

DESCRIPTION

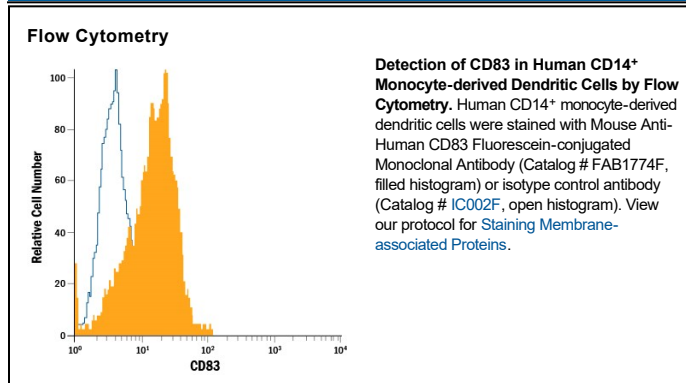
Species Reactivity	Human
Specificity	Detects human CD83.
Source	Monoclonal Mouse IgG ₁ Clone # HB15e
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	COS-7 African green monkey SV40 transformed kidney fibroblast-like cells transfected with human CD83
Conjugate	Fluorescein Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm (FITC)
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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	10 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied.

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.