

JAK1 aa583-1154 wt

Janus kinase 1

Recombinant Human Active Protein Kinase

HGNC Symbol: JAK1

Synonyms: JAK1A, JAK1B, JTK3

Product No.: 1480-0000-1

Lot: 002

Description: Human JAK1, C-terminal fragment, amino acids L₅₈₃-K₁₁₅₄ (as in [NCBI/Protein](#) entry NP_002218.2), N-terminal GST-HIS₆ fusion protein with a 3C cleavage site, expressed in Sf9 insect cells

Product identity: JAK1 aa583-1154 wt Lot 002, was confirmed as JAK1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{Fusion Protein}: 93,627 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: 0.400 µg/µl

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

Biochemical Parameters:

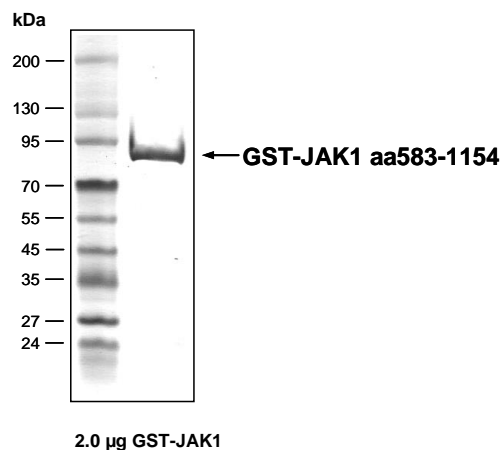
Specific kinase activity (P_i transfer): 2.6 pmol/µg × min

ATP-K_M: 22 µM

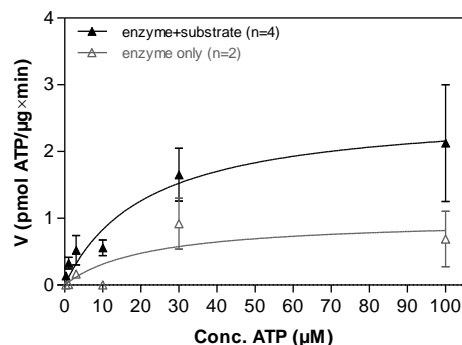
Additional assay technology:

JAK1 aa583-1154 wt Lot 002 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

JAK1 aa583-1154 wt Lot 002: Coomassie stain



JAK1 aa583-1154 wt Lot 002: 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: RBER-IRStide, 80 µg/ml
 - Kinase: 1 µg/ml
- Filter binding assay
MSFC membrane (Millipore)

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| GST-JAK1 aa583-1154 wt Recombinant Fusion Protein Amino Acid Sequence | | | | | | | |
|---|-------------|------------|------------|------------|------------|------------|-----|
| 1 | MSPILGYWKI | KGLVQPTRL | LEYLEEKYEE | HLYERDEGDK | WRNKKFELGL | EFPNLPYYID | 60 |
| 61 | GDVKLTQSMA | IIRYIADKHN | MLGGCPKERA | EISMLEGAVL | DIRYGVSRIA | YSKDFETLKV | 120 |
| 121 | DFLSKLPPEML | KMFKDRLCHK | TYLNGDHVTH | PDFMLYDALD | VVLYMDPMCL | DAFPKLVCFK | 180 |
| 181 | KRIEAIPOID | KYLKSSKYIA | WPLQGWOATF | GGGDHPPKSD | PMGHHHHHG | RDSLEVLFCG | 240 |
| 241 | PLVQGEHLGR | GTRTHIYSGT | LMDYKDDEGT | SEEKKIKVIL | KVLDPSHRDI | SLAFFEAASM | 300 |
| 301 | MRQVSHKHIV | YLYGVCVRDV | ENIMVEEFVE | GGPLDLFMHR | KSDVLTTPWK | FKVAKQLASA | 360 |
| 361 | LSYLEDKDLV | HGNVCTKNLL | LAREGIDSEC | GPFIKLSDPG | IPITVLSRQE | CIERIPWIA | 420 |
| 421 | ECVEDSKNLS | VAADKWSFGT | TLWEICYNGE | IPLKDKTLIE | KERFYESRCR | PVTPSCKELA | 480 |
| 481 | DLMTRCMNYD | PNQRPFRAI | MRDINKLEEQ | NPDIVSEKKP | ATEVDPTHFE | KRFLKRIRD | 540 |
| 541 | GEGHFGKVEL | CRYDPEGDNT | GEQVAVKSLK | PESGGNHIA | LKKEIEILRN | LYHENIVKYK | 600 |
| 601 | GICTEDGGNG | IKLIMEFLPS | GSLKEYLPKN | KNKINLKQQL | KYAVQICKGM | DYLGSRQYVH | 660 |
| 661 | RDLAARNVIV | ESEHQVKIGD | FGLTKAIETD | KEYYTVKDDR | DSPVFWYAPE | CLMQSKFYIA | 720 |
| 721 | SDVWSFGVTL | HELLTYCDS | SSPMALFLKM | IGPTHGQMTV | TRLVNTLKEG | KRLPCPPNCP | 780 |
| 781 | DEVYQLMRKC | WEFQPSNRTS | FQNLIEGFEA | LLK | | | 840 |

1-218: GST Red: HIS6-tag Green: 3C cleavage site blue: JAK1 fragment

| JAK1 wt ¹ Amino Acid Sequence | | | | | | | |
|--|------------|------------|------------|-------------|------------|------------|------|
| 1 | MQYLNKEDC | NAMAFCAKMR | SSKKTEVNLE | APEPGVEVIF | YLSDREPLRL | GSGEYTAEEL | 60 |
| 61 | CIRAAQACRI | SPLCHNLFAL | YDENTKLWYA | PNRTITVDDK | MSLRRLHYMR | FYFTNWHGTN | 120 |
| 121 | DNEQSVWRHS | PKKQKNGYEK | KKIPDATPLL | DASSLEYLFA | QGQYDLVKCL | APIRDPKTEQ | 180 |
| 181 | DGHDINEECL | GMAVLAISHY | AMMKMQLP | LPKDISYKRY | IPETLNKSIR | QRNLLTRMRI | 240 |
| 241 | NNVFKDFLKE | FNNKTICDSS | VSTHDLKVYK | LATLETTLTKH | YGAEIFETSM | LLISSENMEN | 300 |
| 301 | WFHSNDGGNV | LYYEVMTGN | LGIQWRHKPN | VVSVEKEKNK | LKRKKLENKH | KKDEEKNKIR | 360 |
| 361 | EEWNNFSYFP | EITHIVIKES | VVSINKQDNK | KMELKLSSHE | EALSFVSLVD | GYFRLTADAH | 420 |
| 421 | HYLCTDVAPP | LIVHNIQNGC | HGPICTEYAI | NKLRQEGSEE | GMVVLRSCT | DFDNILMTVT | 480 |
| 481 | CFEKSEQVQG | AQKQFKNFQI | EVQKGRYSLH | GSDRSFPSLG | DLMSHLKKQI | LRTDNISFML | 540 |
| 541 | KRCCQPKPRE | ISNLLVATKK | AQEWQPVYPM | SQLSFDRIK | KDLVQGEHLG | RGTRTHIYSG | 600 |
| 600 | TLMDYKDDEG | TSEEKKIKVI | LKVLDPSHRD | ISLAFFEAAS | MMRQVSHKHI | VYLYGVCVRD | 660 |
| 661 | VENIMVEEFV | EGGPLDLFMH | RKSDVLTTPW | KFKVAKQLAS | ALSYLEDKDL | VHGNVCTKNL | 720 |
| 721 | LLAREGIDSE | CGPFIKLSDP | GIPITVLSRQ | ECIERIPWIA | PECVEDSKNL | SVAADKWSFG | 780 |
| 781 | TTLWEICYNG | EIPLKDKTLI | EKERFYESRC | RPVTPSCKEL | ADLMTRCMNY | DPNQRPFRA | 840 |
| 841 | IMRDINKLEE | QNPDIVSEKK | PATEVDPTHF | EKRFLKRIRD | LGEHFGKVE | LCRYDPEGDN | 900 |
| 901 | TGEQVAVKSL | KPESGGNHIA | DLKKEIEILR | NLYHENIVKY | KGICTEDGGN | GIKLIMEFLP | 960 |
| 961 | SGSLKEYLPK | NKNKINLKQQ | LKYAVQICKG | MDYLGSRQYV | HRDLAARNVL | VESEHQVKIG | 1020 |
| 1021 | DFGLTKAIET | DKEYYTVKDD | RDSPVFWYAP | ECLMQSKFYI | ASDVWSFGVT | LHELLTYCDS | 1080 |
| 1081 | DSSPMALFLK | MIGPTHGQMT | VTRLVNTLKE | GKRLPCPPNC | PDEVYQLMRK | CWEFQPSNRT | 1140 |
| 1141 | SFQNLIEGFE | ALLK | | | | | 1200 |

blue: JAK1 sequence expressed in recombinant protein

¹[NCBI/Protein](https://www.ncbi.nlm.nih.gov/Protein) accession number NP_002218.2

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