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CD71 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2949b

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P02786
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB20736
Calculated MW	84871
Antigen Region	649-677

Additional Information

Gene ID	7037
Other Names	Transferrin receptor protein 1, TR, TfR, TfR1, Trfr, T9, p90, CD71, Transferrin receptor protein 1, serum form, sTfR, TFRC
Target/Specificity	This CD71 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 649-677 amino acids from the C-terminal region of human CD71.
Dilution	WB~~1:2000 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 prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	CD71 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TFRC
Function	Cellular uptake of iron occurs via receptor-mediated endocytosis of ligand-occupied transferrin receptor into specialized endosomes (PubMed:26214738). Endosomal acidification leads to iron release. The

	apotransferrin-receptor complex is then recycled to the cell surface with a return to neutral pH and the concomitant loss of affinity of apotransferrin for its receptor. Transferrin receptor is necessary for development of erythrocytes and the nervous system (By similarity). A second ligand, the hereditary hemochromatosis protein HFE, competes for binding with transferrin for an overlapping C- terminal binding site. Positively regulates T and B cell proliferation through iron uptake (PubMed:26642240). Acts as a lipid sensor that regulates mitochondrial fusion by regulating activation of the JNK pathway (PubMed:26214738). When dietary levels of stearate (C18:0) are low, promotes activation of the JNK pathway, resulting in HUWE1- mediated ubiquitination and subsequent degradation of the mitofusin MFN2 and inhibition of mitochondrial fusion (PubMed:26214738). When dietary levels of stearate (C18:0) are high, TFRC stearoylation inhibits activation of the JNK pathway and thus degradation of the mitofusin MFN2 (PubMed:26214738). Mediates uptake of NICOL1 into fibroblasts where it may regulate extracellular matrix production (By similarity).
Cellular Location	Cell membrane; Single-pass type II membrane protein Melanosome. Note=Identified by mass spectrometry in melanosome fractions from stage I to stage IV

Background

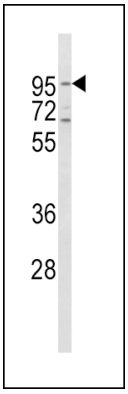
Cellular uptake of iron occurs via receptor mediated endocytosis of ligand occupied transferrin receptor into specialized endosomes. Endosomal acidification leads to iron release. The apotransferrin receptor complex is then recycled to the cell surface with a return to neutral pH and the concomitant loss of affinity of apotransferrin for its receptor. Transferrin receptor is necessary for development of erythrocytes and the nervous system (By similarity). Useful in studies of dividing haematopoietic and tumour cell populations, and metabolic activity. A second ligand, the heditary hemochromatosis protein HFE, competes for binding with transferrin for an overlapping C terminal binding site. The antigen is present on most dividing cells, including normally cycling in vivo hematopoietic progenitor cells, mitogenically stimulated cells in vitro, some primary tumor cells and most proliferating cells in vitro.The transferrin receptor has been structurally characterized as a sulfide bound dimer of identical glycoprotein subunits of 95 kDa. The transferrin receptor is not present on resting blood lymphocytes. On PBL, the receptor appears after activation. The expression of transferrin receptor is coordinately regulated with cell growth. Present on T and B cell lines. The soluble (or serum) transferrin receptor (sTfR) is a circulating truncated form of the membrane receptor protein; it is an 85 kDa glycoprotein forming in serum a 320 kDa complex with diferric transferrin.The most important clinical use of the sTfR determination is in the differential diagnosis between iron deficiency anaemia and the anaemia of chronic disease. This antibody is an indicator of proliferation activity. It also has prognostic significance when typing tumors, such as leukemias and lymphomas.

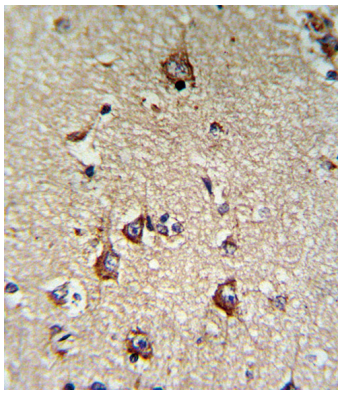
References

Chicz,R.M., et.al., Nature 358 (6389), 764-768 (1992)
Hayes,G.R., et.al., Glycobiology 2 (4), 355-359 (1992)

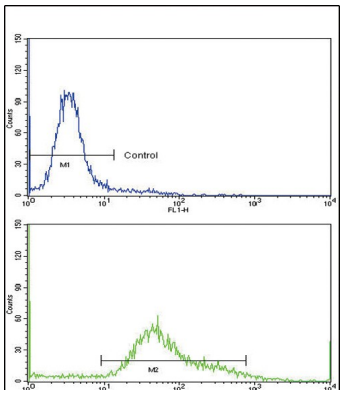
Images

Western blot analysis of CD71 Antibody (C-term) (Cat. #AP2949b) in Hela cell line lysates (35ug/lane). CD71 (arrow) was detected using the purified Pab.





Formalin-fixed and paraffin-embedded human brain tissue reacted with CD71 Antibody (C-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Flow cytometric analysis of hela cells using CD71 Antibody (C-term)(bottom histogram) compared to a negative control cell (top histogram)FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.