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Product Information

Anti-BTK, N-Terminal

Developed in Rabbit, Affinity Isolated Antibody

Catalog Number: **B0686**

Anti-BTK, N-terminal is developed in rabbit using a synthetic peptide corresponding to amino acids 11-26 of human BTK, conjugated to KLH via a C-terminal added cystein residue, as immunogen. This sequence is conserved in mouse, rat and chicken. The peptide differs from human Tec tyrosine kinase by two amino acids. The antibody is affinity purified on the immunizing peptide immobilized on agarose.

Anti BTK, N-terminal specifically recognizes human BTK (75 kDa). Applications include immunoblotting. Staining of the BTK band in immunoblotting is specifically inhibited by the immunizing peptide.

Signaling through the surface antigen receptor in B cells leads to the activation of a variety of non-receptor protein tyrosine kinases. One of the key enzymes is Bruton's tyrosine kinase (BTK).¹ BTK (also known as Agammaglobulinemia tyrosine kinase [ATK]; B-cell progenitor kinase [BPK]; Agammaglobulinemia, X-linked, included [XLA, included]), is a member of the Tec family of cytoplasmic protein tyrosine kinases (PTK) and plays an essential role in B lymphocyte development and function. Together with Syk and Lyn, BTK acts as an important transducer of signals originating from the pre-B cell receptor.^{2,3} BTK contains five distinct domains: an Nterminal pleckstrin homology (PH) domain, a Tec homology (TH) domain, Src homology SH3 and SH2 domains, and a catalytic domain. Upon BCR (B-cell receptor) stimulation, BTK activation is initiated by targeting the kinase to the plasma membrane through interactions of its PH domain with phosphatidylinositol-3,4,5-triphosphate, a second messenger generated by phosphoinositide 3-kinase.^{4,5}

Defects in BTK are the cause of X-linked agammaglobulinemia type 1 (XLA). XLA is a humoral immunodeficiency disease which results in developmental defects in the B cell pathway. Affected boys have normal levels of pre-B cells in their bone marrow but virtually no circulating mature B lymphocytes.⁶

Reagent

The product is provided as a solution in 0.01M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: approx. 1.0 mg/ml.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A working concentration of 1.0-2.0 µg/ml is determined by immunoblotting, using lysates of Ramos (Human Burkitt lymphoma) cell line.

Recommendation: For immunoblotting, dilute the antibody in PBS containing 3.0 % non-fat dry milk and 0.05% Tween[®] 20.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentrations by titration test.

References

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4. Salim, K., et al., *EMBO J.*, 15, 6241-6250 (1996).
5. Saito, K.A., et. al, *J. Biol. Chem.*, 276, 16201-6206 (2001).
6. Middendorp, S., and Hendriks, R.W., *J. Immunol.*, 172, 1371-1379 (2004).

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