



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

**Name of Product:** Recombinant Human NAGK Protein  
**Catalog Number:** hRP-0868  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human N-acetyl-D-glucosamine kinase (NAGK) gene encodes a member of the N-acetylhexosamine kinase family. The encoded protein catalyzes the conversion of N-acetyl-D-glucosamine to N-acetyl-D-glucosamine 6-phosphate, and is the major mammalian enzyme, which recovers amino sugars. mRNA profiling indicated that this gene mainly expressed in blood derived cells, such as CD14<sup>+</sup> Monocytes and BDCA4<sup>+</sup> Dendritic cells.

Full-length pro-peptide human NAGK (19 - 419aa) gene was constructed with 15 aa N-terminal T7 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:** NAGK (GNK; HSA242910)  
**Accession Number:** NP\_060037  
**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, 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.

### Key References

Weihofen, W.A., et al., *Structures of human N-Acetylglucosamine kinase in two complexes with N-Acetylglucosamine and with ADP/glucose: insights into substrate specificity and regulation.* J. Mol. Biol. 364 (3), 388-399 (2006)

Sparks, S.E., et al., *Use of a cell-free system to determine UDP-N-acetylglucosamine 2-*



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*epimerase and N-acetylmannosamine kinase activities in human hereditary inclusion body myopathy. Glycobiology 15 (11), 1102-1110 (2005)*

## **Applications**

1. May be used for in vitro NAGK mediated protein glycosylation modification study with this protein.
2. As soluble / native protein, may be used as enzymatic substrate protein for kinase and ubiquitin assay development.
3. May be used for mapping NAGK protein-protein interaction.
4. May be used as antigen for specific antibody development.

## **Quality Control**

1. Purity: > 90% by SDS-PAGE.

## **Recombinant Protein Sequence**

MASMTGGQQMGRGEFMRTRTGSQLAAREVTGSGAVPRQLEGRRCQAGRDANGGTSSDGSSSMAA  
IYGGVEGGGTRSEVLLVSE~~DK~~ILAEADGLSTNHWLIGTDK~~VER~~INEMVNR~~AKR~~KAGVDPLVP  
LRSLGLSLSGGDQEDAGRILIEELRDRFPYLSESYLITTTDAAGSIATATPDGGVVLISGTGSNC  
RLINPDGSESGCGGWHMMGDEGSAYWIAHQAVKIVFDSIDNLEAAPHDIGYVKQAMFHYFQVP  
DRLGILTHLYRDFDKCRFAGFCR~~KIA~~EQAQQGDPLSRYIFRKAGEMLGRHIVAVLPEIDPVL~~FQ~~  
GKIGLPILCVG~~SV~~WKS~~WELL~~KEGFL~~LALT~~QGREIQ~~QNF~~SSFTLMKLRHSSALGGASL~~GAR~~HI  
GHLLPMDYSANAI~~AF~~YSY~~TFS~~