

## PBK/TOPK Protein, Human, Recombinant (His)

### General Information

Synonyms:	HEL164;Nori-3;CT84;TOPK;PDZ binding kinase;SPK
Protein Construction:	A DNA sequence encoding the full length of human PBK (NP_060962.2) (Met 1-Val 322) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q96KB5-1
Molecular Weight:	37 kDa (predicted); 37 kDa (reducing conditions)

### QC Testing

Biological Activity:	No Kinase Activity
Purity:	> 80 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### 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 recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

*Actual storage temperature shall be subject to the COA.*

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

PDZ binding kinase (PBK), also known as TOPK (T-LAK cell-originated protein kinase), is a serine/threonine kinase related to the dual specific mitogen-activated protein kinase kinase (MAPKK) family, and has all the characteristic protein kinase subdomains and a C-terminal PDZ-binding T/SXV motif. PBK is expressed in the testis restrictedly expressed in outer cell layer of seminiferous tubules, as well as placenta. PBK may be enrolled in the activation of lymphoid cells and support testicular functions, with a suggested role in the process of spermatogenesis. This

mitotic kinase phosphorylates MAP kinase p38 and seems to be active in mitosis. When phosphorylated, PBK forms a protein-protein interaction with tumor suppressor p53 (TP53), leading to TP53 destabilization and attenuation of G2/M checkpoint during doxorubicin-induced DNA damage. The expression level of PBK is thus upregulated in a variety of neoplasms including hematological malignancies.

### Reference

Zakut-Houri R.,et al.,(1985), Human p53 cellular tumor antigen: cDNA sequence and expression in COS cells. EMBO J. 4:1251-1255.

Lamb P.,et al., (1986), Characterization of the human p53 gene.Mol. Cell. Biol. 6:1379-1385.

HARlow E.,et al.,(1985), Molecular cloning and in vitro expression of a cDNA clone for human cellular tumor antigen p53.Mol. Cell. Biol. 5:1601-1610.

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