# Data Sheet (Cat.No.TMPY-01290)

TargetMol

## CHIT1 Protein, Human, Recombinant (His)

### General Information

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| Synonyms: | chitinase 1 (chitotriosidase);CHITD;CHI3;CHIT |
| 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. Predicted N terminal: Ala 22 |
| Species: | Human |
| Expression Host: | HEK293 Cells |
| Accession: | Q13231-1 |
| Molecular Weight: | 50.8 kDa (predicted); 48 kDa (reducing conditions) |

### QC Testing

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| Biological Activity: | Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first. |
| Purity: | > 94 % as determined by SDS-PAGE |
| Endotoxin: | < 1.0 EU/μg of the protein as determined by the LAL method. |
| Formulation: | Supplied as sterile 12. 5 mM Tris, 75 mM NaCl, 50% glycerol, pH 7.5. |

### Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

### Protein Background

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.

Reference

Barone R, et al. (2007) Plasma chitotriosidase in health and pathology. Clin Lab. 53(5-6): 321-33.
Bargagli E, et al. (2008) Human chitotriosidase: a potential new marker of sarcoidosis severity. Respiration. 76(2): 234-8.
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.



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