LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human Vimentin Protein
Catalog Number: hRP-1509
Manufacturer: LD Biopharma, Inc.

Introduction

Human Vimentin (VIM) gene encodes a member of the intermediate filament family. Intermediate filamentents, along with microtubules and actin microfilaments, make up the cytoskeleton. The protein encoded by human VIM gene is responsible for maintaining cell shape, integrity of the cytoplasm, and stabilizing cytoskeletal interactions. It is also involved in the immune response, and controls the transport of low-density lipoprotein (LDL)-derived cholesterol from a lysosome to the site of esterification. It functions as an organizer of a number of critical proteins involved in attachment, migration, and cell signaling. Mutations in this gene cause a dominant, pulverulent cataract. Recent data indicated that VIM is reliable marker for monitoring Epithelial-mesenchymal transition (EMT) during early stage of cancer development.

Full-length mature human VIM (465aa, derived from BC000163) gene was constructed with 29 aa N-terminal T7 / His / TEV cleavage site Tag 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:	VIM (CTRCT30; HEL113)
Accession Number:	NP_003371
Species:	Human
Size:	50 µg / Vial
Composition:	1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT .
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Teo CS et al., *Cellular vimentin regulates construction of dengue virus replication*

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complexes through interaction with NS4A protein. J. Virol. 88 (4), 1897-1913 (2014)

Rathje LS, et al., *Oncogenes induce a vimentin filament collapse mediated by HDAC6 that is linked to cell stiffness*. Proc. Natl. Acad. Sci. U.S.A. 111 (4), 1515-1520 (2014)

Tsang JY, et al., *P-cadherin and vimentin are useful basal markers in breast cancers*. Hum. Pathol. 44 (12), 2782-2791 (2013)

Tsujimura,K., et al., *Visualization and function of vimentin phosphorylation by cdc2 kinase during mitosis*. J. Biol. Chem. 269 (49), 31097-31106 (1994)

Applications

1. May be used for in vitro VIM mediated cytoskeleton regulation for cancer cell imgration study by intracellular delivery this protein with “ProFectin” reagent.
2. May be used for mapping VIM protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein for monitoring breast cancer progression.
5. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFSTRSVSSSSYRRMFGGPGTASRPSSSRSYVTTSTR
TYSLGSALRPSTSRSLYASSPGGVYATRSSAVRLRSSVPGVRLLQDSVDFSLADAINTEFKNTR
TNEKVELQELNDRFANYIDKVRFLEQQNKILLAELEQLKGQGKSRLGDLYEEEMRELRRQVDQL
TNDKARVEVERDNLAEDIMRLREKLQEEMLQREEAENTLQSFRQDVDNASLARLDLERKVESLQ
EEIAFLKKLHEEEIQELQAQIQEQHVQIDVDVSKPDLTAALRDVRQQYESVAAKNLQEAEEWYK
SKFADLSEAANRNNDALRQAKQESTEYRRQVQSLTCEVDALKGTNESLERQMREMEENFAVEAA
NYQDTIGRLQDEIQNMKEEMARHLREYQDLLNVKMALDIEIATYRKLLEGEESRISLPLPNFSS
LNLRETNLDSLPLVDTHSKRTLLIKTVETRDGQVINETSQHHDDLE