

DESCRIPTION

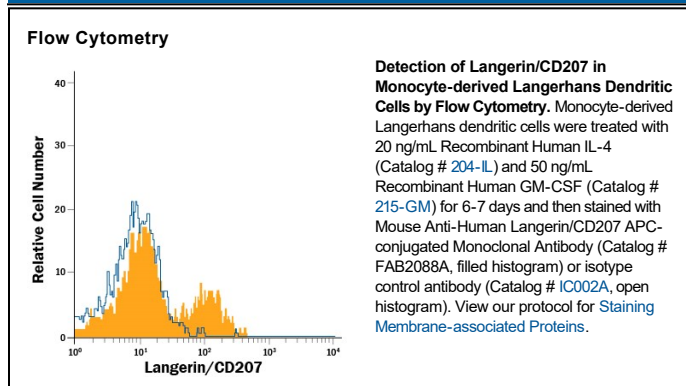
Species Reactivity	Human
Specificity	Detects human Langerin/CD207 in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG ₁ Clone # 343828
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Langerin/CD207 Tyr64-Pro328 Accession # Q9UJ71
Conjugate	Allophycocyanin Excitation Wavelength: 620-650 nm Emission Wavelength: 660-670 nm
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

Langerin (also known as CD207) is a type II transmembrane glycoprotein which is member K of the C-type lectin domain family 4 (1). Langerin is used as a marker for Langerhans cells (LCs) which represent the immature dendritic cells in the epidermis (1, 2). LCs uniquely contain "tennis racket"-shaped endosomal recycling compartment subdomains with pentalamellar membranes termed Birbeck granules (1-3). Langerin is necessary and sufficient for Birbeck granule formation (1). The 328 amino acid (aa) human langerin sequence contains a 43 aa cytoplasmic domain, a 21 aa transmembrane domain and a 264 aa extracellular domain (ECD) that contains a coiled-coil domain and a single C-type lectin domain. Trimerization greatly increases the lectin binding affinity (4). Langerin internalizes endogenous proteins such as type I procollagen. Internalization by LC is thought to lead to suppression of self reactions (4-6). Langerin also mediates endocytosis of non-peptide antigens containing mannose, N-acetyl glucosamine and fucose that are expressed by mycobacteria and fungi (4, 7). Some antigens, such as the *M. leprae* glycolipid arabinomycolate, are ultimately presented by human LC CD1a in cutaneous-draining lymph nodes (8). Langerin performs a barrier-like function to HIV-1 transmission due to its internalization of virus particles for destruction (9). A rare human polymorphism within the lectin domain, W264R, abolishes both carbohydrate recognition and Birbeck granule formation (10, 11). Genetic deletion of mouse langerin was not shown to have functional consequence other than abolishing Birbeck granule formation (12). Human langerin shares 68%, 62%, 71% aa identity with mouse, rat and bovine langerin ECD, respectively.

References:

1. Valladeau, J. *et al.* (2000) *Immunity* **12**:71.
2. Valladeau, J. *et al.* (2003) *Immunol. Res.* **28**:93.
3. McDermott, R. *et al.* (2002) *Mol. Biol. Cell* **13**:317.
4. Stambach, N. S. and M. E. Taylor (2003) *Glycobiology* **13**:401.
5. Tada, Y. *et al.* (2006) *J. Invest. Dermatol.* **126**:1549.
6. Ritter, U. and A. Osterloh (2007) *Med. Microbiol. Immunol.* **196**:51.
7. Takahara, K. *et al.* (2003) *Int. Immunol.* **16**:819.
8. Hunger, R. E. *et al.* (2004) *J. Clin. Invest.* **113**:701.
9. De Witte, L. *et al.* (2007) *Nat. Med.* **13**:367.
10. Verdijk, P. *et al.* (2005) *J. Invest. Dermatol.* **124**:714.
11. Ward, E. M. *et al.* (2006) *J. Biol. Chem.* **281**:15450.
12. Kissenpfennig, A. *et al.* (2005) *Mol. Cell. Biol.* **25**:88.