**DESCRIPTION**

| Source | Mouse myeloma cell line, NS0-derived  
Tyr64-Pro328, with an N-terminal 9-His tag  
Accession # Q9UJ71 |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>N-terminal Sequence Analysis</td>
<td>His</td>
</tr>
<tr>
<td>Predicted Molecular Mass</td>
<td>31 kDa</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS**

| SDS-PAGE | 35-40 kDa, reducing conditions |
| Endotoxin Level | <0.10 EU per 1 μg of the protein by the LAL method. |
| Purity | >95%, by SDS-PAGE under reducing conditions and visualized by silver stain. |
| Formulation | Lyophilized from a 0.2 μm filtered solution in PBS. See Certificate of Analysis for details. |

**PREPARATION AND STORAGE**

| Reconstitution | Reconstitute at 100 μg/mL in sterile PBS. |
| Shipping | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| Stability & Storage | Use a manual defrost freezer and avoid repeated freeze-thaw cycles.  
- 12 months from date of receipt, -20 to -70 °C as supplied.  
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.  
- 3 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 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: