

ERK1

mitogen-activated protein kinase 3

Recombinant Human Active Protein Kinase

HGNC Symbol: MAPK3

Synonyms: ERT2, p44MAPK, PRKM3, HUMKER1A

Product No.: 0883-0000-1

Lot: 002

Description: Human ERK1, full length, amino acids M₁-P₃₇₉ (as in [NCBI/Protein](#) entry NP_002737.2), N-terminal GST-HIS₆ fusion protein with a Thrombin cleavage site, activated, expressed in E.coli

Product identity: ERK1 Lot 002, was confirmed as ERK1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{Fusion Protein}: 69,402 Da

Expression host: E.coli

Purification: GST-Affinity Chromatography

Activation: With MEK1

Storage buffer: 50 mM HEPES pH 7.5, 100 mM NaCl, 5 mM DTT, 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: 0.445 µg/µl

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

Biochemical Parameters:

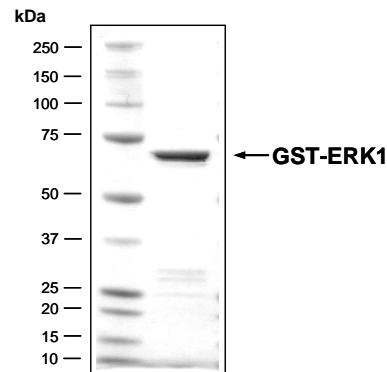
Specific kinase activity (P_i transfer): 95 pmol/µg × min

ATP-K_M: 3.4 µM

Additional assay technology:

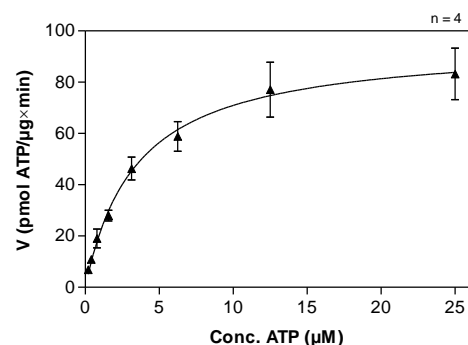
ERK1 Lot 002 was also successfully tested by ProQinase for the use with the ADP-Glo™ Kinase assay from Promega
ADP-Glo assay conditions may vary from radiometric assay conditions, please inquire for assay details

ERK1 Lot 002: Coomassie stain



2.0 µg GST-ERK1

ERK1 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-CHKtide 40 µg/ml
 - Kinase: 0.4 µg/ml
- Filter binding assay
- MSFC membrane (Millipore)

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GST-ERK1 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	KRIEAIPIQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	LVPRGSM	AAQGGGGGEP	240
241	RRTEGVGPGV	PGEVEMVKGO	PFDVGPRTYQ	LOYIGEGAYG	MVSSAYDHVR	KTRVAIKKIS	300
301	PFEHQTYCQR	TLREIQILLR	FRHENVIGIR	DILRASTLEA	MRDVIIVQDL	METDLYKLLK	360
361	SQQLSNDHIC	YFLYQILRGL	KYIHSANVLH	RDLKPSNLLS	NTTCDLKICD	FGLARIADPE	420
421	HDHTGFLTEY	VATRWRAPPE	IMLNSKGYTK	SIDIWSVCGI	LAEMLSNRPI	FPGKHYLDQL	480
481	NHILGILGSP	SQEDLNCIIN	MKARNYLQSL	PSKTKVAWAK	LFPKSDSKAL	DLLDRMLTFN	540
541	PNKRITVEEA	LAHPYLEQYY	DPTDEPVAEE	PFTFAMELDD	LPKERLKELI	FQETARFQPG	600
600	VLEAP						660

1-218: GST **Pink**: Thrombin cleavage site **blue**: ERK1

ERK1 wt ¹ Amino Acid Sequence							
1	MAAAAAQGGG	GGEPRRTEGV	GPGVPGEVEM	VKGQPFVGP	RYTQLQYIGE	GAYGMVSSAY	60
61	DHVRKTRVAI	KKISPFHQYT	YCQRTLREIQ	ILLRFRHENV	IGIRDILRAS	TLEAMRDVYI	120
121	VQDLMETDLY	KLLKSQQLSN	DHICYFLYQI	LRGLKYIHS	NVLHRDLKPS	NLLSNTTCDL	180
181	KICDFGLARI	ADPEHDHTGF	LTEYVATRWF	RAPEIMLNSK	GYTKSIDIWS	VGCILAEMLS	240
241	NRPIFPKGHY	LDQLNHILGI	LGSPSQEDLN	CIINMKARNY	LQSLPSKTKV	AWAKLFPKSD	300
301	SKALDLLDRM	LTFNPNKRIT	VEEALAHPYL	EQYDPTDEP	VAEEPFTFAM	ELDDLPKERL	360
361	KELIFQETAR	FQPGVLEAP					420

blue: ERK1 sequence expressed in recombinant protein

¹[NCBI/Protein](#) accession number NP_002737.2

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