



# Recombinant Protein Technical Manual

## Recombinant Mouse Transferrin Receptor/TFRC Protein (His Tag)

RPES0479

### Product Data:

**Product SKU:** RPES0479

**Size:** 10µg

**Species:** Mouse

**Expression host:** Human Cells

**Uniprot:** Q62351

### Protein Information:

**Molecular Mass:** 77 kDa

**AP Molecular Mass:** 90 kDa

**Tag:** N-His

**Bio-activity:**

**Purity:** > 95% as determined by reducing SDS-PAGE.

**Endotoxin:** < 1.0 EU per µg as determined by the LAL method.

**Storage:** Lyophilized protein should be stored at < -20°C, though stable at room temperature for 3 weeks. Reconstituted protein solution can be stored at 4-7°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Shipping:** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation:** Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:**

**Synonyms:** Transferrin receptor protein 1; TR; TfR; TfR1; Trfr; CD71; Tfr; 2610028K12Rik; AI195355; AI426448; AU015758; CD71; E430033M20Rik; Mtvr; Mtvr1 ;p90

## Immunogen Information:

**Sequence:** Cys89-Phe763

## Background:

Transferrin receptor protein 1 (TFRC) belongs to the peptidase M28 family that is synthesized as a 172 amino acid (aa). TFRC regulated by cellular iron levels through binding of the iron regulatory proteins, IRP1 and IRP2, to iron-responsive elements in the 3'-UTR. It binds one transferrin or HFE molecule per subunit and binds the HLA class II histocompatibility antigen, DR1. It interacts with SH3BP3 and STEAP3, facilitates TFRC endocytosis in erythroid precursor cells. 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. A second ligand, the hereditary hemochromatosis protein HFE, competes for binding with transferrin for an overlapping C-terminal binding site. It positively regulates T and B cell proliferation through iron uptake.