

TFRC Protein, Cynomolgus (HEK293, His)

Cat. No.:	HY-P77855
Synonyms:	TR; TfR1; CD71; sTfR; T9; p90; TFRC; TFR
Species:	Cynomolgus
Source:	HEK293
Accession:	XP_005545315 (C89-F760)
Gene ID:	102136007
Molecular Weight:	78-80 kDa

PROPERTIES

Biological Activity	Measured by its ability to neutralize transferrin-mediated proliferation of MCF-7 cells. The ED ₅₀ for this effect is typically 0.2-2 µg/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4. Normally 5% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

TFRC, a pivotal protein in cellular iron uptake, orchestrates receptor-mediated endocytosis of ligand-occupied transferrin into specialized endosomes, where endosomal acidification triggers iron release. The apotransferrin-receptor complex undergoes recycling to the cell surface while a return to neutral pH, leading to the loss of apotransferrin affinity for its receptor. Essential for erythrocyte and nervous system development, TFRC positively regulates T and B cell proliferation through iron uptake. Acting as a lipid sensor, TFRC modulates mitochondrial fusion by regulating the JNK pathway. Low dietary stearate levels induce JNK pathway activation, resulting in HUWE1-mediated ubiquitination and degradation of mitofusin MFN2, inhibiting mitochondrial fusion. Conversely, high stearate levels stearylates TFRC, suppressing JNK pathway activation and preventing MFN2 degradation. TFRC also can function as a homodimer with disulfide linkage, binding one transferrin molecule per subunit, and interacts with SH3BP4 and STEAP3, the latter facilitating TFRC endocytosis in erythroid precursor cells.

Caution: Product has not been fully validated for medical applications. For research use only.

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