

Human GCAP1 / GUCA1A Protein (His & GST Tag)

Catalog Number: 14565-H20B



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

C6orf131; COD3; CORD14; dJ1139D8.6; GCAP; GCAP1; GUCA; GUCA1; GC-A; Gcap1; Guca1; mGCAP1

Protein Construction:

A DNA sequence encoding the human GUCA1A (P43080)(Met1-Gly201) was expressed the N-terminal polyhistidine-tagged GST tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

Molecular Mass:

The secreted recombinant human GUCA1A consists of 438 amino acids and predicts a molecular mass of 50.7 KDa. The apparent molecular mass of the protein is approximately 42 KDa in SDS-PAGE under reducing conditions due to glycosylation.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, 10% glycerol, pH 7.4.

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

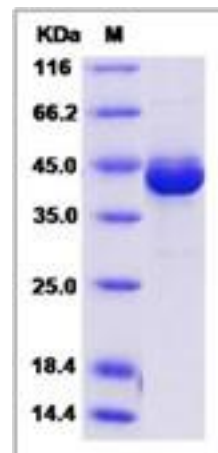
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

GCAP 1 gene plays a role in the recovery of retinal photoreceptors from photobleaching. In the recovery phase, the phototransduction messenger cGMP is replenished by retinal guanylyl cyclase-1 (GC1). GC1 is activated by decreasing Ca(2+) concentrations following photobleaching. The protein encoded by this gene, guanylyl cyclase activating protein 1 (GCAP 1), mediates the sensitivity of GC1 to Ca(2+) concentrations. GCAP 1 promotes activity of GC1 at low Ca(2+) concentrations and inhibits GC1 activity at high Ca(2+) concentrations. Mutations in GCAP 1 gene cause autosomal dominant cone dystrophy (COD3); a disease characterized by reduced visual acuity associated with progressive loss of color vision. GCAP 1 stimulates guanylyl cyclase 1 (GC1) when free calcium ions concentration is low and inhibits GC1 when free calcium ions concentration is elevated. This Ca(2+)-sensitive regulation of GC is a key event in recovery of the dark state of rod photoreceptors following light exposure.

References

1. Surguchov A, *et al.* (1997) The human GCAP1 and GCAP2 genes are arranged in a tail-to-tail array on the short arm of chromosome 6 (p21.1). *Genomics*. 39(3):312-22.
2. Subbaraya I, *et al.* (1995) Molecular characterization of human and mouse photoreceptor guanylate cyclase-activating protein (GCAP) and chromosomal localization of the human gene. *J Biol Chem*. 269(49):31080-9.
3. Payne AM, *et al.* (1998) A mutation in guanylate cyclase activator 1A (GCAP 1) in an autosomal dominant cone dystrophy pedigree mapping to a new locus on chromosome 6p21.1. *Hum Mol Genet*. 7(2):273-7.

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