

PRKAR1A Protein, Human, Recombinant (His)

General Information

Synonyms:	PRKAR1;CAR;CNC1;PPNAD1;CNC;protein kinase, cAMP-dependent, regulatory, type I, alpha; TSE1;ACRDYS1;protein kinase, cAMP-dependent, regulatory, type I, α ;ADOHR;PKR1
Protein Construction:	A DNA sequence encoding the human PRKAR1A (P10644) (Met1-Val381) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P10644
Molecular Weight:	44.3 kDa (predicted); 47 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:	> 85 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing 20 mM Tris, 500 mM NaCl, 10% glycerol, 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

PRKAR1A, also known as PRKAR1 and PKR1, is one of the regulatory subunits of cAMP-dependent protein kinase A (PKA). PKA can be activated by cAMP. cAMP is a signaling molecule important for a variety of cellular functions. cAMP exerts its effects by activating PKA, which transduces the signal through phosphorylation of different target proteins. The inactive holoenzyme of PKA is a tetramer composed of two regulatory and two catalytic subunits.

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cAMP causes the dissociation of the inactive holoenzyme into a dimer of regulatory subunits bound to four cAMP and two free monomeric catalytic subunits. Four different regulatory subunits and three catalytic subunits of PKA have been identified in humans. PRKAR1A was found to be a tissue-specific extinguisher that down-regulates the expression of seven liver genes in hepatoma x fibroblast hybrids. Three alternatively spliced transcript variants encoding the same protein have been observed.

Reference

Huang L J. et al., 1997, Proc Natl Acad Sci. 94 (21): 11184-9.

Herberg F W. et al., 2000, J Mol Biol. 298 (2): 329-39.

Scambler P. et al., 1987, Am J Hum Genet. 41 (5): 925-32.

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