



LD Biopharma, Inc.
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San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human C4d Protein
Catalog Number: hRP-1405
Manufacturer: LD Biopharma, Inc.

Introduction

Human C4 (Total 1744aa) gene encodes the acidic form of complement factor 4, part of the classical activation pathway. The protein is expressed as a single chain precursor, which is proteolytically cleaved into a trimer of alpha, beta, and gamma chains prior to secretion. The trimer provides a surface for interaction between the antigen-antibody complex and other complement components. The alpha chain may be cleaved to release C4 anaphylatoxin, a mediator of local inflammation. Deficiency of this protein is associated with systemic lupus erythematosus and type I diabetes mellitus. This gene localizes to the major histocompatibility complex (MHC) class III region on chromosome 6. Varying haplotypes of this gene cluster exist, such that individuals may have 1, 2, or 3 copies of this gene. Recent data indicated that one of the C4 proteolytical fragment C4d (957-1336aa fragment) was linked to higher mortality rates in lung cancer patients, which may be developed as biomarker in monitoring cancer treatment.

Full-length human C4d domain cDNA (957 – 1336 aa) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is 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: C4d
Accession Number: NP_009224.2
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, 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

Daniel Ajona, et al., *Investigation of Complement Activation Product C4d as a Diagnostic and Prognostic Biomarker for Lung Cancer*. J. Natl. Cancer Inst; . 105, 1385-1393 (2013).

Perry AJ, et al., *A molecular switch governs the interaction between the human complement protease C1s and its substrate, complement C4*. J. Biol. Chem. 288 (22), 15821-15829 (2013)

Applications

1. May be used for in vitro human C4d mediated cancer cell resistant to complement-mediated damage pathway regulation study with this protein as either coating matrix protein or soluble factor.
2. May be used for protein-protein interaction assay.
3. As potential diagnostic biomarker for tumors, such as lung cancer.
4. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHGNLYFQGGFETLEIPGNSDPNMI PDGDFNSYVRVTASDPLDTLGS
EGALSPGGVASLLRLPRGCGEQTMIYLAPTLAASRYLDKTEQWSTLPPETKDHAVDLIQKGYMR
IQQFRKADGSYAAWLSRDSSTWLTAFLVKVLSLAQEQVGGSPPEKLQETSNWLLSQQQADGSFQD
PCPVLDRSMQGGLVGNDETVALTAFVTIALHHGLAVFQDEGAEPKQORVEASISKANSFLGEKA
SAGLLGAHAAAITAYALTITKAPVDLLGVAHNNLMAMAQETGDNLYWGSVTGSQSNVSPPTPAP
RNPSDPMPQAPALWIETTAYALLHLLLHEGKAEMADQASAWLTRQGSFQGGFRSTQDTVIALDA
LSAYWIASHTTEERGLNVTLSSSTR