Pim1, Active
Human, recombinant, expressed in *E. coli*

Product Number P 7873
Storage Temperature: -70 °C

**Product Description**
The proto-oncogene Pim1 belongs to a family of serine/threonine protein kinases that are highly conserved through evolution. Originaly identified from Moloney murine leukemia virus induced T-cell lymphomas in mice, Pim1 is involved in the control of cytokine-mediated cell proliferation, differentiation and survival of lymphoid and myeloid cells. Pim gene is highly expressed in the liver and spleen during fetal hematopoiesis and only slightly expressed in circulating granulocytes in adults. Pim1 was overexpressed in hematopoietic malignancies, particularly in myeloid and lymphoid acute leukemias. The results implied a physiologic role of the Pim1 oncogene during hematopoietic development and a deregulation of the gene in various leukemias. Expression of Pim1 can be stimulated by a variety of growth factors and is regulated at four different levels: transcriptional, post-transcriptional, translational and post-translational. The expression of Pim1 is mediated through activation of the JAK/STAT pathway.

Some of the substrates of Pim1 include p21 Cip1, nuclear mitotic apparatus protein, PTP-U2S and Socs-1. Pim1 enhances the activities of p100, c-Myb and Cdc 25a and, in part, this might explain reported effects of Pim1 on mitogenesis. Pim1 interacts with c-Myb via the DNA binding domain and regulates its transcriptional activity. Dhanasekaran, et al., examined gene expression profiles of more than 50 normal and neoplastic prostate specimens, and three common prostate cancer cell lines. The expression of hepsin and Pim1 was correlated with measures of clinical outcome using tissue microarrays consisting of ~700 prostate cancer specimens.

The product is active recombinant, full-length human Pim1 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:** ≥ 85% (SDS-PAGE)

**Molecular weight:** ~55 kDa

**Specific Activity:** ≥ 50 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 S6K substrate (CKRRRLASLR) 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**