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- PRODUCT DATA SHEET -

Name of Product: Recombinant Laminin α 5-C Protein
Catalog Number: hRP-1324
Manufacturer: LD Biopharma, Inc.

Introduction

Human LAMA5 gene encodes one of the vertebrate laminin a chains. Laminins, a family of extracellular matrix glycoproteins, are the major noncollagenous constituent of basement membranes. They have been implicated in a wide variety of biological processes including cell adhesion, differentiation, migration, signaling, neurite outgrowth and metastasis. Laminins are composed of 3 non identical chains: laminin a, b and g (formerly A, B1, and B2, respectively) and they form a cruciform structure consisting of 3 short arms, each formed by a different chain, and a long arm composed of all 3 chains. Each laminin chain is a multi-domain protein encoded by a distinct gene. The protein encoded by this gene is the a-5 subunit of laminin-10 (laminin-511), laminin-11 (laminin-521) and laminin-15 (laminin-523). Recently many functional domains have been identified in various laminin subunit protein.

Human laminin subunit a 5 protein (LAMA5) C-terminal of extracellular domain cDNA (3026 – 3482 aa) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) 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: LAMA5 (C-terminal domain)
Accession Number: NP_005551.2
Species: Human
Size: 20 μ g / 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

Peter K., et al., *Identification of cell-binding sites on the Laminin $\alpha 5$ N-terminal domain by site-directed mutagenesis*. J. Biol. Chem. 276 10906-10912 (2000)

Kikkawa, Y., et al., *The lutheran/basal cell adhesion molecule promotes tumor cell migration by modulating integrin-mediated cell attachment to laminin-511 protein*. J. Biol. Chem. 288 (43), 30990-31001 (2013)

Rahman, F., et al., *The expression of laminin-5 in severe dysplasia / carcinoma in situ and early invasive squamous cell carcinoma: an immunohistochemical study*. Minerva Stomatol 62 (5), 139-146 (2013)

Applications

1. May be used for in vitro non-glycosylated Laminin $\alpha 5$ subunit C-terminal domain mediated cell proliferation regulation study with this protein as either coating matrix protein or soluble factor.
2. May be used for Laminin $\alpha 5$ subunit C-terminal domain protein-protein interaction assay.
3. As enzymatic substrate for various proteases.
4. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFEIQVFLGGSRKRVLVRVERATVYSVEQDNDLELAD
AYYLGGVPPDQLPPSLRRLFPTGGSVRGCVKGIKALGKYVDLKRNLNTTGVSAAGCTADLLVGRAM
TFHGHGFLRLALSNAVPLTGNVYSGFGFHSQAQDSALLYRASPDGLCQVSLQQGRVSLQLLRTE
VKTQAGFADGAPHYVAFYSNATGVWLYVDDQLQQMKPHRGPPPELQPQPEGPPRLLLLGGLPESG
TIYNFSGCISNVFVQRLGPRVFDLQQNLGSVNVSTGCAPALQAQTPGLGPRGLQATARKASR
RSRQPARHPACMLPPLRLRTRDSYQFGGSLSSHLEFVGIARHRNWP SLSMHVLP RSSRGLLLF
TARLRPGSPSLALFLSNGHFVAQMEGLGTRLRAQSRQSRPGRWHKVSVRWEKNRILLVTDGAR
AWSQEGPHRQHQAHPQPHTLFVGGLPASSHSSKLP