

## TFRC Protein, Human (HEK293, His)

Cat. No.:	HY-P71069
Synonyms:	Transferrin receptor protein 1; TR; TfR; Trfr; T9; p90
Species:	Human
Source:	HEK293
Accession:	P02786 (L101-F760)
Gene ID:	7037
Molecular Weight:	78-90 kDa

### PROPERTIES

#### AA Sequence

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LAGTESPVRE   EPGEDFPAAR   RLYWDDLKRK   LSEKLDSTDF
TGTIKLLNEN   SYVPREAGSQ   KDENLALYVE   NQFREFKLSK
VWRDQHFKVI   QVKDSAQNSV   IIVDKNGRLV   YLVENPGGYV
AYSKAATVTG   KLVHANFGTK   KDFEDLYTPV   NGSIVIVRAG
KITFAEKVAN   AESLNAIGVL   IYMDQTKFPI   VNAELSFPGH
AHLGTGDPYT   PGFPSFNHTQ   FPPSRSSGLP   NIPVQTISR
AAEKLFGNME   GDCPSDWKTD   STCRMVTSES   KNVKLTVSNV
LKEIKILNIF   GVIKGFVEPD   HYVVVGAQRD   AWGPGAAKSG
VGTALLLKLA   QMFSDMVLKD   GFQPSRSIIF   ASWSAGDFGS
VGATEWLEGY   LSSLHLKAFT   YINLDKAVLG   TSNFKVSASP
LLYTLIEKTM   QNVKHPVTGQ   FLYQDSNWAS   KVEKLTLDNA
AFPFLAYSGI   PAVSFCFCED   TDYPYLGTTM   DTYKELIERI
PELNKVARAA   AEVAGQFVIK   LTHDVELNLD   YERYNSQLLS
FVRDLNQYRA   DIKEMGLSLQ   WLYSARGDFF   RATSRLTTDF
GNAEKTDRFV   MKKLNDRVMR   VEYHFLSPYV   SPKESPFRRHV
FWGSGSHTLP   ALLENLKLK   QNNGAFNETL   FRNQLALATW
TIQGAANALS   GDVWDIDNEF

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<b>Biological Activity</b>	Immobilized Human Transferrin at 2 µg/mL (100 µL/well) can bind Biotinylated Human Transferrin R that produces 50% of the optimal binding response is found to be approximately 58.14 ng/mL.
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, 5% Trehalose, pH 7.4 or 20 mM PB, 150 mM NaCl, pH 7.4.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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

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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 protein facilitates cellular iron uptake through receptor-mediated endocytosis of ligand-occupied transferrin receptors into specialized endosomes, as documented in studies. This process involves endosomal acidification, leading to iron release, followed by recycling of the apotransferrin-receptor complex to the cell surface, accompanied by a return to neutral pH and the subsequent loss of apotransferrin affinity for its receptor. Crucial for erythrocyte and nervous system development, TFRC is a vital player in iron homeostasis. The hereditary hemochromatosis protein HFE competes with transferrin for binding at an overlapping C-terminal site. TFRC positively regulates T and B cell proliferation through iron uptake and acts as a lipid sensor, modulating mitochondrial fusion by regulating the JNK pathway. Depending on dietary stearate levels, TFRC either promotes JNK pathway activation and degradation of the mitofusin MFN2 when stearate is low or inhibits JNK pathway activation and MFN2 degradation when stearate is high. Furthermore, TFRC acts as a receptor for new-world arenaviruses, including Guanarito, Junin, and Machupo virus, during microbial infection.

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

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