Technical Data Sheet

PE-CF594 Mouse Anti-Human CD163

Product Information

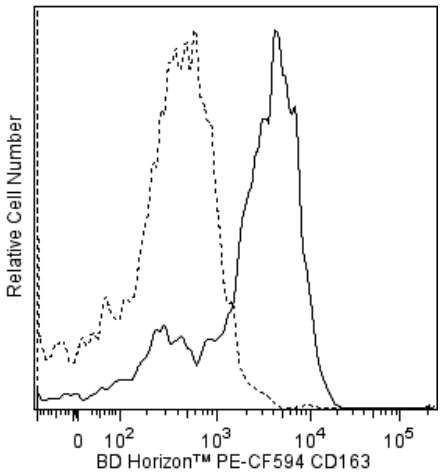
Material Number:	**562670**
Alternate Name:	CD163 antigen; M130; MM130; GHI/61; D11C163A; RM3/1
Size:	50 tests
Vol. per Test:	5 µl
Clone:	GHI/61
Immunogen:	Glycoprotein preparation from Hairy Cell Leukemia Spleen
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Testing: Human
Workshop:	VI M38
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The GHI/61 monoclonal antibody specifically binds to human CD163. CD163 is also known as Scavenger receptor cysteine-rich type 1 protein M130 (M130), Hemoglobin scavenger receptor and Macrophage-associated antigen. CD163 is a 110-130 kDa transmembrane glycoprotein. CD163 is a monocyte/macrophage-restricted antigen expressed on the majority of tissue macrophages and peripheral blood monocytes. CD163 belongs to the scavenger receptor superfamily. Its expression on monocytes is upregulated upon cellular activation. CD163 expression reportedly changes on monocytes and macrophages as these cells differentiate. This finding suggests a role for this molecule in the differentiation and/or regulation of monocyte and macrophage function. CD163 may play a role in the clearance and endocytosis of hemoglobin and haptoglobin complexes by macrophages.

It has been reported (Maniecki et al., 2011) that the presence of calcium impacts the binding affinity of clone GHI/61 to CD163. There is a variation in detecting CD163 positive monocytes when the cells are prepared with different anticoagulants, where heparin was observed to have the highest inhibitory effect on clone GHI/61.

This antibody is conjugated to BD Horizon™ PE-CF594, which has been developed exclusively by BD Biosciences as a better alternative to PE-Texas Red®. PE-CF594 excites and emits at similar wavelengths to PE-Texas Red® yet exhibits improved brightness and spectral characteristics. Due to PE having maximal absorption peaks at 496 nm and 564 nm, PE-CF594 can be excited by the blue (488-nm), green (532-nm) and yellow-green (561-nm) lasers and can be detected with the same filter set as PE-Texas Red® (eg 610/20-nm filter).



Flow cytometric analysis of CD163 expression on human peripheral blood monocytes. *Whole blood was stained with either BD Horizon™ PE-CF594 Mouse Anti-Human CD163 antibody (Cat. No. 562670; solid line histogram) or with a BD Horizon™ PE-CF594 Mouse IgG1, κ Isotype Control (Cat. No. 562292; dashed line histogram). The erythrocytes were lysed with BD Pharm Lyse™ Lysing Buffer (Cat. No. 555899). The fluorescence histograms were derived from events with the forward and side light-scatter characteristics of viable monocytes. Flow cytometry 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 BD Horizon™ PE-CF594 under optimum conditions, and unconjugated antibody and free PE-CF594 were removed.

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Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
562292	PE-CF594 Mouse IgG1, κ Isotype Control	0.1 mg	X40
554656	Stain Buffer (FBS)	500 ml	(none)
555899	Lysing Buffer	100 ml	(none)

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 refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
5. 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.
6. 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.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Texas Red is a registered trademark of Molecular Probes, Inc., Eugene, OR.
9. CF™ is a trademark of Biotium, Inc.
10. When excited by the yellow-green (561-nm) laser, the fluorescence may be brighter than when excited by the blue (488-nm) laser.
11. This product is provided under an Agreement between BIOTIUM and BD Biosciences. The manufacture, use, sale, offer for sale, or import of this product is subject to one or more patents or pending applications owned or licensed by Biotium, Inc. This product, and only in the amount purchased by buyer, may be used solely for buyer's own internal research, in a manner consistent with the accompanying product literature. No other right to use, sell or otherwise transfer (a) this product, or (b) its components is hereby granted expressly, by implication or by estoppel. This product is for research use only. Diagnostic uses require a separate license from Biotium, Inc. For information on purchasing a license to this product including for purposes other than research, contact Biotium, Inc., 3159 Corporate Place, Hayward, CA 94545, Tel: (510) 265-1027. Fax: (510) 265-1352. Email: btinfo@biotium.com.
12. Because of the broad absorption spectrum of the tandem fluorochrome, extra care must be taken when using multi-laser cytometers, which may directly excite both PE and CF™594.

References

Kishimoto T, von dem Borne AEG, Goyert SM,et al., ed. *Leucocyte Typing VI: White Cell Differentiation Antigens.* London: Garland Publishing; 1997. (Clone-specific)

Law SK, Micklem KJ, Shaw JM. A new macrophage differentiation antigen which is a member of the scavenger receptor superfamily. *Eur J Immunol.* 1993; 23(9):2320-2325. (Biology)

Maniecki MB, Etzerodt A, Moestrup S, Møller J, Graversen J. Comparative assessment of the recognition of domain-specific CD163 monoclonal antibodies in human monocytes explains wide discrepancy in reported levels of cellular surface CD163 expression. *Immunobiology.* 2011; 216(8):882-890. (Biology)

Pulford K, Micklem K, McCarthy S, Cordell J, Jones M, Mason DY. A monocyte/macrophage antigen recognized by the four antibodies GHI/61, Ber-MAC3, Ki-M8 and SM4. *Immunology.* 1992; 75(4):588-595. (Immunogen: Blocking, Flow cytometry, Immunoaffinity chromatography, Immunohistochemistry, Immunoprecipitation, Western blot)

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