

p19 INK4d Protein, Human, Recombinant (GST)

General Information

Synonyms:	p19-INK4D;INK4D;cyclin-dependent kinase inhibitor 2D (p19, inhibits CDK4);p19
Protein Construction:	A DNA sequence encoding the human CDKN2D (P55273) (Met 10Leu 166) was fused with the GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P55273
Molecular Weight:	44.9 kDa (predicted); 46 kDa (reducing conditions)

QC Testing

Biological Activity:	Immobilized human GST-CDKN2D at 10 µg/ml (100 µl/well) can bind biotinylated human GST-CDK4 , The EC50 of biotinylated human GST-CDK4 is 0.52-1.2 µg/ml.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.5. 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

Cyclin-dependent kinase inhibitor 2D(also known as CDKN2D or p19ink4d), a member of the INK4 family of cyclin-dependent kinase (CDK) inhibitors, negatively regulates the cyclin D-CDK4/6 complexes, which promote G1/S transition by phosphorylating the retinoblastoma tumor-suppressor gene product. It is clearly shown that DNA repair is the main target of p19ink4d effect and that diminished apoptosis is a downstream event. Experiments has uncovered a role of p19INK4d as a regulator of DNA-damage-induced apoptosis and suggest that it protects cells

from undergoing apoptosis by allowing a more efficient DNA repair. It has been demonstrated that p19INK4d expression enhances cell survival under genotoxic conditions. Previous work has shown that inactivation of the cyclin-dependent kinase inhibitor (CKI) p19(Ink4d) leads to progressive hearing loss attributable to inappropriate DNA replication and subsequent apoptosis of hair cells. It may also be involved in male reproductive function including testicular atrophy, alteration in serum follicle stimulating hormone, qualitative increase in germ cell apoptosis, and delayed kinetics of meiotic prophase markers.

Reference

Buchhold GM, et al. (2007) Mice lacking cyclin-dependent kinase inhibitor p19Ink4d show strain-specific effects on male reproduction. *Mol Reprod Dev.* 74 (8): 1008-20.

Laine H, et al. (2007) p19(Ink4d) and p21(Cip1) collaborate to maintain the postmitotic state of auditory hair cells, their codeletion leading to DNA damage and p53-mediated apoptosis. *J Neurosci.* 27 (6): 1434-44.

Ceruti JM, et al. (2005) Induction of p19INK4d in response to ultraviolet light improves DNA repair and confers resistance to apoptosis in neuroblastoma cells. *Oncogene.* 24 (25): 4065-80.

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