

Human Bruton Tyrosine Kinase / BTK Kinase Protein (His Tag)

Catalog Number: 10578-H08B



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Biological Solution Specialist

General Information

Gene Name Synonym:

AGMX1; AT; ATK; BPK; IMD1; PSCTK1; XLA; AI528679; xid

Protein Construction:

A DNA sequence encoding the human BTK (NP_000052.1) (Met 1-Ser 659) was expressed with a C-terminal polyhistidine tag.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 85 % as determined by SDS-PAGE

Bio Activity:

1. The specific activity was determined to be 115 nmol/min/mg using Poly(Glu,Tyr)4:1 peptide as substrate. 2. Measured by its ability to bind human BLNK in a functional ELISA.

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 BTK consists of 670 amino acids and predicts a molecular mass of 77.8 KDa.

Formulation:

Supplied as sterile 20mM Tris, 500mM NaCl, 10% glycerol, pH 7.0.

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:

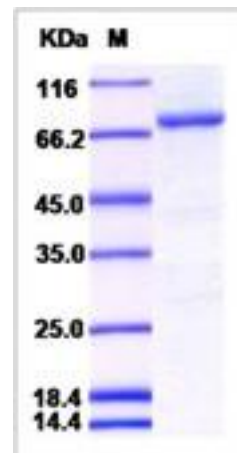
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Bruton's tyrosine kinase (or BTK) is a type of kinase protein expressed in B lymphocytes and T cells. BTK contains a PH domain which binds phosphatidylinositol(3,4,5)-trisphosphate (PIP3). After binding to PIP3, BTK is induced to phosphorylate phospholipase C, which in turn hydrolyzes PIP2 into two second messengers, IP3 and DAG, which then modulate the activity of downstream proteins during B-cell signaling. Btk is also found implicated in the primary immunodeficiency disease X-linked agammaglobulinemia(Bruton's agammaglobulinemia). BTK played a key role in B-cell maturation as well as mast cell activation through the high-affinity IgE receptor. Patients with X-linked agammaglobulinemia have normal pre-B cell populations in their bone marrow but these B-cells can not mature and enter the circulation.

References

- 1.Hashimoto S, *et al.* (1996) Identification of Bruton's tyrosine kinase (Btk) gene mutations and characterization of the derived proteins in 35 X-linked agammaglobulinemia families: a nationwide study of Btk deficiency in Japan. *Blood*. 88(2): 561-73.
- 2.Ohta Y, *et al.* (1994) Genomic organization and structure of Bruton agammaglobulinemia tyrosine kinase: localization of mutations associated with varied clinical presentations and course in X chromosome-linked agammaglobulinemia. *PNAS*. 91(19): 9062-6.
- 3.Smith C, *et al.* (1994) Expression of Bruton's agammaglobulinemia tyrosine kinase gene, BTK, is selectively down-regulated in T lymphocytes and plasma cells. *The Journal of Immunology*. 152(2): 557-65.

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