Human CD83 Antibody

Monoclonal Mouse IgG_1 Clone # HB15e

Catalog Number: MAB1774

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD83.
Source	Monoclonal Mouse IgG_1 Clone # HB15e
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	COS-7 African green monkey SV40 transformed kidney fibroblast-like cells transfected with human CD83
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

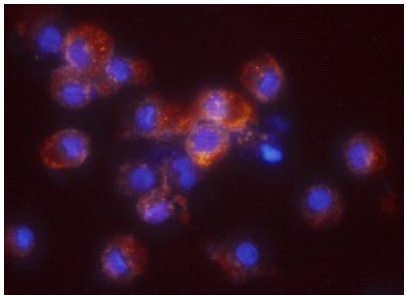
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10^6 cells	See Below
Immunocytochemistry	8-25 µg/mL	See Below

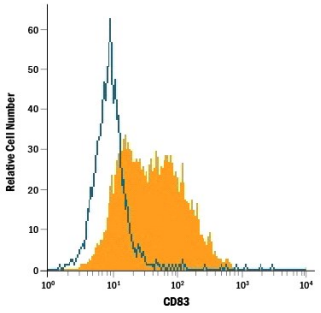
DATA

Immunocytochemistry



CD83 in Human Dendritic Cells. CD83 was detected in immersion fixed human dendritic cells using 10 µg/mL Human CD83 Monoclonal Antibody (Catalog # MAB1774) for 3 hours at room temperature. Cells were stained with the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

Flow Cytometry



Detection of CD83 in Human Mature Dendritic Cells by Flow Cytometry. Human mature dendritic cells were stained with Mouse Anti-Human CD83 Monoclonal Antibody (Catalog # MAB1774, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Human CD83 is a 40-50 kDa member of the Siglec (or sialic-acid-binding immunoglobulin-like lectin) family of transmembrane proteins (1, 2, 3). CD83 is synthesized as a type I transmembrane glycoprotein that contains a 125 amino acid (aa) extracellular region, a 22 aa transmembrane segment, and 39 aa cytoplasmic domain. It contains one V type Ig-like domain in the extracellular region with no inhibitory cytoplasmic motif(s). Although *in vitro* studies suggest CD83 may form membrane-bound covalent homodimers, *in vivo* this does not appear to be the case (1, 4). In the extracellular region, mouse and human CD83 are 66% aa identical (1, 2, 4, 5). Relative to human, mouse CD83 is 11 aa shorter in its extracellular domain and is expressed as a 30-35 kDa protein (1, 4, 5). Human CD83 is active in the mouse system (4). One alternate splice form has been reported. This leads to a small monomeric soluble form of 74 aa that includes aa 20-52 and aa 164-205 (6, 7). In human, proteolytic cleavage and solubilization of CD83 has also been suggested, and this could lead to dimeric circulating CD83 (4, 6). CD83 is a primary marker for dendritic cells (3, 6, 8). It is also found on B cells (6, 9), neutrophils (10), monocytes and macrophages (11). Except for dendritic cells, CD83 expression is often transient. CD83 binds to sialic acids on target cells (12). Membrane CD83 appears to promote T cell proliferation, particularly of $CD8^+$ cytotoxic T cells (13, 14). Soluble CD83, however, appears to be immunosuppressive and blocks T cell activation (15, 16). On monocytes, CD83 is suggested to drive monocytes into a fibrocyte phenotype (13). A lack of membrane-expressed CD83 leads to an unusual IL-4/IL-10 producing $CD4^+$ T cell phenotype (17).

References:

1. Zhou, L-J. *et al.* (1992) J. Immunol. **149**:735.
2. Kozlow, E.J. *et al.* (1993) Blood **81**:454.
3. Fujimoto, Y and T.F. Tedder (2006) J. Med. Dent. Sci. **53**:85.
4. Lechmann, M. *et al.* (2005) Biochem. Biophys. Res. Commun. **329**:132.
5. Berchtold, S. *et. al.* (1999) FEBS Lett. **461**:211.
6. Hock, B.D. *et al.* (2001) Int. Immunol. **13**:959.
7. Dudziak, D. *et al.* (2005) J. Immunol. **174**:6672.
8. Velten, F.W. *et al.* (2007) Mol. Immunol. **44**:1544.
9. Cramer, S.O. *et al.* (2000) Int. Immunol. **12**:1347.
10. Yamashiro, S. *et al.* (2000) Blood **96**:3958.
11. Cao, W. *et al.* (2005) Biochem. J. **385**:85.
12. Scholler, N. *et al.* (2001) J. Immunol. **166**:3865.
13. Scholler, N. *et al.* (2002) J. Immunol. **168**:2599.
14. Hirano, N. *et al.* (2006) Blood **107**:1528.
15. Kotzor, N. *et al.* (2004) Immunobiology **209**:129.
16. Zinser, E. *et al.* (2006) Immunobiology **211**:449.
17. Garcia-Martinez, L.F. *et al.* (2004) J. Immunol. **173**:2995.