

**DESCRIPTION**

<b>Source</b>	Human embryonic kidney cell, HEK293-derived human PTPRD protein		
	Human PTPRD (Glu21-Ser1174) Accession # P23468	IEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)
	N-terminus		C-terminus

<b>N-terminal Sequence Analysis</b>	Glu21
<b>Structure / Form</b>	Disulfide-linked homodimer
<b>Predicted Molecular Mass</b>	154 kDa

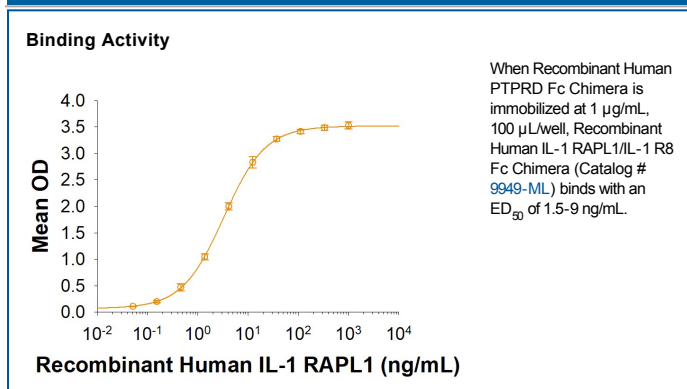
**SPECIFICATIONS**

<b>SDS-PAGE</b>	137-151 kDa, reducing conditions
<b>Activity</b>	Measured by its binding ability in a functional ELISA. When Recombinant Human PTPRD Fc Chimera is immobilized at 1 µg/mL, 100 µL/well, Recombinant Human IL-1 RAPL1/IL-1 R8 Fc Chimera (Catalog # 9949-ML) binds with an ED <sub>50</sub> of 1.5-9 ng/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>80%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 400 µg/mL in PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<ul style="list-style-type: none"> <li>● 12 months from date of receipt, ≤ -20 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, ≤ -20 °C under sterile conditions after reconstitution.</li> </ul>

**DATA**



**BACKGROUND**

Human protein-tyrosine phosphatase delta (PTPRD) is a type I membrane protein. It contains a 1245 amino acid (aa) long extracellular domain (ECD), a 25 amino acid long transmembrane domain, and a 622 amino acid cytoplasmic domain. A cleavage during post-translational modification separates the extracellular domain from the transmembrane segment through a process called "ectodomain shedding" (1). The extracellular regions are comprised of three Ig-like C2 domains followed immediately by eight fibronectin type-III like domains (1). The human PTPRD extracellular domain shares 98% and 62% aa identity with mouse and rat PTPRD, respectively.

Protein-tyrosine phosphatases (PTPs) constitute a structurally diverse family of tightly regulated enzymes with important regulatory roles (1-6). PTPRD is a member of the PTPs and is detected in brain and other tissues including colon and breast (1). It has been demonstrated that phosphorylated STAT3 (p-STAT3) is a direct substrate of PTPRD and that cancer-specific mutations in PTPRD abrogate its ability to dephosphorylate STAT3 (5). PTPRD interacts with NGL-3 (Netrin-G ligand-3) via its first two FNIII repeats to promote synapse formation (3). PTPRD can also bind to IL1RAPL1 and its paralog IL1RAPL2; the IL1RAPL1/PTPRD complex recruits RhoGAP2 at excitatory synapses to induce dendritic spine formation (4). Recent studies have indicated SALM5 forms heterotetramer with PTPRD to induce synaptic differentiation (6).

**References:**

1. Pulido, R. *et al.* (1995) Proc. Natl. Acad. Sci. USA **92**:11686.
2. Östman, A. *et al.* (2006) Nature Reviews Cancer **6**:307.
3. Kwon, SK. *et al.* (2010) J. Biol. Chem. **285**:13966.
4. Valnegri, P. *et al.* (2011) Hum. Mol. Genet. **20**:4797.
5. Ortiz, B. *et al.* (2014) Proc. Natl. Acad. Sci. USA. **111**:8149.
6. Lin, Z. *et al.* (2018) Nat, Commun. **9**:268.