PRODUCT INFORMATION

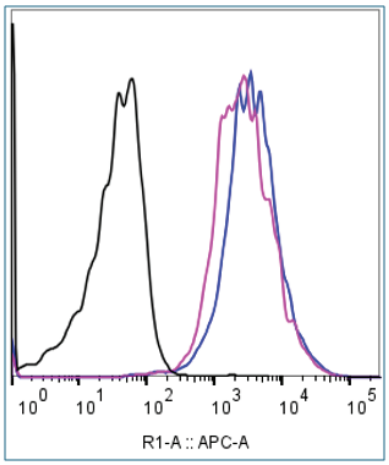
Transferrin Receptor Protein 1/CD71 Monoclonal DyLight® 650 Antibody (Clone 3F3-FMA)

Item No. 44497

Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody labeled with DyLight® 650
Synonyms:	Cluster of Differentiation 71, TFRC, TfR1, p90
Immunogen:	Purified membrane fractions from OCI-LY7 cells
Cross Reactivity:	(+) TfR1, species
Species Reactivity:	(+) Human
Uniprot No.:	P02786
Form:	Liquid
Storage:	4°C (as supplied)
Stability:	≥2 years
Storage Buffer:	PBS, pH 7.2, with 0.02% sodium azide
Clone:	3F3-FMA
Host:	Mouse
Isotype:	IgG1
Applications:	IF and FC; the recommended starting dilutions are 1:200 (5 µg/ml) for both FC and IF. Other applications were not tested; therefore, optimal working concentration/dilution should be determined empirically.

Image



Detection of TfR1 from PC3 cells by flow cytometry using Transferrin Receptor Protein 1/CD71 Monoclonal DyLight® 650 Antibody (Clone 3F3-FMA) at 0 (black), 5 (pink), and 10 µg/ml (blue)

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Description

Transferrin receptor protein 1 (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 (clone 3F3-FMA) has been used in combination with anti-malondialdehyde antibodies to identify ferroptotic cells both *in vitro* and in human cancer tissue isolated from a mouse xenograft model.[5] *TFRC* is overexpressed in various breast cancer tumors and gliomas and is positively correlated with poor prognosis.[6] Cayman's Transferrin Receptor Protein 1/CD71 Monoclonal DyLight® 650 Antibody (Clone 3F3-FMA) can be used for flow cytometry (FC) and immunofluorescence (IF) applications.

References

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2. Gammella, E., Buratti, P., Cairo, G., *et al*. The transferrin receptor: The cellular iron gate. *Metallomics* **9(10)**, 1367-1375 (2017).
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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