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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human VTN-GBF8 Fusion Protein
Catalog Number: hRP-1158
Manufacturer: LD Biopharma, Inc.

Introduction

Human collagen-I has been widely used as coating material for various cell culture and specific lineage differentiation application. To provide a defined coating matrix for potential therapeutic development, various functional domain of collagen-I has been identified. One of domain (124 - 402aa, CBF8) was demonstrated to be hepatocytes specific attachment matrix through $\alpha 3\beta 1$ integrin mediated adhesion. Human vitronectin (VTN) is a liver derived major plasma glycoprotein that exhibits multiple activities and functions as a cell adhesion molecule and regulator of coagulation. It contains the amino acid structural motif, Arg-Gly-Asp (RGD), which is involved in cell attachment. Recombinant human VTN protein has been successfully used as coating matrix protein for long-term culture of human ES cells with excellent binding affinity for polystyrene culture dishes. Purified human VTN- CBF8 fusion protein may provides an ideal coating matrix protein for in vitro expansion of human Hepatocytes.

Human collagen-I CBF8 domain cDNA fragment (26 - 542 aa) was constructed with N-terminal fusion of human VTN (61-398aa) 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 as soluble protein. Coating this recombinant protein at 5-10 μg / well (6 well plate) in Hepatocytes specific medium can be used for human liver cell differentiation study in vitro.

Gene Symbol: VTN-CBF8
Accession Number: NP_000629 & NP_000079.2
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

Choi HJ, et al. *Successful mouse hepatocyte culture with sandwich collagen gel formation*. J Korean Surg Soc. Apr; 84(4):202-8 (2013).

US patent: 5731409. *Polypeptide with type I collagen activity*.

Guokai Chen, et al. *Chemically defined conditions for human iPSC derivation and culture*. Nature Methods 8. 424-429 (2011).

Applications

1. May be used for in vitro human hepatocytes differentiation as coating matrix protein.
2. May be used as culture matrix protein for long term liver cells cultivation in vitro.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

VTN_(61-398aa) + linker + Collagen-I_(124 - 402 aa).

MTRGDVFTMPED EYTVYDDGEEKNNATVHEQVGGPSLTS DLQAQSKGNPEQTPVLKPEEEAPAP
EVGASKPEGIDSRPETLHPGRPQPPAEELCSGKPFDAFTDLKNGSLFAFRGQYCYELDEKAVR
PGYPKLIRDVWGIEGPIDAAFTRINCQKTYLFGKGSQYWR FEDGVLDPDYPRNISDGF DGI PDN
VDAALALPAHSYSGRERVYFFK GKQYWEYQFQH QPSQEECEGSSLSAVFEHFAMMQRDSWEDIF
ELLFWGRTSAGTRQPQFISRDWHGVP GQVDAAMAGRIYISGMAPRPSLAKKQRF RHRNRKGYRS
QRGHSRGRNQNSRRPSRGGGSGGGGSNIEFGPAGPPGRDGI PGQPGLPGPPGPPGPPGPPGLG
GNFAPQLSYGYDEKSTGGISVPGPMG P SGPRGLPGPPGAPGPQGFQGPPEPGE PGASGPMGPR
GPPGPPGKNGDDGEAGKPRPGERGPPGPQGARGLPGTAGLPGMKGHRGFSGLDGA KGDAGPAG
PKGEPGSPGENGAPGQMGRGLPGERGRPGAPGPAGARGNDGATGAAGPPGPTGPAGPPGFPGA
VGAKGEAGPQGP RGSEGPQGV RGE P GPPGPAGAAGPAGNPGADGQPGAKGANGA