



**LD Biopharma, Inc.**  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human PCDHB12 Protein  
**Catalog Number:** hRP-1440  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human protocadherin beta-12 (PCDHB12) gene is a member of the protocadherin beta gene cluster, one of three related gene clusters tandemly linked on chromosome five. The gene clusters demonstrate an unusual genomic organization similar to that of B-cell and T-cell receptor gene clusters. The beta cluster contains 16 genes and 3 pseudogenes, each encoding 6 extracellular cadherin domains and a cytoplasmic tail that deviates from others in the cadherin superfamily. The extracellular domains interact in a homophilic manner to specify differential cell-cell connections. Unlike the alpha and gamma clusters, the transcripts from these genes are made up of only one large exon, not sharing common 3' exons as expected. These neural cadherin-like cell adhesion proteins are integral plasma membrane proteins. Their specific functions are unknown but they most likely play a critical role in the establishment and function of specific cell-cell neural connections.

Full-length mature human PCDHB12 cDNA (27–690aa, derived from BC045637) was constructed with codon optimization and expressed with a human Alpha-Fetal Protein N-terminal domain (AFP<sub>n</sub>)-His-TEV cleavage site (219aa) fusion at its N-terminal. This protein is expressed in *E. coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

**Gene Symbol:** PCDHB12 (PCDH-BETA12)  
**Accession Number:** NP\_061755  
**Species:** Human  
**Size:** 20 µg / Vial  
**Composition:** 0.2 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Glycerol.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.



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## Key References

Vanhalst K, et al., *The human and murine protocadherin-beta one-exon gene families show high evolutionary conservation, despite the difference in gene number*. FEBS Lett. 495 (1-2), 120-125 (2001)

## Applications

1. May be used for in vitro PCDHB12 mediated neuronal cell communication regulation study with this protein as either coating matrix protein or soluble factor.
2. May be used as PCDHB12 protein-protein interaction assay.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMKVDALTAIEKPTGDEQ  
SSGCLLENQLPAFLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT  
SCEAYEEDRETFMNKF IYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT  
KELRESSGGSHHHHHHGS~~ENLYFQ~~SGSETGNFLVMEELQSGSFVGNLAKTLGLEVSELSSRGA  
RVVSNNDNKECLQLDNTNTGDLRLREMLDREELCGSNEPCVLYFQVLMKNPTQFLQIELQVRDIND  
HSPVFLEKEMLLEIPENSPVGAVFLLESAKDLVGINAVKSYTINPNSHFHVKIRVNPDRKYP  
ELVLDKALDYEERPELSFILTALDGGSPPRSGTALVRVVVDINDNSPEFEQAFYEVKILENSI  
LGSLVVTVSAWDLDSGTNSELSYTFSHASEDIRKTFEINQKSGDITLTAPLDFEAIESYSIIIQ  
ATDGGGLFGKSTVRIQVMDVNDNAPEITVSSITSPIPENTPETVVMVFRIRDRDSDGNGKMVCS  
IPEDIPFVLKSSVNNYYTLETERPLDRESRAEYNITITVTDLGTPLRKTEHNITVLVSDVNDNA  
PAFTQTSYALFVRENNSPALHIGSISATDRDSTNAQVNYSLPSQDPHLPLASLVSINADNGH  
LFALRSLDYEALQGFQFRVGATDHGSPALSSEALVRVLVLDANDNSPFVLYPLQNGSAPCTELV  
PWAAEPGYLVTKVAVDGDGSGQNAWLSYQLLKATEPGLFGVWAHNGEVRTARLLSERDAAKHRL  
VVLVKDNGEPPRSATATLHVLLVDGFSQPYLPLPEAAPAQADSLTVYL