Recombinant Human IL1RAPL1

Catalog Number: 9949-MR

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human IL1RAPL1 protein

Human IL1RAPL1 (Leu19-Thr357) Accession # Q9NZN1	IEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Leu19
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	66 kDa

SPECIFICATIONS

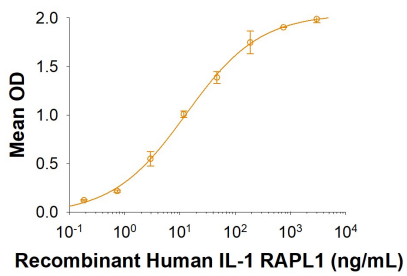
SDS-PAGE	81-92 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human PTPRD Fc Chimera is coated at 1 µg/mL, 100 µL/well, Recombinant Human IL1RAPL1 binds with an ED_{50} of 5-30 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL 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 with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

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.** • 12 months from date of receipt, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

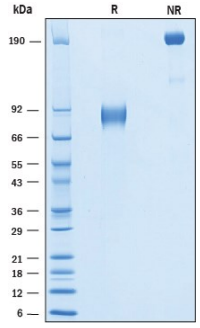
DATA

Binding Activity



When Recombinant Human PTPRD Fc Chimera is coated at 1 µg/mL, Recombinant Human IL1RAPL1 Fc Chimera binds with an ED_{50} of 5-30 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Human IL1RAPL1 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® blue staining, showing bands at 81-92 kDa and 160-180 kDa, respectively.

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BACKGROUND

Interleukin 1 receptor accessory protein-like 1 (IL1RAPL1), also known as Oligophenin-4 (OPHN4) and three immunoglobulin domain containing IL-1 receptor-related 2 (TIGIRR-2) (1), is a member of the IL-1 receptor superfamily. IL1RAPL1 is a single pass type I membrane protein which contains an N-terminal signal peptide (aa 1-18), three extracellular immunoglobulin-like domains (aa 19-350), a transmembrane domain (aa 358-378), an intracellular Toll/IL-1R domain (aa 403-562), and a long C-terminal tail which interacts with multiple signaling molecules (aa 549-644) (2). High expression levels of IL1RAPL1 was found in post-natal hippocampus, and its expression is upregulated by neuronal activity (3). The extracellular domain of IL1RAPL1 can mediate synapse formation through trans-synaptic interaction with PTPRD (4, 5). In neurons, IL1RAPL1 interacts with PSD-95, a major scaffolding protein of excitatory synapses, and modulates its synaptic localization by regulating JNK activity and PSD-95 phosphorylation (3). Mutation or deletion of IL1RAPL1 gene is associated with non-syndromic intellectual disability and autism spectrum disorder (5). Human IL1RAPL1 shares 98% and 99% aa sequence identity with mouse and rat IL1RAPL1, respectively.

References:

1. Born, T.L. *et al.* (2000) J. Biol. Chem. **275**:29946.
2. Bahi, N. *et al.* (2003) Hum. Mol. Gen. **12**:1415.
3. Pavlowsky, A. *et al.* (2010) Curr. Biol. **20**:103.
4. Yoshida, T. *et al.* (2011) J. Neurosci. **31**:13485.
5. Ramos-Brossier, M. *et al.* (2015) Hum Mol Genet. **24**:1106.

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