

Transferrin Receptor/TFRC Protein, Rat, Recombinant (His & SUMO)

General Information

Synonyms:	Tfrc;Trfr;TR;TfR1;Transferrin receptor protein 1;CD71;TfR
Protein Construction:	565-761 aa
Species:	Rat
Expression Host:	E. coli
Accession:	Q99376
Molecular Weight:	35.9 kDa (predicted)
AA Sequence:	PYLGTKLDTYEILIQKVPQLNQMVRTAAEVAGQFIIKLTHDIELTLDYEMYNKLLSFMKDLNQFKADIKDMGL SLQWLYSARGDYFRATSRLTTDFHNAEKTNRFFVMREINDRIMKVEYHFLSPYVSPRESPFRHIFWGS GSHTLS ALVENLRLRQKNITAFNETLFRNQLALATWTIQGVANALSGDIWNIDNEF

QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose, pH 8.0.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in sterile deionized water. The product concentration should not be less than 100 μg/mL. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein 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. Positively regulates T and B cell proliferation through iron uptake. Acts as a lipid sensor that regulates mitochondrial fusion by regulating activation of the JNK pathway. 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. When dietary levels of stearate (C18:0) are high, TFRC stearoylation inhibits activation of the JNK pathway and thus degradation of the mitofusin MFN2.

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