



Product Information

Bmx, Active

Human, recombinant, expressed in *E. coli*

Product Number **B 0311**

Storage Temperature: -70 °C

Synonym: Bone Marrow Kinase X-Linked

Product Description

The BMX gene encodes a novel non-receptor tyrosine kinase, which may play a role in the growth and differentiation of hematopoietic cells. Bmx cDNA comprises 675 amino acids, containing one SH3, one SH2 and one tyrosine kinase domain, which are about 70% identical with Btk, Itk and Tec and somewhat less with Txk tyrosine kinase sequences. The amino terminal sequences of these four tyrosine kinases are about 40% identical and each contains a so-called pleckstrin homology (PH) domain. The Bmx gene is located on chromosomal band Xp22.2 between the DXS197 and DXS207 loci. Chromosome X also contains the closest relative of BMX, the BTK gene that has been implicated in X-linked agammaglobulinemia.¹

Bmx induces the activation of the Stat-signaling pathway. In this regard, Bmx induced tyrosine phosphorylation of and DNA binding activity of all the Stat factors examined, including Stat1, Stat3, and Stat5. These effects were observed in mammalian and insect cells.² Bmx is expressed predominantly in myeloid hematopoietic cell lineages and also highly expressed in human heart. Bmx shows a unique specificity of expression among tyrosine kinase genes and may be involved in signal transduction in endocardial and arterial endothelial cells.³

The product is active recombinant, full-length human Bmx containing an N-terminal GST tag. It is supplied at a concentration of approximately 100 µg/mL in 50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 0.25 mM DTT, 0.1 mM EGTA and 30% glycerol.

Purity: ≥ 75% (SDS-PAGE)

Molecular weight: ~110 kDa

Specific Activity: ≥ 10 units/mg protein (Bradford). Please refer to the Certificate of Analysis for the lot-specific activity.

Unit Definition: One unit will incorporate one nanomole of phosphate into the Poly Glu-Tyr substrate per minute at 30 °C at pH 7.2 using a final concentration of 50 µM [³²P] ATP.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation instructions

For maximum product recovery, after thawing, centrifuge the vial before removing the cap

Storage/Stability

Stable for at least 12 months when stored as undiluted stock at -70 °C. After initial thawing, store in smaller, working aliquots at -70 °C. Use the working aliquots immediately upon thawing. Avoid repeated freeze-thaw cycles to prevent denaturing of the protein. Do not store in a frost-free freezer.

References:

1. Tamagnone L. et al., BMX, a novel nonreceptor tyrosine kinase gene of the BTK/ITK/TEC/TXK family located in chromosome Xp22.2., *Oncogene*, **9**, 3683-3688 (1994).
2. Saharinen P., et al., The Bmx tyrosine kinase induces activation of the Stat signaling pathway, which is specifically inhibited by protein kinase Cδ, *Blood*, **90**, 4341-4353 (1997).

3. Ekman, N., et al., Bmx tyrosine kinase is specifically expressed in the endocardium and the endothelium of large arteries., *Circulation*, **96**, 1729-1732 (1997).

4. Kaukonen J. et al., BMX tyrosine kinase gene is expressed in granulocytes and myeloid leukaemias., *Br. J. Haematol.*, **94**, 455-460 (1996).

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