Recombinant Transferrin Receptor/TFRC/CD71 Monoclonal Antibody

catalog number: AN300362P

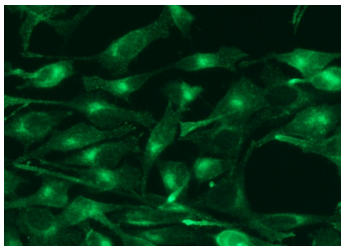
Note: *Centrifuge before opening to ensure complete recovery of vial contents.*

Description

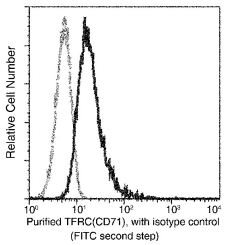
Reactivity	Human
Immunogen	Recombinant Human Transferrin Receptor/TFRC/CD71 protein
Host	Rabbit
Isotype	IgG
Clone	B284
Purification	Protein A
Buffer	0.2 μm filtered solution in PBS

Applications	Recommended Dilution
ICC/IF	1:20-1:100
FCM	1:25-1:100

Data



Immunofluorescence analysis of Human TFRC in Hela cells. Cells were fixed with 4% PFA, permeabilzed with 0.3% Triton X-100 in PBS, blocked with 10% serum, and incubated with rabbit anti-Human TFRC monoclonal antibody (1:60) at 37°C 1 hour. Then cells were stained with the Alexa Fluor® 488-conjugated goat Anti-rabbit IgG secondary antibody (green). Positive staining was localized to cytoplasm.



Flow cytometric analysis of Human TFRC(CD71) expression on U937 cells. Cells were stained with purified anti-Human TFRC(CD71), then a FITC-conjugated second step antibody. The histogram were derived from gated events with the forward and side light-scatter characteristics of intact cells.

Preparation & Storage

Storage	This antibody can be stored at 2°C-8°C for one month without detectable loss of activity. Antibody products are stable for twelve months from date of receipt when stored at -20°C to -80°C. Preservative-Free. Avoid repeated freeze-thaw cycles.
Shipping	Ice bag

Background

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The Transferrin Receptor (TfR or TfR-1, designated CD71) is a type 2 transmembrane glycoprotein expressed on erythroid progenitors, muscle cells and proliferating cells as a 188 kDa disulfide-linked homodimer of 95 kDa monomers (1-4). As the major mediator of cellular iron uptake, it binds and internalizes diferric transferrin, allowing iron release at the low pH of the endosome. The human TfR cDNA encodes 760 amino acids (aa) including a 67 aa N-terminal intracellular domain, a 21 aa transmembrane domain, and a 672 aa extracellular domain (ECD) with helical, peptidase (nonfunctional), and ligand binding domains, including an RGD potential integrin binding site. Human TfR ECD shares 75-80% aa identity with mouse, rat, feline, canine, equine, porcine and bovine TfR. A 679 aa alternately spliced form begins at aa 82 and is presumably secreted, while in an 804 aa form, 44 aa are inserted at aa 518 within the peptidase region. Most soluble TfR (sTfR) arises from trypsin proteolysis at aa 100, producing the circulating form of TfR. sTfR concentration in plasma or serum is proportional to total TfR and can be increased by iron deficiency. Erythroid progenitors, which use iron for hemoglobin synthesis, normally account for the bulk of total body TfR production. Since rapidly growing cells require iron to replicate DNA, cancer cells can express up to 5-fold more TfR than quiescent cells in the surrounding tissue. Antibody targeting of TfR can inhibit tumor cell proliferation and induce apoptosis. The hereditary hemochromatosis protein HFE competes with diferric transferrin for binding to TfR, and targets TfR for degradation rather than recycling. TfR has been reported to have ferritin-independent functions in T cell development, immunological synapse formation and galectin-3-mediated cell death, and to be a cell entry receptor for New World hemorrhagic fever arenaviruses.

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