

PRODUCT INFORMATION

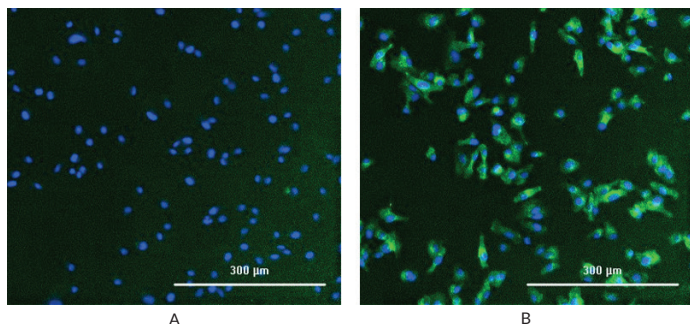
Transferrin Receptor Protein 1/CD71 Monoclonal Antibody (Clone 3F3-FMA)

Item No. 36655

Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody.
Synonyms:	Cluster of Differentiation 71, p90, Tfr1, TFRC, Transferrin Receptor Protein 1
Immunogen:	Purified membrane fractions from OCI-LY7 cells
Cross Reactivity:	(+) Tfr1
Species Reactivity:	(+) Human
Uniprot No.:	P02786
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	3F3-FMA
Host:	Mouse
Isotype:	IgG1
Applications:	Immunofluorescence (IF) and Western blot (WB); the recommended starting dilution is 1:100-1:200 for IF and 1:500 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



HT-1080 cells were fixed with 3.7% PFA and blocked with 1% FBS. Cells were probed with a mouse IgG1 isotype control (A) or the Transferrin Receptor Protein 1/CD71 Monoclonal Antibody (Clone 3F3-FMA) (Item No. 36655) (B) followed by Goat Anti-Mouse (IgG+IgM) FITC secondary antibody (Item No. 10006617). Cell nuclei were stained with DAPI.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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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 the anti-TfR1 antibody (clone 3F3-FMA) 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 (Clone 3F3-FMA) can be used for immunofluorescence (IF) and Western blot (WB) applications. The antibody recognizes TfR1 at approximately 85 kDa from human samples.

References

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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).
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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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