	25 kDa	Rabbit
Rab5A (E6N8S) Mouse mAb	46449	20 µl	25 kDa	Mouse IgG1
Rab7 (D95F2) XP® Rabbit mAb	9367	20 µl	23 kDa	Rabbit IgG
Rab9A (D52G8) XP® Rabbit mAb	5118	20 µl	23 kDa	Rabbit IgG
Rab11 (D4F5) XP® Rabbit mAb	5589	20 µl	25 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 Rab Family Antibody Sampler Kit provides an economical means to evaluate the presence and status of Rab proteins in cells. This kit provides enough primary and secondary antibodies to perform two Western blot experiments per primary antibody.

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

Rab family proteins are GTPases and members of the Ras superfamily of monomeric G proteins. These membrane-associated proteins are involved in many aspects of vesicle-mediated transport, taking part in the initial vesicle formation, transport of vesicles along the cytoskeleton, and eventual fusion of vesicle and target membranes. Rab4 is localized at early endosomes/recycling endosomes and functions as a key regulator for sorting/recycling of membrane and proteins (1,2). Both Rab4A and Rab4B isoforms are localized to similar cellular compartments and are believed to have similar functions (4). Rab4 interacts with several Rab4 effectors in a complex on a special endosome site to promote membrane/protein recycling (1,3). Rab5 is localized to the plasma membrane and early endosome and functions as a key regulator of vesicle trafficking during early endocytosis (1). The conformational change between Rab5-GTP and Rab5-GDP is essential for its biological function as a rate-limiting regulator at multiple steps during endocytosis (1,5). Similar to Rab4, Rab5 also interacts with specific Rab5 effectors on a specialized endosomal Rab domain to promote recycling between endosome and the plasma membrane (1,5,6). Both Rab7 and Rab9 are located in late endosomes but exert different functions. Rab7 associates with the RIPL effector protein to control membrane trafficking from early to late endosome and to lysosomes (7,8). Rab7 also helps to regulate growth receptor endocytic trafficking and degradation, and maturation of phagosome and autophagic vacuoles (8-11). Rab9 interacts with its effector proteins p40 and TIP47 (12,13) to promote the MPR (mannose 6-phosphate receptor)-associated lysosomal enzyme transport between late endosomes and the trans Golgi network (14,15). Rab11 (isoforms Rab11a and Rab11b) functions as a key regulator in the recycling of perinuclear, plasma membrane and Golgi compartment endosomes (16,17). Despite some overlap, distinct differences exist between Rab11a and Rab11b in both their cellular distribution and functional roles. Rab11a is ubiquitously expressed while Rab11b is found mainly in the heart and brain (18,19). Like other Rab proteins, Rab11 functions when associated with Rab11 family interacting proteins (FIPs). The three distinct classes of Rab11 FIPs all share a conserved carboxy-terminal Rab-binding domain that allows Rab-FIP protein interaction. When bound together, these proteins are thought to regulate membrane-associated protein sorting (20,21).

Background References

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