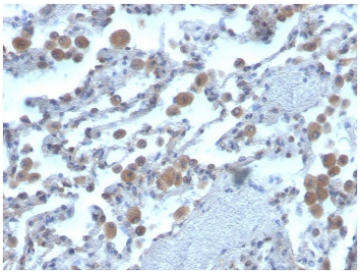
RAC1 Antibody / Rac family small GTPase 1a [clone CPTC-RAC1-1] (V7332)

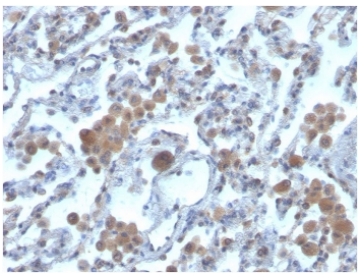
Catalog No.	Formulation	Size
V7332-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7332-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7332SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1
Clone Name	CPTC-RAC1-1
Purity	Protein G affinity chromatography
UniProt	P63000
Localization	Cell membrane, cytoplasm
Applications	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This RAC1 antibody is available for research use only.



IHC staining of FFPE human lung with lung antibody. HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



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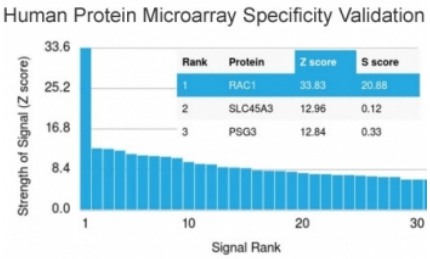
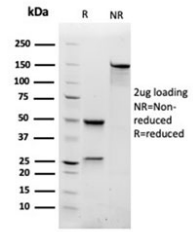


Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using RAC1 antibody (clone CPTC-RAC1-1). These results demonstrate the foremost specificity of the CPTC-RAC1-1 mAb. Z- and S- score: The Z-score represents the strength of a signal that an antibody (in combination with a fluorescently-tagged anti-IgG secondary Ab) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If the targets on the HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-scores. The S-score therefore represents the relative target specificity of an Ab to its intended target.



SDS-PAGE analysis of purified, BSA-free RAC1 antibody as confirmation of integrity and purity.

Description

RAC1 antibody detects Ras-related C3 botulinum toxin substrate 1, a small GTP-binding protein encoded by the RAC1 gene. RAC1 is a member of the Rho family of GTPases, which regulate actin cytoskeleton dynamics, gene transcription, and cell cycle progression. By cycling between active GTP-bound and inactive GDP-bound states, RAC1 controls cell migration, adhesion, polarity, and reactive oxygen species production. Because of its central role in cell signaling and cancer biology, RAC1 antibody is an important tool in molecular and cellular research.

RAC1 is a 21 kDa protein with conserved switch regions that undergo conformational changes upon GTP binding and hydrolysis. Activated RAC1 interacts with downstream effectors such as PAK kinases and WAVE complexes, driving actin polymerization and lamellipodia formation. This activity allows cells to migrate, spread, and adapt to environmental cues. RAC1 also participates in NADPH oxidase activation, leading to controlled production of reactive oxygen species during immune defense.

The RAC1 antibody clone CPTC-RAC1-1 provides specific and reproducible detection. Clone CPTC-RAC1-1 has been applied in peer-reviewed studies investigating actin remodeling, tumor invasion, and neuronal development. Its reliability supports use in Western blotting, immunohistochemistry, and immunoprecipitation, where accurate detection of RAC1 is required for mechanistic studies.

Research using clone CPTC-RAC1-1 has revealed how dysregulation of RAC1 contributes to disease. Overactive RAC1 signaling promotes tumor growth, epithelial-mesenchymal transition, and metastasis, while mutations have been linked to developmental disorders and intellectual disability. In the nervous system, RAC1 is critical for axon guidance and synaptic plasticity. In immunity, RAC1 regulates leukocyte trafficking and phagocytic responses. These wide-ranging roles demonstrate the importance of RAC1 detection in both health and pathology.

NSJ Bioreagents supplies this RAC1 antibody to support research in cancer biology, neuroscience, and cytoskeletal signaling. Alternate names include Ras-related C3 botulinum toxin substrate 1 antibody, rho family small GTPase antibody, cell motility regulator antibody, NADPH oxidase activator antibody, and lamellipodia regulator antibody.

Application Notes

Optimal dilution of the RAC1 antibody should be determined by the researcher.

Immunogen

Full length recombinant human protein was used as the immunogen for this RAC1 antibody.

Storage

Store the RAC1 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).