

DESCRIPTION

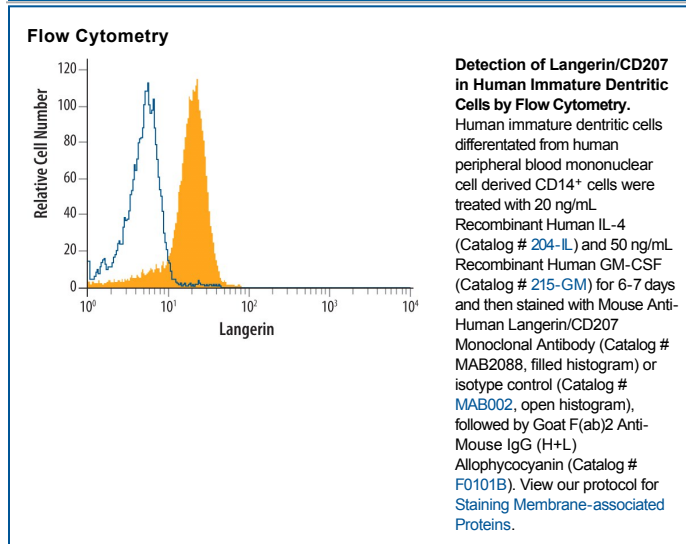
Species Reactivity	Human
Specificity	Detects human Langerin/CD207 in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG ₁ Clone # 343828
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Langerin/CD207 Tyr64-Pro328 Accession # Q9UJ71
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
Western Blot	1 µg/mL	Recombinant Human Langerin/CD207 (Catalog # 2088-LN)
Flow Cytometry	0.25 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA



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. <ul style="list-style-type: none"> ● 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.

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 fungus (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:

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