Technical Data Sheet

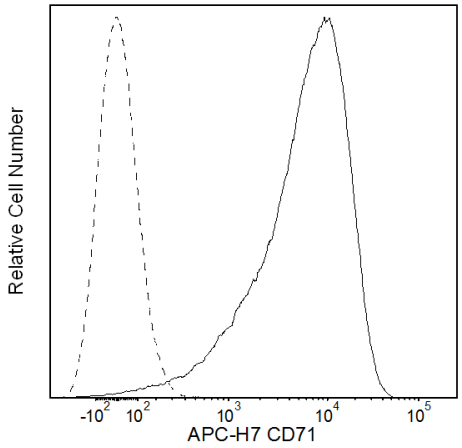
APC-H7 Mouse Anti-Human CD71

Product Information

Material Number:	**563671**
Alternate Name:	TFR; TFRC; Trfr; TfR1; Transferrin receptor protein 1
Size:	100 Tests
Vol. per Test:	5 µl
Clone:	M-A712
Immunogen:	T-CLL and Jurkat Cells
Isotype:	Mouse (BALB/c) IgG2a, κ
Reactivity:	QC Testing: Human
Storage Buffer:	Aqueous buffered solution containing BSA, protein stabilizer, and ≤0.09% sodium azide.

Description

The M-A712 monoclonal antibody specifically binds to CD71 which is also known as the transferrin receptor (TFR). This type II transmembrane glycoprotein is expressed on cells as a disulfide-linked homodimer comprised of 95 kDa monomers. CD71 is expressed on activated lymphocytes, monocytes, macrophages, erythroid progenitors, brain endothelium, and most proliferating cells. CD71 is not expressed on resting lymphocytes and is upregulated during lymphocyte responses to antigens or mitogens. Through an endocytic pathway, the transferrin receptor mediates cellular iron uptake by binding and internalizing iron that is bound to transferrin. After releasing iron within the low pH endosomal environment, transferrin and its receptor can be recycled to the cell surface.



Flow cytometric analysis of CD71 expression on stimulated human peripheral blood lymphocytes. *Phytohemagglutinin-stimulated (3 days) peripheral blood mononuclear cells were stained with either APC-H7 Mouse Anti-Human CD71 antibody (Cat. No. 563671; solid line histogram) or APC-H7 Mouse IgG2a, κ Isotype Control (Cat. No. 560897; dashed line histogram). The fluorescence histograms were derived from events with the forward and side light-scatter characteristics of viable lymphoblasts. Flow cytometric analysis was performed using a BD™ LSR II Flow Cytometer System.*

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with APC-H7 under optimum conditions, and unconjugated antibody and APC-H7 were removed.

Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 mL	(none)
560897	APC-H7 Mouse IgG2a, κ Isotype Control	0.1 mg	G155-178
554657	Stain Buffer (BSA)	500 mL	(none)

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Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
5. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
6. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
7. BD APC-H7 is a tandem conjugate and an analog of APC-Cy7 with the same spectral properties. It has decreased intensity but it is engineered for greater stability and less spillover in the APC channel and consequently offers better performance than APC-Cy7. It has an absorption maximum of approximately 650 nm. When excited by light from a red laser, the APC fluorochrome can transfer energy to the cyanine dye, which then emits at a longer wavelength. The resulting fluorescent emission maximum is approximately 767 nm. BD recommends that a 750-nm longpass filter be used along with a red-sensitive detector such as the Hamamatsu R3896 PMT. As with APC-Cy7 special filters are required when using APC-H7 in conjunction with APC.
   Note: Although our APC-H7 products demonstrate higher lot-to lot consistency than other APC tandem conjugate products, and every effort is made to minimize the lot-to-lot variation in residual emission from APC, it is strongly recommended that every lot be tested for differences in the amount of compensation required and that individual compensation controls are run for each APC-H7 conjugate.
8. Although BD APC-H7 is engineered to minimize spillover to the APC channel and is more stable and less affected by light, temperature, and formaldehyde-based fixatives, compared to other APC-cyanine tandem dyes, it is still good practice to minimize as much as possible, any light, temperature and fixative exposure when working with all fluorescent conjugates.
9. Cy is a trademark of GE Healthcare.
10. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Schwarting R, Stein H. Cluster report: CD71. In: Knapp W. W. Knapp .. et al., ed. *Leucocyte typing IV : white cell differentiation antigens.* Oxford New York: Oxford University Press; 1989:455-460. (Biology)

Makita S, Kanai T, Oshima S, et al. CD4+CD25bright T cells in human intestinal lamina propria as regulatory cells. *J Immunol.* 2004; 173(5):3119-3130. (Clone-specific: Flow cytometry)

Ni J, Hembrador E, Di Bisceglie AM, et al. Accumulation of B lymphocytes with a naive, resting phenotype in a subset of hepatitis C patients. *J Immunol.* 2003; 170(6):3429-3439. (Clone-specific: Flow cytometry)

Zola H. *Leukocyte and stromal cell molecules : the CD markers.* Hoboken, N.J.: Wiley-Liss; 2007(Biology)