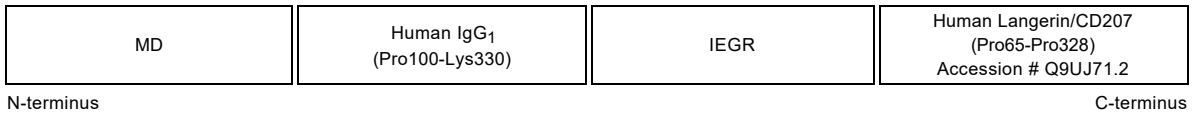
# Recombinant Human Langerin/CD207 Fc Chimera

Catalog Number: 10401-LN

## DESCRIPTION

**Source**

Chinese Hamster Ovary cell line, CHO-derived human Langerin/CD207 protein




| | |
|---|---|
| **N-terminal Sequence Analysis** | Met |
| **Structure / Form** | Disulfide-linked homodimer |
| **Predicted Molecular Mass** | 56 kDa |

## SPECIFICATIONS

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|---|---|
| **SDS-PAGE** | 58-71 kDa, under reducing conditions |
| **Activity** | Measured by its binding ability in a functional ELISA.<br>When Recombinant Human Langerin/CD207 Fc Chimera (Catalog # 10401-LN) is immobilized at 0.2 µg/mL (100 µL/well), Biotinylated Mannose-Polyacrylamide binds with an $ED_{50}$ of 20-160 ng/mL. |
| **Endotoxin Level** | <0.10 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS and NaCl with Trehalose. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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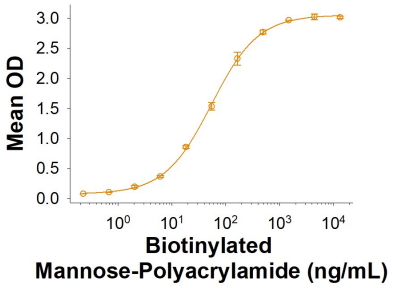
|---|---|
| **Reconstitution** | Reconstitute at 500 µg/mL in PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

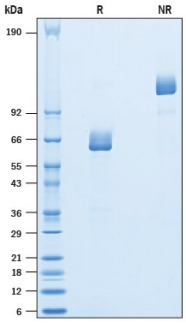
## DATA

**Binding Activity**




When Recombinant Human Langerin/CD207 Fc Chimera (Catalog # 10401-LN) is immobilized at 0.2 µg/mL (100 µL/well), Biotinylated Mannose-Polyacrylamide binds with an $ED_{50}$ of 20-160 ng/mL.

**SDS-PAGE**




2 µg/lane of Recombinant Human Langerin/CD207 Fc Chimera (Catalog # 10401-LN) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 58-71 kDa and 116-142 kDa, respectively.



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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

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## BACKGROUND

Langerin (also known as CD207) is a transmembrane glycoprotein within the type II C-Type lectin receptor family and has been identified as a pathogen binding receptor for immune regulation (1). Human langerin consists of an extracellular domain (ECD) containing a coiled-coil domain and a single C-type lectin domain, a transmembrane domain and a short cytoplasmic domain with a proline-rich motif. The mature ECD of human langerin shares 68%, 62%, 71% amino acid identity with mouse, rat and bovine langerin ECD, respectively. 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). 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 fungae (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).

**References:**

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