

CK1-alpha1

casein kinase 1 alpha 1

Recombinant Human Active Protein Kinase

HGNC Symbol: CSNK1A1

Synonyms: CK1, CK1a, CK1alpha, CKIa, CKIalpha

Product No.: 0406-0000-1

Lot: 001

Description: Human CK1-alpha1, full length, amino acids M₁-F₃₆₅ (as in [NCBI/Protein](#) entry AAY84562.1), N-terminal GST-HIS₆ fusion protein with a Thrombin cleavage site, expressed in Sf9 insect cells

Product identity: CK1-alpha1 Lot 001, was confirmed as CK1-alpha1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{Fusion Protein}: 71,434 Da

Expression host: Sf9 insect cells

Purification: GST-Affinity Chromatography

Activation: This kinase was not activated by special procedures

Storage buffer: 50 mM TRIS-HCl pH 8.0, 100 mM NaCl, 5 mM DTT, 4 mM reduced glutathione, 20 % glycerol

Storage temperature: -80°C

For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10µl are not advisable. Avoid repeated freeze-thaw cycles!

Protein concentration: 0.058 µg/µl

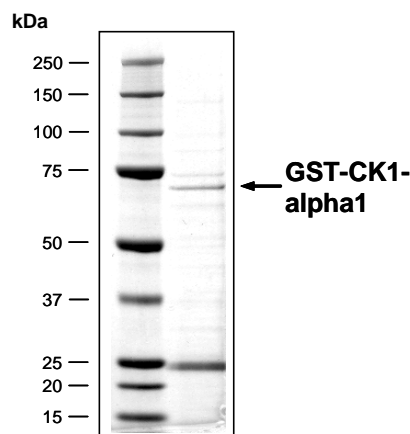
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

Biochemical Parameters:

Specific kinase activity (P_i transfer): 2.5 pmol/µg × min

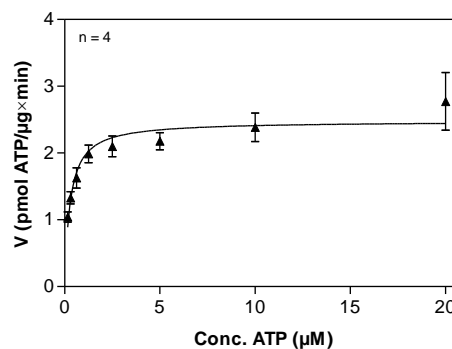
ATP-K_M: 0.3 µM

**CK1-alpha1 Lot 001:
Coomassie stain**



2.0 µg GST-CK1-alpha1

**CK1-alpha1 Lot 001:
Determination of V_{max} and K_M value for ATP**



Determination of K_M value & Specific activity:

- Assay conditions:
 - 60 mM HEPES-NaOH, pH 7.5
 - 3 mM MgCl₂
 - 3 mM MnCl₂
 - 3 µM Na-orthovanadate
 - 1.2 mM DTT
 - 50 µg / ml PEG_{20,000}
 - ATP (variable)
 - Substrate: Casein 50 µg/ml
 - CK1-alpha1: 1 µg/ml
- Filter binding assay
- MSFC membrane (Millipore)

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CK1-alpha1

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GST-CK1-alpha1 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLP EML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAI PQID	KYLKSSKYIA	WPLQG WQATF	GGGDHPPKSD	PMGHHHHHGG	RRRASVAAGI	240
241	LVPRGSPGLD	GIYARGMASS	SGSKAEFIVG	GKYKLVKIG	SGSFGDIYLA	INITNGEEVA	300
301	VKLESQKARH	PQLLYESKLY	KILQGGVGIP	HIRWYQEKD	YNVLVMDLLG	PSLEDLFNFC	360
361	SRRFTMKTVL	MLADQMISRI	EYVHTKNFIH	RDIDPNFLM	GIGRHCNKCL	ESPVGKRKRS	420
421	MTVSTSQDPS	FSGNLQFLI	DFGLAKKYRD	NRTRQHIPPYR	EDKNLTGTAR	YASINAHLGI	480
481	EQSRRDDMES	LGVVLMYFNR	TSLPWQGLKA	ATKKQKYEKI	SEKKMSTPVE	VLCEGFPAEF	540
541	AMYLNYCRGL	RFEEAPDYMY	LRQLFRILFR	TLNHQYDYTF	DWTMLKQKAA	QQAASSSGQG	600
601	QQAQTPTGKQ	TDKTKSNMKG	F				660

1-218: GST **Red**: HIS6-tag **Pink**: Thrombin cleavage site **blue**: CK1-alpha1

CK1-alpha1 wt ¹ Amino Acid Sequence							
1	MASSSGSKAE	FIVGGKYKLV	RKIGSGSFGD	IYLAINITNG	EEVAVKLESQ	KARHPQLLYE	60
61	SKLYKILQGG	VGIPHIRWYG	QEKDYNVLM	DLGSPSLEDL	FNFCRRRFTM	KTVLMLADQM	120
121	ISRIEYVHTK	NFIHRDIKPD	NFLMGIGRHC	NKCLESPVGK	RKRSMTVSTS	QDPSFSGLNQ	180
181	LFLIDFGLAK	KYRDNRTRQH	IPYREDKNLT	GTARYASINA	HLGIEQSRRD	DMESLGYVLM	240
241	YFNRTSLPWQ	GLKAATKKQK	YEKISEKKMS	TPVEVLCEGF	PAEFAMILYNY	CRGLRFEEAP	300
301	DYMYLRQLFR	ILFRTLNHQY	DYTFDWTMLK	QKAAQQAASS	SGGQQAQTP	TGKQTDKTKS	360
361	NMKG F						420

blue: CK1-alpha1 sequence expressed in recombinant protein

¹[NCBI/Protein](#) accession number AAY84562.1

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