

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	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 nm
Formulation	Supplied 0.2 mg/mL 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	0.25-1 µg/10 ⁶ cells	Human mature dendritic cells

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.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.