



**LD Biopharma, Inc.**  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human CD5L Protein  
**Catalog Number:** hRP-1175  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

CD5 antigen-like (CD5L or AIM) protein is a member of the scavenger receptor cysteine-rich superfamily (SRCR-SF) and was initially identified as an apoptosis inhibitor that supports the survival of macrophages against various apoptosis-inducing stimuli. CD5L has been detected in human and mouse blood at varying levels. CD5L is produced by lipid-laden foam macrophages located within atherosclerotic plaques, and exacerbates the disease by supporting the survival of macrophages within lesion. In addition, CD5L is incorporated into mature adipocytes via CD36-mediated endocytosis where it suppresses the activity of cytosolic fatty acid synthase (FAS) by direct association resulting in lipolysis, the degradation of triacylglycerols into glycerol and free fatty acids (FFA). In obesity, the augmentation of blood CD5L levels induces vigorous lipolysis in adipose tissues, increasing local extracellular fatty acid concentrations to a level sufficient for the stimulation of adipocyte-expressing toll-like receptor (TLR) 4, which triggers macrophage recruitment and chemokine production by adipocytes.

Full-length mature form of human CD5L cDNA (20 – 347 aa, derived from BC033586) 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:** CD5L (AIM; API6; PRO229; SP-ALPHA; Spalpha)  
**Accession Number:** NP\_005885.1  
**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

Mori, M., et al., *Modification of N-glycosylation modulates the secretion and lipolytic function of apoptosis inhibitor of macrophage (AIM)*. FEBS Lett. 586 (20), 3569-3574 (2012)

Miyazaki T, et al., *AIMing at metabolic syndrome. -Towards the development of novel therapies for metabolic diseases via apoptosis inhibitor of macrophage (AIM)-*. Circ J. 75 (11): 2522-2531. (2011).

Qu, P., et al., *Myeloid-specific expression of Api6/AIM/Sp alpha induces systemic inflammation and adenocarcinoma in the lung*. J. Immunol. 182 (3), 1648-1659 (2009)

## Applications

1. May be used for in vitro non-glycosylated CD5L protein mediated lipolytic pathway regulation study with this protein as either coating matrix protein or as soluble factor.
2. May be used for CD5L protein – protein interaction assay.
3. May be used as enzymatic substrate for various proteases.
4. Potential diagnostic and therapeutic target protein for controlling obesity disease.
5. May be used for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFSPSGVRLVGGGLHRCEGRVEVEQKGQWGTVCDDGWD  
IKDVAVLCRELGC GAASGTPSGILYEPPAEKEQKVL IQSVSCTGTEDTLAQCEQEEVYDCSHDE  
DAGASCENPESSFSPVPEGVRLADGPGHCKGRVEVKHQNQWYTV CQTGWSLRAAKVVCRQLGCG  
RAVLTQKRCNKHAYGRKPIWLSQMSCSGREATLQDCPSGPWGKNTCNHDEDTWVECEDPFDLRL  
VGGDNLCSGRLEVLHKGVWGSVCDNNGEKEDQVVCKQLGCGKSLSPSFRDRKCYGPGVGRIWL  
DNVRCSGEEQSLEQCQHRFWGFHDCTHQEDVAVICSG