

## SPINK4 Protein, Human, Recombinant (His)

### General Information

Synonyms:	MGC133107;PEC-60;HEL136;PEC60;serine peptidase inhibitor, Kazal type 4;SPINK4
Protein Construction:	A DNA sequence encoding the human SPINK4 (NP_055286.1) (Met 1-Cys 86) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Gly 27
Species:	Human
Expression Host:	HEK293 Cells
Accession:	O60575
Molecular Weight:	8 kDa (predicted); 10 kDa (reducing conditions)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 97 % 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

Serine protease inhibitor Kazal-type 4, also known as Peptide PEC-6 homolog and SPINK4, is a secreted protein that contains one Kazal-like domain. SPINK4 is a member of the SPINK protein family. The gene family of serine protease inhibitors of the Kazal type (SPINK) are functional and positional candidate genes for celiac disease (CD). SPINK1 plays an important role in protecting the pancreas against excessive trypsinogen activation. It is a potent natural inhibitor of pancreatic trypsin activity. SPINK1 mutations are associated with the development of acute and

chronic pancreatitis and have been detected in all forms of chronic pancreatitis. SPINK2 functions as a trypsin/acrosin inhibitor and is synthesized mainly in the testis and seminal vesicle where its activity is engaged in infertility. The SPINK2 protein contains a typical Kazal domain composed by six cysteine residues forming three disulfide bridges. SPINK9 was identified in human skin. Its expression was strong in palmar epidermis, but not detectable or very low in non palmoplantar skin.

### Reference

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Brattsand, M. et al., 2009, *J Invest Dermatol.* 129 (7): 1656-65.

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Noah, TK. et al., 2010, *Exp Cell Res.* 316 (3): 452-65.

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