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TYROBP Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP9862b

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	O43914
Other Accession	Q95J79
Reactivity	Human
Predicted	Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB22347
Calculated MW	12179
Antigen Region	85-113

Additional Information

Gene ID	7305
Other Names	TYRO protein tyrosine kinase-binding protein, DNAX-activation protein 12, Killer-activating receptor-associated protein, KAR-associated protein, TYROBP, DAP12, KARAP
Target/Specificity	This TYROBP antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 85-113 amino acids from the C-terminal region of human TYROBP.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	TYROBP Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TYROBP (HGNC:12449)

Function	Adapter protein which non-covalently associates with activating receptors found on the surface of a variety of immune cells to mediate signaling and cell activation following ligand binding by the receptors (PubMed:10604985, PubMed:9490415, PubMed:9655483). TYROBP is tyrosine-phosphorylated in the ITAM domain following ligand binding by the associated receptors which leads to activation of additional tyrosine kinases and subsequent cell activation (PubMed:9490415). Also has an inhibitory role in some cells (PubMed:21727189). Non-covalently associates with activating receptors of the CD300 family to mediate cell activation (PubMed:15557162, PubMed:16920917, PubMed:17928527, PubMed:26221034). Also mediates cell activation through association with activating receptors of the CD200R family (By similarity). Required for neutrophil activation mediated by integrin (By similarity). Required for the activation of myeloid cells mediated by the CLEC5A/MDL1 receptor (PubMed:10449773). Associates with natural killer (NK) cell receptors such as KIR2DS2 and the KLRD1/KLRC2 heterodimer to mediate NK cell activation (PubMed:23715743, PubMed:9490415, PubMed:9655483). Also enhances trafficking and cell surface expression of NK cell receptors KIR2DS1, KIR2DS2 and KIR2DS4 and ensures their stability at the cell surface (PubMed:23715743). Associates with SIRPB1 to mediate activation of myeloid cells such as monocytes and dendritic cells (PubMed:10604985). Associates with TREM1 to mediate activation of neutrophils and monocytes (PubMed:10799849). Associates with TREM2 on monocyte-derived dendritic cells to mediate up-regulation of chemokine receptor CCR7 and dendritic cell maturation and survival (PubMed:11602640). Association with TREM2 mediates cytokine-induced formation of multinucleated giant cells which are formed by the fusion of macrophages (PubMed:18957693). Stabilizes the TREM2 C-terminal fragment (TREM2-CTF) produced by TREM2 ectodomain shedding which suppresses the release of pro-inflammatory cytokines (PubMed:25957402). In microglia, required with TREM2 for phagocytosis of apoptotic neurons (By similarity). Required with ITGAM/CD11B in microglia to control production of microglial superoxide ions which promote the neuronal apoptosis that occurs during brain development (By similarity). Promotes pro-inflammatory responses in microglia following nerve injury which accelerates degeneration of injured neurons (By similarity). Positively regulates the expression of the IRAK3/IRAK-M kinase and IL10 production by liver dendritic cells and inhibits their T cell allostimulatory ability (By similarity). Negatively regulates B cell proliferation (PubMed:21727189). Required for CSF1-mediated osteoclast cytoskeletal organization (By similarity). Positively regulates multinucleation during osteoclast development (By similarity).
Cellular Location	Cell membrane; Single-pass type I membrane protein
Tissue Location	Expressed at low levels in the early development of the hematopoietic system and in the promonocytic stage and at high levels in mature monocytes. Expressed in hematological cells and tissues such as peripheral blood leukocytes and spleen. Also found in bone marrow, lymph nodes, placenta, lung and liver. Expressed at lower levels in different parts of the brain especially in the basal ganglia and corpus callosum.

Background

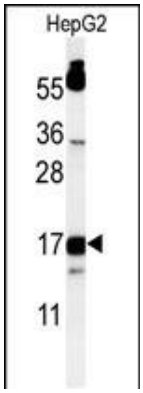
TYROBP encodes a transmembrane signaling polypeptide which contains an immunoreceptor tyrosine-based activation motif (ITAM) in its cytoplasmic domain. The encoded protein may associate with the killer-cell inhibitory receptor (KIR) family of membrane glycoproteins and may act as an activating signal transduction element. This protein may bind zeta-chain (TCR) associated protein kinase 70kDa (ZAP-70) and spleen tyrosine kinase (SYK) and play a role in signal transduction, bone modeling, brain myelination, and inflammation. Mutations within this gene have been associated with polycystic lipomembranous osteodysplasia with sclerosing leukoencephalopathy (PLOSL), also known as Nasu-Hakola disease. Its

putative receptor, triggering receptor expressed on myeloid cells 2 (TREM2), also causes PLOSL.

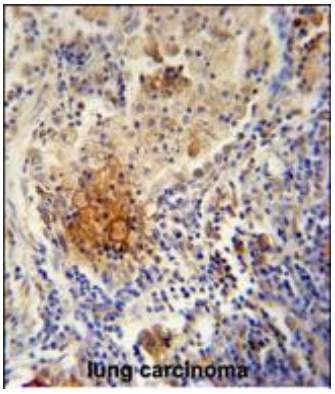
References

Chen, X., et al. Blood 113(14):3226-3234(2009)
Sulonen, A.M., et al. J. Neuroimmunol. 206 (1-2), 86-90 (2009)
Lanier, L.L. Immunol. Rev. 227(1):150-160(2009)
Schleinitz, N., et al. PLoS ONE 4 (7), E6264 (2009)

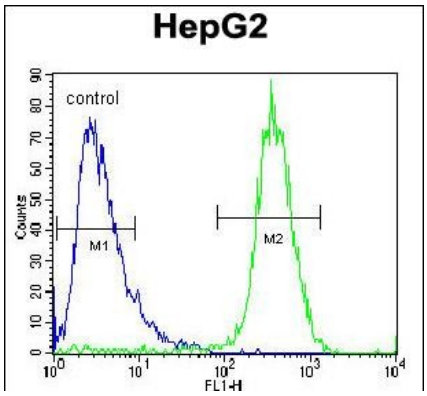
Images



Western blot analysis of TYROBP Antibody (C-term) (Cat. #AP9862b) in HepG2 cell line lysates (35ug/lane). TYROBP (arrow) was detected using the purified Pab.



TYROBP Antibody (C-term) (Cat. #AP9862b) immunohistochemistry analysis in formalin fixed and paraffin embedded human lung carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the TYROBP Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.



TYROBP Antibody (C-term) (Cat. #AP9862b) flow cytometric analysis of HepG2 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.