Human Chitotriosidase / Chitinase 1 / CHIT1 Protein (His Tag)

Catalog Number: **11223-H08H**

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General Information

Gene Name Synonym:

CHI3; CHIT; CHITD; 2300002L19Rik

Protein Construction:

A DNA sequence encoding the human CHIT1 (NP_003456.1) (Met 1-Asn 466) precursor was fused with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 94 % 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 ℃

Predicted N terminal: Ala 22

Molecular Mass:

The recombinant human CHIT1 consists of 456 amino acids after removal of the signal peptide and has a predicted molecular mass of 50.8 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh CHIT1 is approximately 48 kDa.

Formulation:

Lyophilized from sterile 12.5mM Tris, 75mM NaCl, 50% glycerol, pH 7.5

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:

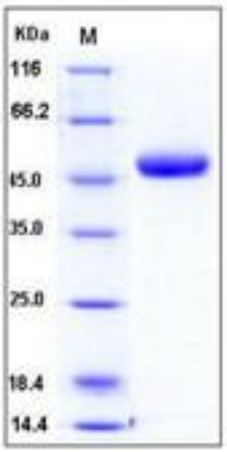
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Chitotriosidase, also known as Chitinase-1 and CHIT1, is a member of the glycosyl hydrolase 18 family and Chitinase class II subfamily. It is a member of the mammalian chitinase family, structurally homologous to chitinases from other species, is synthesized and secreted by specifically activated macrophages. Chitotriosidase is a polymer of N-acetylglucosamine. Serum and plasma chitotriosidase activity is usually measured as the first step in diagnosis of Gaucher disease. Monitoring chitotriosidase activity is widely used during treatment of this pathology by enzyme replacement therapy. Its elevated plasma level reflects gradual intralysosomal accumulation in Gaucher cells (lipid-loaded macrophages). Macrophages overloaded by the enzyme accumulated in lysosomal material (lipids) were shown to secrete chitotriosidase; its increased expression was noted in several lysosomal storage diseases and atherosclerosis. In addition to lipid storage disorders, where Chit activity has longer been used as a marker of disease activity and therapeutic response, elevation of plasma Chit may occur in hematological disorders with storage of erythrocyte membrane breakdown products as thalassemia and different systemic infectious diseases sustained by fungi and other pathogens. Recently, increased Chit activity was demonstrated in CNS from patients with different neurological disorders. Chitotriosidase is believed to play a role in mechanisms of immunity and protection against chitin-containing pathogens.

References

1.Barone R, *et al.* (2007) Plasma chitotriosidase in health and pathology. Clin Lab. 53(5-6): 321-33.
2.Bargagli E, *et al.* (2008) Human chitotriosidase: a potential new marker of sarcoidosis severity. Respiration. 76(2): 234-8.
3.Korolenko TA, *et al.* (2010) Chitotriosidase of human macrophages and mammalian chitinases: biological functions and abnormalities in pathology. Vestn Ross Akad Med Nauk. (11): 39-45.