

# Anti-Rab 5

Catalog# SPC-168 C/D

Size: 25/100µg

PO Box 30244, Suite 405,  
3989 Quadra Street,  
Victoria, BC V8X 5E1, Canada

This product is for *in vitro* research use only and is not intended for use in humans or animals

## StressMarq

Biosciences Inc.

Orders • [sales@stressmarq.com](mailto:sales@stressmarq.com)

Tel: • +1 250 294 9065

Fax: • +1 250 294 9025

Email • [info@stressmarq.com](mailto:info@stressmarq.com)

Web • [www.stressmarq.com](http://www.stressmarq.com)

Product	Rabbit anti-Rab5 antibody, polyclonal
Clone	N/A
Immunogen	Human Rab5 synthetic peptide conjugated to KLH; identical to dog Rab5 sequence over the residues.
Host and Subclass	Rabbit polyclonal
Cited Applications	WB (4, 5)
Specificity	The antibody recognizes 26 kDa Rab5 of human, mouse, monkey, bovine and rat origins.
Species cross-reactivity	Human, Mouse, Monkey, Bovine and Rat. Reactivity to other species has not been tested.
Format	Protein A Purified. In 1x PBS, 50% glycerol and 0.09% sodium azide.
Working dilution	Recommended dilution for WB 1:1000
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

### Scientific Background

Rab5 is a 24kDa member of the Rab family of small guanosine triphosphatases (GTPases), Ras superfamily. Rab GTPases are central regulators of membrane trafficking in the eukaryotic cell. Their regulatory capacity depends on their ability to cycle between the GDP-bound inactive and GTP-bound active states. This conversion is regulated by GDP/GTP exchange factors (GEPs), GDP dissociation inhibitors (GDIs) and GTPase-activating proteins (GAPs) (1, 2). Activation of a Rab protein is coupled to its association with intracellular membranes, allowing it to recruit downstream effector proteins to the cytoplasmic surface of a

subcellular compartment (3). Through these proteins, Rab GTPases regulate vesicle formation, actin- and tubulin-dependent vesicle movement, and membrane fusion(1). Rab proteins contain conserved regions involved in guanine-nucleotide binding, and hypervariable COOH-terminal domains with a cysteine motif implicated in subcellular targeting. Post-translational modification of the cysteine motif with one or two geranyl groups is essential for the membrane association and correct intracellular localization of Rab proteins(3). Each Rab shows a characteristic subcellular distribution (4).

In particular, Rab5 is ubiquitously expressed in human tissues. It localizes mainly to early endosomes, but is also present on the plasma membrane. It regulates the fusion between endocytic vesicles and early endosomes, as well as the homotypic fusion between early endosomes (5). Among the proteins recruited by the GTP-bound active Rab5 are Rabaptin-5 and EEA1 (6). Anti-Rab5 may be used as an early endosome marker.

### Selected References

1. Stenmark H., and Olkkonen V.M. (2001) *Genome Biol.* 2: 3007.1-3007.7.
2. Takai Y., et al. (2001) *Physiol. Rev.* 8:, 153-208.
3. Ali B.R., et al. (2004) *J. Cell Sci.* 117: 6401-6412.
4. Zerial M., and McBride H. (2001) *Nat. Rev. Mol. Cell Biol.* 2: 107-117.
5. Sonnichsen B., et al. (2000) *J. Cell Biol.* 149: 901-913
6. Woodman P.G. (2000) *Traffic.* 1: 695-701.

#### Certificate of Analysis

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1 µL/mL of SPC-168 was sufficient for detection of free ubiquitin in 15µg of HeLa lysate by ECL immunoblot analysis using Donkey anti-rabbit IgG:HRP as the secondary antibody.

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# Material Safety Data Sheet

## Anti-Rab5 (Polyclonal Antibody) SPC-168

This product is for *in vitro* research use only and is not intended for use in humans or animals

The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

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### Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

<u>Known Hazardous Components</u>	<u>CAS Number</u>	<u>Percent</u>
Sodium Azide	26628-22-8	0.09

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### Physical Data

This product consists of rabbit immunoglobulin in PBS buffer with 50% glycerol containing 0.09% sodium azide shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

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### Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

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### Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

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### Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

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### Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

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### First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.

Authorized: StressMarq Biosciences Inc.  
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