



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human KRT19 Protein
Catalog Number: hRP-1624
Manufacturer: LD Biopharma, Inc.

Introduction

There are at least three-cytoskeletal systems in eukaryotic cells; the intermediate filament (IF) protein family is most complex. Depending on their polymerization properties and tissue specificity they are divided into six subtypes. Intermediate filaments of type-I and type-II are cytokeratin. Cytokeratin are also classified based on the expression as simple epithelial and stratified squamous cytokine. Cytokeratins are mainly involved in the protection of epithelial cells from mechanical and non-mechanical stresses that resulting in cell death. Human Keratin, type-I cytoskeletal 19 (KRT19) gene encodes the type I intermediate filament chain keratin 19. The type I cytokeratins consist of acidic proteins, which are arranged in pairs of heterotypic keratin chains. Unlike its related family members, KRT19, smallest known acidic cytokeratin is not paired with a basic cytokeratin in epithelial cells. It is specifically expressed in the periderm, the transiently superficial layer that envelopes the developing epidermis. Recent report indicated that detection of blood sample KRT19 (CYFRA21.1) could be used for early stage diagnosis of lung cancer.

Full-length human KRT19 cDNA (399aa, derived from BC067744) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein was 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: KRT19 (CK19; K19; K1CS)
Accession Number: NP_002267.2
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 and DTT.
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

Skondra M, et al., *Detection of circulating tumor cells in breast cancer patients using multiplex reverse transcription-polymerase chain reaction and specific primers for MGB, PTHRP and KRT19 correlation with clinicopathological features*. *Anticancer Res.* 34 (11), 6691-6699 (2014)

Lumachi F, et al., *Measurement of serum carcinoembryonic antigen, carbohydrate antigen 19-9, cytokeratin-19 fragment and matrix metalloproteinase-7 for detecting cholangiocarcinoma: a preliminary case-control study*. *Anticancer Res.* 34 (11), 6663-6667 (2014)

Lacoste-Collin L, et al., *Improvement of the cytological diagnostic accuracy of follicular thyroid lesions by the use of the Ki-67 proliferative index in addition to cytokeratin-19 and HBME-1 immunomarkers: a study of 61 cases of liquid-based FNA cytology with histological controls*. *Cytopathology* 25 (3), 160-169 (2014)

Kuessel L, et al., *Cytokeratin-19 as a biomarker in urine and in serum for the diagnosis of endometriosis--a prospective study*. *Gynecol. Endocrinol.* 30 (1), 38-41 (2014)

Applications

1. May be used for in vitro KRT19 mediated cellular cytoskeletal polymerization regulation study for cell stress induced apoptosis by intracellular delivery of this protein with "ProFectin" reagent.
2. May be used protein-protein interaction assay.
3. Potential biomarker protein for clinical applications such as monitoring lung cancer progression by measuring tissue KRT19 protein level in blood or tumor samples.
4. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence



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MASMTGGQQMGRGHHHHHGNLYFQGEFTSYSYRQSSATSSFGGLGGGSVRFPGVAFRAPS IH
GGSGGRGVS SVSSARFVSSSSSGGYGGGYGGVLTASDGLLAGNEKLTMQNLNDR LASYLKVRAL
EAANGELEVKIRDWYQKQGPSPRDYSHYYTTIQDLRDKILGATIENSRIVLQIDNARLAADD F
RTKFETE QALRMSVEADINGLRRVLDELTLARTDLEMQIEGLKEELAYLKKNH EEEI STL RGQV
GGQVSVEVDSAPGTDLAKILSDMRSQYEVMAEQNRKDAEAWFTSRTEELNRE VAGHTEQLQMSR
SEVTDLRRTLQGLEIELQSQLSMKAALEDTLAETEARFGAQLAHIQALISGIEAQLGDVRADSE
RQNQEYQRLMDIKSRLEQEIATYRSLLEGQEDHYNNLSASKVL