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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human VNT-AG10+32 Protein
Catalog Number: hRP-1054
Manufacturer: LD Biopharma, Inc.

Introduction

Human CD49f (Integrin a6) has been demonstrated to be specific membrane protein marker for human hematopoietic stem cell (HSC). Two peptide AG-10 (NRWHSIYITRFG) and AG-32 (TWYKIAFQRNRK), which derived from human laminin-111, has been reported to engage with the $\alpha_6\beta_1$ integrin very specifically. To generate a synthetic matrix protein for coating to maintain HSC culture in vitro, AG-10 and AG-32 peptide was fused to human Vitronectin (VNT) C-terminal as recombinant protein. This recombinant VNT-AG10+32 fusion protein may be served as synthetic matrix protein for interaction with $\alpha_6\beta_1$ integrin positive cells.

DNA fragment which encoded for two peptide AG-10 (NRWHSIYITRFG) and AG-32 (TWYKIAFQRNRK) was fully synthesized and fusion to human vitronectin (63-398aa) C-terminal with flexible linker domain (GGGGSGGGGS) for generating VNT-AG10+32 fusion protein. VNT-AG10+32 DNA fragment was constructed with codon optimization and 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:	Artificial synthetic VNT-AG10+32
Accession Number:	NP_000692
Species:	Human
Size:	50 μg / Vial
Composition:	0.5 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

Faiyaz Notta. Et al., *Isolation of single human hematopoietic stem cells capable of long-term multilineage engraftment*. Science. 8 July, 2011. P218-221.

Ying Meng, et al. *Characterization of integrin engagement during defined human embryonic stem cell culture*. FASEB. Vol. 24,1056-1065. April, 2012

Motoyoshi Nomizu, et al., *Identification of Cell Binding Sites in the Laminin 1 Chain Carboxyl-terminal Globular Domain by Systematic Screening of Synthetic Peptides*. JBC. 270, 20583-20590. (1995)

Applications

1. May be used for in vitro integrain alpha 6 receptor mediated cell differentiation, such as HSC or ES cells regulations, study by using VNT-AG10+32 fusion protein as coating matrix in cell culture.

Quality Control

1. Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHGNLYFQGGEFGTTNTVAAYNLTWKSTNFKTILEWEPKPVNQVYTV
QISTKSGDWKSKCFYTTDTECDLTDEIVKDVKQTYLARVFSYPAGNVESTGSAGEPLYENSPEF
TPYLETNLGQPTIQSFEQVGTKVNVTVEDERTLVRRNNTFLSLRDVFGKDLIYTLYYWKSSSSG
KKTAKTNTNEFLIDVDKGENYCFSVQAVIPSRTVNRKSTDSPVECMGQEKGEFRE