GCKR Protein, Human (P.pastoris, His)

Cat. No.:	HY-P71822
Synonyms:	FGQTL5; GCK ; GLRE; Glucokinase regulatory protein; Hexokinase 4 regulator; Hexokinase-D; HK IV; HK4
Species:	Human
Source:	P. pastoris
Accession:	Q14397 (1M-625Q)
Gene ID:	2646
Molecular Weight:	Approximately 70.7 kDa

PROPERTIES

AA Sequence	MPGTKRFQHV IETPEPGKWE LSGYEAAVPI TEKSNPLTQD LDKADAENIV RLLGQCDAEI FQEEGQALST YQRLYSESIL TTMVQVAGKV QEVLKEPDGG LVVLSGGGTS GRMAFLMSVS FNQLMKGLGQ KPLYTYLIAG GDRSVVASRE GTEDSALHGI EELKKVAAGK KRVIVIGISV GLSAPFVAGQ MDCCMNNTAV FLPVLVGFNP VSMARNDPIE DWSSTFRQVA ERMQKMQEKQ KAFVLNPAIG PEGLSGSSRM KGGSATKILL ETLLLAAHKT VDQGIAASQR CLLEILRTFE RAHQVTYSQS PKIATLMKSV STSLEKKGHV YLVGWQTLGI IAIMDGVECI HTFGADFRDV RGFLIGDHSD MFNQKAELTN QGPQFTFSQE DFLTSILPSL TEIDTVVFIF TLDDNLTEVQ TIVEQVKEKT NHIQALAHST VGQTLPIPLK KLFPSIISIT WPLLFFEYEG NFIQKFQREL STKWVLNTVS TGAHVLLGKI LQNHMLDLRI SNSKLFWRAL AMLQRFSGQS KARCIESLLR AIHFPQPLSD DIRAAPISCH VQVAHEKEQV IPIALLSLLF RCSITEAQAH LAAAPSVCEA VRSALAGPGQ KRTADPLEIL EPDVQ
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against solution in Tris-based buffer, 50% glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The GCKR protein plays a crucial role in the regulation of glucokinase (GCK) by forming an inactive complex with this enzyme. It acts by facilitating the recruitment of GCK to the nucleus, potentially creating a reservoir of GCK that can be rapidly released into the cytoplasm post-meal. The interaction between GCKR and GCK is finely tuned by fructose metabolites, where GCKR bound to fructose 6-phosphate exhibits increased affinity for GCK. In contrast, GCKR bound to fructose 1-phosphate displays significantly reduced affinity for GCK, leading to the loss of inhibitory effects on GCK activity. This dynamic interplay underscores the sophisticated regulatory mechanism through which GCKR modulates GCK function. Additionally, GCKR interacts with GCK specifically in its fructose 6-phosphate-bound form, highlighting the specificity of the molecular interactions involved in GCK regulation.

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