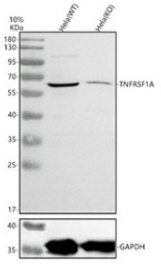
TNFR1 Antibody / TNFRSF1A Polyclonal Antibody (R32696)

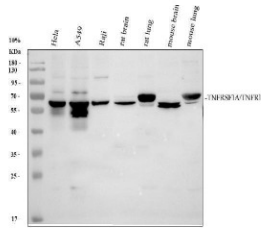
Catalog No.	Formulation	Size
R32696	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

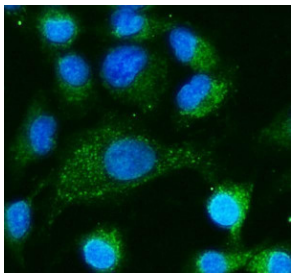
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P19438
Applications	Western blot: 0.5-1ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This TNFR1 antibody is available for research use only.



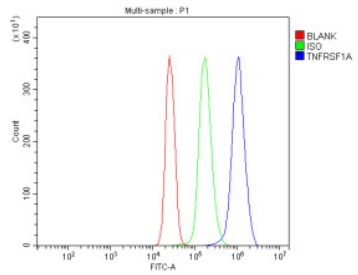
TNFR1 Antibody WB in HeLa Wild-Type and TNFRSF1A Knockout Cells. Western blot analysis of human HeLa wild-type (lane 1) and TNFRSF1A knockout (lane 2) whole-cell lysates using the TNFRSF1A Polyclonal Antibody. A prominent band at approximately 60-65 kDa is detected in wild-type cells and is substantially reduced in the knockout sample, with residual signal at the corresponding position. The predicted molecular weight of TNFR1 is approximately 50 kDa, although glycosylation can increase its apparent molecular weight during SDS-PAGE. Samples were loaded at 30 ug per lane and separated by 10% SDS-PAGE under reducing conditions. The primary antibody was used at 0.5 ug/ml, with GAPDH serving as the loading control.



TNFR1 Antibody WB in Human Cell Lines and Rat and Mouse Tissues. Western blot analysis of human HeLa (lane 1), A549 (lane 2), and Raji (lane 3) whole-cell lysates; rat brain (lane 4) and lung (lane 5); and mouse brain (lane 6) and lung (lane 7) tissue lysates using the TNFRSF1A Polyclonal Antibody. Immunoreactive bands are detected at approximately 55-70 kDa across the seven samples, compared with the predicted molecular weight of approximately 50 kDa for TNFR1. The higher apparent molecular weights may reflect glycosylation of TNFR1, although the modifications responsible for individual bands have not been confirmed. Multiple bands are particularly evident in A549 cells, and the identity of these additional species has not been established. Samples were loaded at 30 ug per lane and separated by 10% SDS-PAGE under reducing conditions. The primary antibody was used at 0.5 ug/ml.



TNFR1 Antibody IF in Human A549 Cells. Immunofluorescence staining of human A549 cells using the TNFRSF1A Polyclonal Antibody at 5 ug/ml, detected with Fluoro488-conjugated goat anti-rabbit IgG (green), with DAPI nuclear counterstaining (blue). TNFR1 immunoreactivity is observed predominantly in the cytoplasm, exhibiting a granular and punctate distribution with areas of perinuclear enrichment. Staining is also visible along portions of the cell periphery, while the nuclei show comparatively limited immunoreactivity. Enzymatic antigen retrieval was performed for 15 minutes, followed by blocking with 10% goat serum. The primary antibody was incubated overnight at 4Â°C.



TNFR1 Antibody FACS in Human U937 Cells. Flow cytometry analysis of human cells using the TNFRSF1A Polyclonal Antibody at 1 ug per million cells, detected with DyLight 488-conjugated goat anti-rabbit IgG. The antibody-stained population (blue) exhibits a clear rightward fluorescence shift relative to the rabbit IgG isotype control (green) and unlabeled cells (red), demonstrating TNFR1-associated immunoreactivity. Cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. The primary antibody was incubated for 30 minutes at 20Â°C, followed by secondary antibody incubation for 30 minutes at 20Â°C.

Description

TNFR1 Antibody / TNFRSF1A Polyclonal Antibody recognizes tumor necrosis factor receptor superfamily member 1A (TNFRSF1A), commonly known as TNFR1, CD120a, or p55 TNF receptor. TNFR1 is a transmembrane receptor that mediates cellular responses to tumor necrosis factor alpha (TNF alpha), a major inflammatory cytokine involved in immune regulation, tissue homeostasis, and cellular stress responses. Unlike TNFR2, which has a more restricted expression pattern, TNFR1 is widely expressed and participates in diverse signaling pathways controlling inflammation, survival, and programmed cell death.

TNFR1 contains an extracellular ligand-binding region with cysteine-rich domains, a single transmembrane segment, and an intracellular death domain. Binding of TNF alpha promotes receptor trimerization and recruitment of signaling proteins, including TRADD, RIPK1, TRAF2, and cellular inhibitor of apoptosis proteins. These interactions initiate the formation of membrane-associated signaling complexes that activate NF-kappaB and MAPK pathways, promoting inflammatory gene expression and cellular survival. The outcome depends on receptor-associated protein interactions, post-translational modifications, and the cellular signaling environment.

Under conditions that favor cell death, TNFR1 signaling can transition toward cytoplasmic complexes involving FADD and caspase-8, leading to extrinsic apoptosis. When caspase-8 activity is inhibited, RIPK1 and RIPK3 may promote necroptosis through activation of MLKL. TNFR1 therefore occupies a central position in the regulation of inflammatory signaling and cell fate decisions. Its activity is controlled through receptor internalization, ubiquitination, proteolytic shedding, and interactions with regulatory proteins that influence signaling duration and pathway selection.

Abnormal TNFR1 signaling has been implicated in chronic inflammatory disorders, autoimmune disease,

neuroinflammation, and tissue injury. Mutations in TNFRSF1A are associated with TNF receptor-associated periodic syndrome (TRAPS), an inherited autoinflammatory condition characterized by recurrent inflammatory episodes. The receptor also contributes to inflammatory responses in cancer and degenerative diseases, where sustained TNF signaling can alter tissue function and cellular survival. TNFR1 Antibody supports investigation of this receptor's expression and regulation, particularly its relationship to NF-kappaB activation, inflammatory cytokine responses, apoptosis, and necroptosis.

Explore our Immunology Antibodies collection for additional research antibodies targeting TNF signaling, inflammatory cytokines, immune regulation, and programmed cell death.

Application Notes

Optimal dilution of the TNFR1 antibody should be determined by the researcher.

Immunogen

Amino acids F89-N145 from the human protein were used as the immunogen for the TNFR1 antibody.

Storage

After reconstitution, the TNFR1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

TNFRSF1A antibody, TNF Receptor 1 antibody, Tumor Necrosis Factor Receptor 1 antibody, TNF Receptor Type 1 antibody, TNFR1 antibody, CD120a antibody, p55 TNF Receptor antibody, TNFR55 antibody, TNF-R1 antibody, TNFRI antibody

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