

ProQinase™ SAK

polo like kinase 4

Recombinant Human Active Protein Kinase

HGNC Symbol: PLK4

Synonyms: STK18

Product No.: 0306-0000-1

Lot: 014

Description: Human SAK, full length, amino acids M₁-H₉₇₀ (as in [NCBI/Protein](#) entry NP_055079.3), N-terminal GST-HIS₆ fusion protein with a Thrombin cleavage site, expressed in Sf9 insect cells

Product identity: SAK Lot 014, was confirmed as SAK by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{Fusion Protein}: 138,568 Da

Expression host: Sf9 insect cells

Purification: GST-Affinity Chromatography

Activation: This kinase was not activated by special procedures

Storage buffer: 50 mM HEPES pH 7.5, 100 mM NaCl, 5 mM DTT, 15 mM reduced glutathione, 20 % glycerol

Storage temperature: -80°C

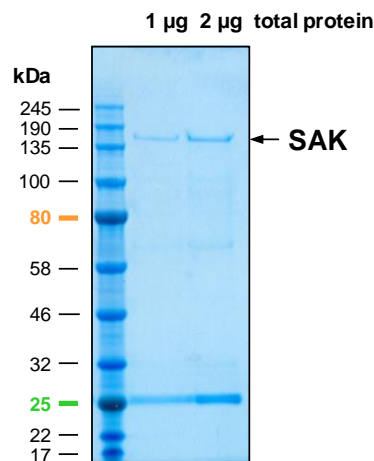
For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10µl are not advisable. Avoid repeated freeze-thaw cycles!

Protein concentration: 0.138 µg/µl
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

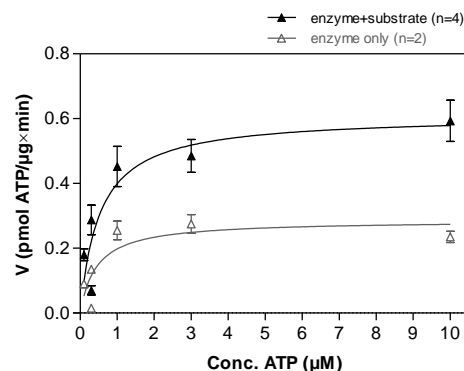
Biochemical Parameters:

Specific kinase activity (P_i transfer): 0.6 pmol/µg × min
ATP-K_M: 0.53 µM

SAK Lot 014: Coomassie stain



SAK Lot 014: Determination of V_{max} and K_M value for ATP



- 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: CDC25C-derived peptide 10 µg/ml
Kinase: 4 µg/ml
- Filter binding assay
MSIP membrane (Millipore)

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GST-SAK Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRLL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQ SMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLP EML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAI PQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHG	RRRASVAAGI	240
241	LVPRGSPGLD	GIYARGATMA	TCIGEKIEDF	KVGNLLGKGS	FAGVYRAESI	HTGLEVAIKM	300
301	IDKKAMYKAG	MVQRVQNEVK	IHCQLKHPSI	LELYNYFEDS	NYVYLVEMC	HNGEMNRYLK	360
361	NRVKPFSENE	ARHFMHQIIT	GMLYLHSHGI	LHRDLTSLNL	LLTRNMNIKI	ADFGLATQLK	420
421	MPHEKHYTLC	GTPNYISPEI	ATRSAHGLES	DVWSLGCMFY	TLLIGRPPFD	TDTVKNLTK	480
481	VVLADYEMPS	FLSIEAKDLI	HQLLRRNPAD	RLSLSSVLDH	PFMSRNSSTK	SKDLGTVEDS	540
541	IDSGHATIST	AITASSSTSI	SGSLFDKRRL	LIGQPLPNKM	TVFPPKNKST	DFSSSGDGNS	600
601	FYTQWGNQET	SNSGRGRVIQ	DAEERPHSRY	LRRAYSSDRS	GTSNSQSQAK	TYTMERCHSA	660
661	EMLSVSKRSG	GGENEERYSP	TDNNANIFNF	FKEKTSSSSG	SFERPDNQA	LSNHLCPGKT	720
721	PFPFADPTPQ	TETVQWQWFGN	LQINAHLRKT	TEYDSISP NR	DFQGH PDLQK	DTSKNAWTD T	780
781	KVKKNSDASD	NAHSVQQONT	MKYMTALH SK	PEIIQQECVF	GSDPLSEQSK	TRGM EPPWGY	840
841	QNRTLRSITS	PLVAHRLKPI	RQKTKKAVVS	ILDSEVCVE	LVKEYASQ EY	VKEVLQISSD	900
901	GNTITIYYPN	GGRGFPLADR	PPSPTDNISR	YSEFDNLPEKY	WRKYQYASRF	VQLVRSKSPK	960
961	ITYFTRYAKC	ILMENSPGAD	FEVWFYDGVK	IHKTEDFIQV	IEKTGKSYTL	KSESEVNSLK	1020
1021	EEIKMYMDHA	NEGHRICLAL	ESIISEEERK	TRSAPFFPII	IGRKP GSTSS	PKALSPPPSV	1080
1081	DSNYPTRERA	SFNRVMVMSA	ASPTQAPI LN	PSMVTNEGLG	LTTTASGTDI	SSNSLKDCLP	1140
1141	KSAQLLKS VF	VKNVGWATQL	TSGAVVWQFN	DGSQLVVQAG	VSSISYTS PN	GQTRYGENE	1200
1201	KLPDIYKQKL	QCLSSILLMF	SNPTPNFH				1260

1-218: GST Red: HIS6-tag Pink: Thrombin cleavage site blue: SAK boxed: variation from RefSeq

SAK wt ¹ Amino Acid Sequence							
1	MATCIGEKIE	DFKVG NLLGK	GSFAGVYRAE	SIHTGLEVAI	KMIDKKAMYK	AGMVQRVQNE	60
61	VKIHCQLKHP	SILELYNYFE	DSNYVYL VLE	MCHNGEMNRY	LKNRVKPFSE	NEARHFMHQI	120
121	ITGMLYLHSH	GILHRDLTLS	NLLLTRNMNI	KIADFGLATQ	LKMPHEKHYT	LCGTPNYISP	180
181	EIATRSAHGL	ESDVWSLGCM	FYTLLIGRPP	FDTDTVKN TL	NKVVLADYEM	PSFLSIEAKD	240
241	LIHQLLRRNP	ADRLSLSSVL	DHPFMSRNS	TKSKDLGTVE	DSIDSGHATI	STAITASSST	300
301	SISGSLFDRK	RL LIGQPLPN	KMTVFPKNKS	STDFSSSGDG	NSFYTQWGNQ	ETSNSGRGRV	360
361	IQDAEERPHS	RYLRRAYSSD	RS GTSNSQSQ	AKTYTMERCH	SAEMLSVSKR	SGGGENEERY	420
421	SPTDNNANIF	NFFKEKTSSS	SGSFERPDNN	QALS NHLCPG	KTPFPFADPT	PQTETVQQWF	480
481	GNLQINAHLR	KTTEYDSISP	NRDFQGH PDL	QKDTSKNAWT	DTKVKN SDA	SDNAHSVQQQ	540
541	NTMKYMTALH	SKPEIIQQEC	VFGSDPLSEQ	SKTRGM EPPW	GYQNRTLRSI	TSPLVAHRLK	600
601	PIRQKTKKAV	VSILDSEVC	VELVKEYASQ	EYVKEVLQIS	SDGNTITIYY	PNGGRGFPLA	660
661	DRPPSPTDNI	SRYSEFDNLPE	KYWRKYQYAS	RFVQLVRSKS	PKITYFTRYA	KCILMENSPG	720
721	ADFEVWFYDG	VKIHKTEDFI	QVIEKTGKSY	TLKSESEVNS	LKEEIKMYMD	HANEGHRICL	780
781	ALESIISEEE	RKTRSAPFFP	IIIGRKP GST	SSPKALSPPP	SVDSNYPTRE	RASFNRVMVH	840
841	SAASPTQAPI	LNPSMVTNEG	LGLTTTASGT	DISSNSL KDC	LPKSAQLLKS	VFVKNVGWAT	900
901	QLTSGAVVWQ	FNDGSQLVVQ	AGVSSISYTS	PNGQTRYGE	NEKLPDIYKQ	KLQCLSSILL	960
961	MFSNPTPNFH						1020

blue: SAK sequence expressed in recombinant protein Red: variant in recombinant protein

¹NCBI/Protein accession number NP_055079.3