



LD Biopharma, Inc.
9924 Mesa Rim Road Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human Vitronectin⁴⁷⁸ Protein
Catalog Number: hRP-1056
Manufacturer: LD Biopharma, Inc.

Introduction

Human VTN (Vitronectin) is a 478 amino acid protein (1-19 = signal domain), belongs to a member of the pexin family. Vitronectin is an abundant glycoprotein found in serum and the extracellular matrix and promotes cell adhesion and spreading, inhibits the membrane-damaging effect of the terminal cytolytic complement pathway, and binds to several serpin serine protease inhibitors. It is a secreted protein and exists in either a single chain form or a clipped, two chain form held together by a disulfide bond. Vitronectin has been speculated to be involved in homeostasis and tumor malignancy. The publication from Katherine's paper indicated that full-length recombinant human vitronectin protein benefits long-term human ES cell culture when used as coating matrix protein.

Human mature Vitronectin gene (478 aa) was constructed with codon optimization and expressed in non-fusion protein form in E.coli as inclusion bodies. The final product was refolded using our unique "temperature shift inclusion body refolding" technology and chromatographically purified. Coating this recombinant protein at 5-10 µg / well (6 well plate) in xeno-free NutriStem medium can be used for long-term human ES cells maintenance or human iPS cell generation in vitro.

Gene Symbol: VTN
Accession Number: NP_000629
Species: Human
Size: 250 µg / Vial
Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation buffer containing sucrose, EDTA and DTT.
Storage: In liquid. Keep at -20°C for long term storage. Product is stable at 4 °C for at least 30 days.



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Key References

Katherine Wojcichowski, et al., *Expression, production, and characterization of full-length vitronectin in Escherichia coli*. Protein Expression and Purification 36, 131-138 (2004)

Stefan R. Braam. Et al. *Recombinant Vitronectin is a Functionally Defined Substrate That Supports Human Embryonic Stem Cell Self-Renewal via aVb5 integrin*. STEM CELLS. Vol 26. Issue 9. 2257-2265 (2008)

Stefan Frank, et al., *Small molecule-assisted, line-independent maintenance of human pluripotent stem cells in defined conditions*. PlosOne. Vol:7, July,e41958 (2012)

Application

As coating matrix protein for human ES or iPS cell cultivation when combine with xeno-free cell culture media, such as NutriStem, FTDA or E8 culture medium for either cell maintenance or iPS generation in vitro.

Quality Control

Purity: > 95% by SDS-PAGE.

Recombinant Protein Sequence

MDQESCKGRCTEGFNVDKKCQCDELCSYYQSCCTDYTAECKPQVTRGDVFTMPEDEYTVYDDGE
EKNNATVHEQVGGPSLTSDLQAQSKGNPEQTPVLKPEEEAPAPEVGASKPEGIDSRPETLHPGR
PQPPAEEELCSGKPFDAFTDLKNGSLFAFRGQYCYELDEKAVRPGYPKLIRDVWGIEGPIDAAF
TRINCQGKTYLFGKSQYWRFEEDGVLDPDYPRNISDGFDPDNVDAALALPAHSYSGRERVYFF
KKGKQYWEYQFQHQPSEQEECEGSSLSAVFEHFAMMQRDSWEDIFELLFWGRTSAGTRQPQFISRD
WHGVPGQVDAAMAGRIYISGMAPRPSLAKKQRFHRNRKGYRSQRGHSRGRNQNSRRPSRATWL
SLFSSEESNLGANNYDDYRMDWLVPATCEPIQSVFFFSGDKYYRVNLRTRRVDTVDPPYPRSIA
QYWLGC PAPGHL