

JAK2

Janus kinase 2

Recombinant Human Active Protein Kinase

HGNC Symbol: JAK2

Synonyms: JAK-2, JTK10

Product No.: 0646-0000-1

Lot: 007

Description: Human JAK2, C-terminal fragment, amino acids P₇₁₇-G₁₁₃₂ (as in [NCBI/Protein](#) entry NP_004963.1), N-terminal GST-HIS₆ fusion protein with a Thrombin cleavage site, expressed in Sf9 insect cells

Product identity: JAK2, Lot 007, was confirmed as JAK2 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{Fusion Protein}: 78,512 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, 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: 0.091 µg/µl
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

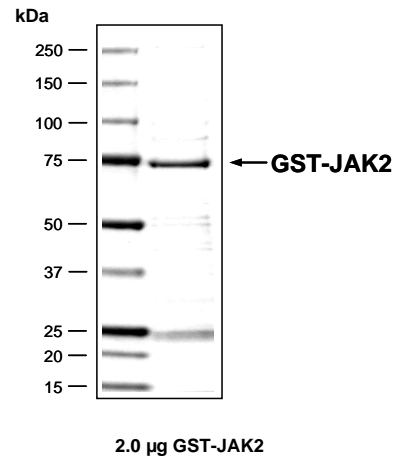
Biochemical Parameters:

Specific kinase activity (P_i transfer): 24 pmol/µg × min
ATP-K_M: 2.1 µM

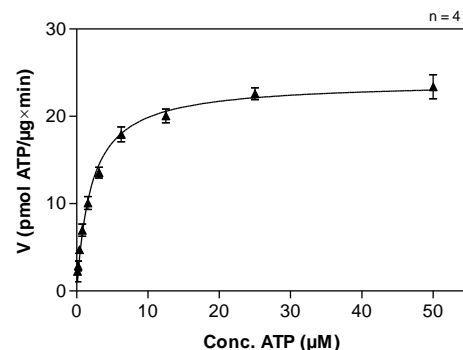
Additional assay technology:

JAK2 Lot 007 was also successfully tested by ProQinase for the use with the ADP-Glo™ Kinase assay from Promega
ADP-Glo assay conditions may vary from radiometric assay conditions, please inquire for assay details

JAK2 Lot 007: Coomassie stain



JAK2 Lot 007: 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: TRK-C-derived Peptide, 50 µg/ml
 - JAK2: 4 µg/ml
- Filter binding assay
- MSPH membrane (Millipore)

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GST-JAK2 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPPEML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIPOID	KYLKSSKYIA	WPLQGWAQTF	GGGDHPPKSD	PMGHHHHHG	RRRASVAAGI	240
241	LVPRGSPGLD	GICSIEEFRP	PWVPECIEN	PKNLNLATDK	WSFGTTLWEI	CSGGDKPLSA	300
301	LDSQRKLQFY	EDRHQLPAPK	WAEANLINN	CMDYEPDFRP	SFRAIIRDLN	SLFTPDYELL	360
361	TENDMLPNMR	IGALGFSGAF	EDRDPTQFEE	RHLKFLQQLG	KGNFGSVMC	RYDPLQDNTG	420
421	EVVAVKQLQH	STEEHLRDFE	REIEILKSLQ	HDNIVKYKGV	CYSAGRRNLK	LIMEYLPYGS	480
481	LRDYLQKHKE	RIDHIKLLQY	TSQICKGMEY	LGTKRYIHRD	LATRNILVEN	ENRVKIGDFG	540
541	LTKVLPQDKE	YKVKPEGES	PIFWYAPESL	TESKFSVSD	VWSFGVLYE	LFTYIEKSKS	600
600	PPAEFMRMIG	NDKQGQMVIV	HLIELLNNG	RLPRPDGCPD	EIYMIMTECW	NNNVNQRPSF	660
661	RDLALRVQDI	RDNMAG					720

1-218: GST **Red:** HIS6-tag **Pink:** Thrombin cleavage site **blue:** JAK2 fragment

JAK2 wt ¹ Amino Acid Sequence							
1	MGMACLTMTTE	MEGTSTSSII	QNGDISGNAN	SMKQIDPVLQ	VYLYHSLGKS	EADYLTFFPSG	60
61	EYVAEEICIA	ASKACGITPV	YHNMFALMSE	TERIWYPPNH	VFHIDESTRH	NVLYRIRFYF	120
121	PRWYCSGSNR	AYRHGISRGA	EAPLLDDFVM	SYLFAQWRHD	FVHGWIQVPV	THETQEECLG	180
181	MAVLDMRIA	KENDQTPAI	YNSISYKTFI	PKCIRAKIQD	YHILTRKRI	YRFRRIQQF	240
241	SQCKATARNL	KLKYLINLET	LQSAFYTEKF	EVKEPGSGPS	GEEIFATIII	TGNGGIQWSR	300
301	GKHKESETLT	EQDLQLYCDF	PNIIDVSIKQ	ANQEGSNESR	VVTIHKQDQK	NLEIELSSLR	360
361	EALSFVSLID	GYRRLTADAH	HYLCKEVAPP	AVLENIQSN	HGPISMDFAI	SKLKKAGNQT	420
421	GLYVLRCSPK	DFNKYFLTFA	VERENVIEYK	HCLITKNENE	EYNLSGTCKN	FSSLKDLLNC	480
481	YQMETVRSND	IIFQFTKCCP	PKPKDKSNLL	VFRTNGVSDV	PTSPTLQRPT	HMNQMVFHKI	540
541	RNEDLIFNES	LGQGTFTKIF	KGVRREVGDI	GQLHETEVL	KVLDKAHRNY	SESFEEAASM	600
601	MSKLSHKHLV	LNYGVCVCGD	ENILVQEFVK	FGSLDTYLK	NKNCINILWK	LEVAKQLAWA	660
661	MHFLEENTLI	HGNVCAKNIL	LIREEDRKTG	NPPFIKLSDP	GISITVLPKD	ILQERI PWVP	720
721	PECIENPKNL	NLATDKWSFG	TTLWEICSGG	DKPLSALDSQ	RKLQFYEDRH	QLPAPKWAEI	780
781	ANLINNCMDY	EPDFRPSFRA	IIRDLSLFT	PDYELLTEND	MLPNMRIGAL	GFSGAFEDRD	840
841	PTQFEERHLK	FLQQLGKGNF	GSVEMCRYDP	LQDNTGEVVA	VKKLQHSTEE	HLRDFEREIE	900
901	ILKSLQHDNI	VKYKGVCSYA	GRRNLKLIME	YLPYGLRDI	LQKHKERIDH	IKLLQYTSQI	960
961	CKGMEYLGTK	RYIHRDLATR	NILVENENRV	KIGDFGLTKV	LPQDKEYYKV	KEPGESPIFW	1020
1021	YAPESLTESK	FSVADVWSF	GVVLYELFTY	IEKSKSPPAE	FMRMIGNDKQ	GQMIVFHLEI	1080
1081	LLKNNRRLPR	PDGCPDEIYM	IMTECWNNNV	NQRPSFRDLA	LRVDQIRDNM	AG	1140

blue: JAK2 sequence expressed in recombinant protein

¹[NCBI/Protein](#) accession number NP_004963.1

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