PRODUCT INFORMATION

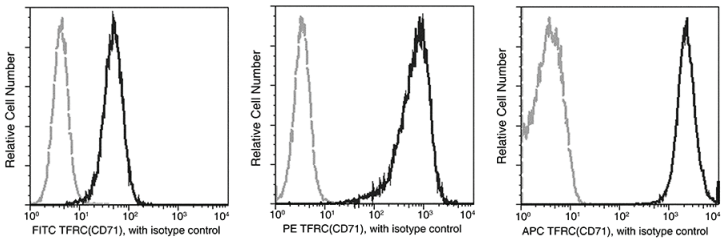
Transferrin Receptor Protein 1/CD71 Monoclonal Antibody (PE) (Clone 04)

Item No. 37081

Overview and Properties

Contents:	250 µl or 1 ml of protein A-affinity purified monoclonal antibody.
Synonyms:	Cluster of Differentiation 71, p90, TfR1, TFRC
Immunogen:	Recombinant human TfR1
Cross Reactivity:	(+) TfR1
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	2-8°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 0.5% BSA and 0.09% sodium azide
Concentration:	100 µg/ml
Clone:	04
Host:	Mouse
Isotype:	IgG1
Application:	Flow Cytometry; the optimal working concentration/dilution should be determined empirically.

Images



Flow cytometric analysis of human TfR1/CD71 expression on U937 cells. Cells were stained with Transferrin Receptor Protein 1/CD71 Monoclonal Antibody (PE) (Clone 04). The fluorescence histograms were derived from gated events with the forward and side light-scatter characteristics of intact cells.

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Description

Transferrin receptor (TfR1), also known as CD71, is a homodimeric transmembrane receptor for transferrin (Item No. 32030) that facilitates iron delivery into cells and is encoded by *TFRC* in humans.[1] It is composed of two TfR1 monomers, each containing a cytoplasmic tail, an internalization motif, a membrane-spanning portion, and a stalk region that covalently links the monomers. An extracellular ectodomain binds transferrin and drives TfR1 dimerization.[1,2] TfR1 is ubiquitously expressed, except on mature red blood cells and certain terminally differentiated cells, with the highest expression on immature erythroid cells and in the placenta, and is involved in erythropoiesis, lymphocyte development, and hematopoietic expansion in the bone marrow.[3,4] TfR1/transferrin-mediated iron transport contributes to the intracellular iron pool required for ferroptosis and an anti-TfR1 antibody has been used in combination with anti-malondialdehyde antibodies to identify ferroptotic cells *in vitro* and human cancer tissue in a mouse xenograft model.[5] *TFRC* is overexpressed in various breast cancer tumors and gliomas and positively correlated with poor prognosis.[6] Cayman's Transferrin Receptor Protein 1/CD71 Monoclonal Antibody (PE) (Clone 04) is composed of a TfR1 monoclonal antibody conjugated to phycoerythrin (PE) and can be used for flow cytometry.

References

1. Luck, A.N. and Mason, A.B. Transferrin-mediated cellular iron delivery. *Curr. Top. Membr.* **69**, 3-35 (2012).
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3. Ponka, P. and Lok, C.N. The transferrin receptor: Role in health and disease. *Int. J. Biochem. Cell Biol.* **31(10)**, 1111-1137 (1999).
4. Wang, S., He, X., Wu, Q., *et al.* Transferrin receptor 1-mediated iron uptake plays an essential role in hematopoiesis. *Haematologica* **105(8)**, 2071-2082 (2020).
5. Feng, H., Schorpp, K., Jin, J., *et al.* Transferrin receptor is a specific ferroptosis marker. *Cell Rep.* **30(10)**, 3411-3423 (2020).
6. Shen, Y., Li, X., Dong, D., *et al.* Transferrin receptor 1 in cancer: A new sight for cancer therapy. *Am. J. Cancer Res.* **8(6)**, 916-931 (2018).

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