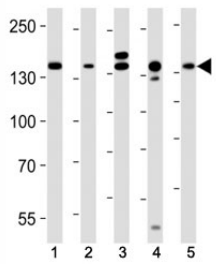
Raptor Antibody / Regulatory Associated Protein of mTOR [clone 1411CT316.2.151.34] (F52807)

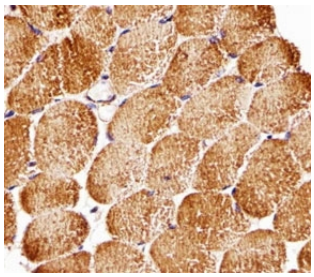
Catalog No.	Formulation	Size
F52807-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F52807-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, k
Clone Name	1411CT316.2.151.34
Purity	Purified
UniProt	Q8N122
Applications	IHC (Paraffin) : 1:25 Western Blot : 1:500-1:1000
Limitations	This Raptor antibody is available for research use only.



Western blot analysis of lysate from (1) HeLa, (2) MCF-7, (3) mouse C2C12, (4) mouse NIH3T3, (5) rat C6 cell line using Raptor antibody at 1:1000. Predicted molecular weight ~ 149 kDa.



Immunohistochemical analysis of paraffin-embedded human skeletal muscle using Raptor antibody at 1:25 dilution.

Description

Raptor antibody targets Regulatory Associated Protein of mTOR, a core scaffolding component of the mechanistic target of rapamycin complex 1. Raptor, encoded by the RPTOR gene, is predominantly localized to the cytoplasm and associates with intracellular membranes, where it functions as an essential adaptor protein within the mTORC1 signaling complex. Regulatory Associated Protein of mTOR is broadly expressed across tissues and cell types, reflecting its central role in integrating nutrient, growth factor, and energy signals that regulate cell growth and metabolism.

Functionally, Raptor serves as the substrate recognition subunit of mTORC1, binding TOR signaling motif-containing proteins and positioning them for phosphorylation by mTOR. A short functional summary is that Raptor enables mTORC1 to selectively phosphorylate downstream targets involved in protein synthesis, autophagy, and metabolic control. Through this activity, Regulatory Associated Protein of mTOR plays a critical role in controlling anabolic and catabolic balance in response to environmental cues.

At the molecular level, Raptor contains multiple HEAT repeat domains and conserved interaction motifs that mediate binding to mTOR, other mTORC1 components, and downstream substrates. Its association with mTORC1 is regulated by phosphorylation and nutrient availability, allowing dynamic control of signaling output. Raptor antibody reagents are widely used to study mTORC1 assembly, signaling activity, and subcellular distribution under different metabolic and stress conditions.

From a biological and disease relevance perspective, dysregulation of Raptor and mTORC1 signaling has been implicated in cancer, metabolic disorders, neurodegeneration, and aging. Altered expression or activity of Regulatory Associated Protein of mTOR can influence cell proliferation, survival, and autophagic flux. Raptor is therefore a key target in studies examining mTOR pathway modulation, drug response, and disease-associated signaling alterations.

Developmentally, Raptor is required for normal cell growth and organismal development, with loss of function leading to impaired mTORC1 signaling and metabolic defects. Raptor antibody tools support research applications aimed at characterizing mTORC1 pathway regulation, nutrient sensing mechanisms, and signaling network integration. Raptor antibodies from NSJ Bioreagents are supplied for research use to support studies in cell signaling, metabolism, and translational research.

Application Notes

Titration of the RAPTOR antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

This Raptor antibody was produced from a mouse immunized with recombinant protein.

Storage

Aliquot the Raptor antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.