

ProQinase™ PIK3CB E1051K/PIK3R1

phosphoinositide-3-kinase, catalytic, beta polypeptide/
phosphoinositide-3-kinase, regulatory subunit 1 (alpha)

Recombinant Human Active Lipid Kinase

HGNC Symbol: PIK3CB

Synonyms PIK3CB: P110BETA, PI3K, PI3KBETA, PI3K-beta, PIK3C1

Synonyms PIK3R1: GRB1, p85, p85-ALPHA, PtdIns-3-kinase regulatory subunit p85-alpha

Lipid Kinase Family: PI3K Class I

(according to: Phylogenomics of phosphoinositide lipid kinases: perspectives on the evolution of second messenger signaling and drug discovery: James R Brown & Kurt R Auger; BMC Evolutionary Biology 11, 4-14 (2011))

Product No.: 1532-1165-1

Lot: 003

Description: Human PIK3CB, full length, amino acids M₁-S₁₀₇₀ (as in NCBI/Protein entry NP_006210.1) with a E1051K mutation, N-terminal GST-HIS₆ fusion protein with a 3C cleavage site and PIK3R1 full length, amino acids M₁-R₇₂₄ (as in NCBI/Protein entry NP_852664.1), N-terminal fused to a MYC-tag, expressed in Sf9 insect cells

Product identity: PIK3CB E1051K/PIK3R1 Lot 003, was confirmed as PIK3CB/PIK3R1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{GST-PIK3CB E1051K}: 151,266 Da

Theoretical MW_{PIK3R1}: 85,371 Da

Expression: Baculovirus infected Sf9 cells

Purification: GST-Affinity Chromatography

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

Storage temperature: -80°C

Avoid repeated freeze-thaw cycles!

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: 0.098 µg/µl

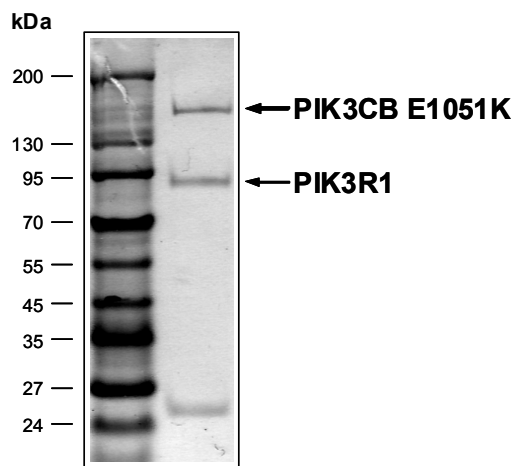
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

Biochemical Parameters:

Specific kinase activity (P_i transfer): 849 pmol/µg×min

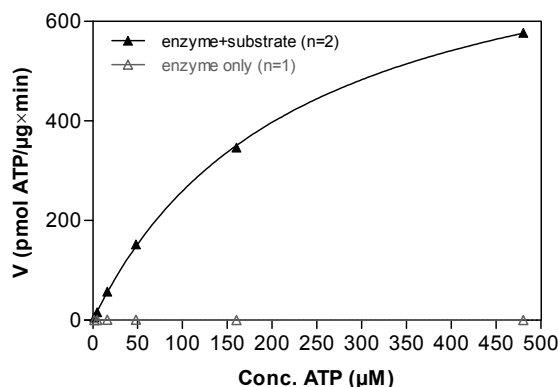
ATP-K_M: 228 µM

PIK3CB E1051K/PIK3R1 Lot 003: Coomassie stain



2 µg PIK3CB E1051K/PIK3R1

PIK3CB E1051K/PIK3R1 Lot 003: Determination of V_{max} and K_M value for ATP ADP-Glo™ Kinase Assay / Promega



Determination of K_M value & Specific activity:

• Assay conditions:

60 mM HEPES-NaOH, pH 7.5

3 mM MnCl₂

3 µM Na-orthovanadate

1.2 mM DTT

50 µg / ml PEG_{20,000}

ATP (variable)

Substrate: PIP2: 50 µM / PS: 950 µM

PIP2: 08:0 PI(4,5)P2 (1,2-Dioctanoyl-sn-Glycero-3-(Phosphoinositol-4,5-Bisphosphate))

PS: 1-Palmitoyl-2-Oleoyl-sn-Glycero-3-[Phospho-L-Serine]

PIK3CB E1051K/PIK3R1: 2.0 µg / ml

For further information on ADP-Glo™ kinase activity detection please visit [Promega.com](https://www.promega.com)

ProQinase™ PIK3CB E1051K/PIK3R1

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Recombinant Proteins

PIK3CB E1051K 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	KRIEAIQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHG	RDSL LEVL FQG	240
241	PLAMV MCFSF	IMPPAMADIL	DIWAVDSQIA	SDGSIPVDFL	LPTGIYIQLE	VPREATISYI	300
301	KQMLWKQVHN	YPMFNLLMDI	DSYMFACVNO	TAVYEELEDE	TRRLCDVRPF	LPVLKLVTRS	360
361	CDPGEKLDISK	IGVLIGKGLH	EFDSLKDPEV	NEFRRKMRKF	SEEKILSLVG	LSWMDWLKQT	420
421	YPPEHEPSIP	ENLEDKLYGG	KLIVAVHFEN	CQDVFSFQVS	PNMNPIKVNE	LAIQKRLTIH	480
481	GKEDEVSPYD	YVLQVSGRVE	YVFGDHPLIQ	FQYIRNCVMN	RALPHFILVE	CKKIKKMYEQ	540
541	EMIAIEAAIN	RNSSNLPLPL	PPKKTRIIISH	VWENNNPFQI	VLVKGNKLNT	EETVKVHVRA	600
601	GLFHGTELLC	KTIVSSEVSG	KNDHIWNEPL	EFDINICDLP	RMARLCFAVY	AVLDKVKTKK	660
661	STKTINPSKY	QTIRKAGKVH	YPVAWNTMV	FDKFKQLRTG	DIILHSWSSF	PDELEEMLNP	720
721	MGTVQTNPYT	ENATALHVKF	PENKKQPYYY	PPFDKIEKA	AEIASSDSAN	VSSRGGKKFL	780
781	PVLKEILDRD	PLSQLCENEM	DLIWTLRQDC	REIFPQSLPK	LLLSIKWNKL	EDVAQLQALL	840
841	QIWPKLPPRE	ALELLDFNYP	DQYVREYAVG	CLRQMSDEEL	SOYLLQLVQV	LKYEPFLDCA	900
901	LSRFLLERAL	GNRRIGQFLF	WHLRSEVHIP	AVSVQFGVIL	EAYCRGSGVGH	MKVLKQVEA	960
961	LNKLKTLSNL	IKLNAVKLNR	AKGKEAMHTC	LKQSAAYREAL	SDLQSPLNPC	VILSELYVEK	1020
1021	CKYMDSKMKP	LWLVYNNKVF	GEDSVGVIK	NGDDLQDML	TLQMLRLMDL	LWKEAGLDLR	1080
1081	MLPYGCLATG	DRSGLIEVVS	TSETIADIQL	NSSNVAAAAA	FNKDALLNWL	KEYNSGDDLD	1140
1141	RAIEEFTLSC	AGYCVASYVL	GIGDRHSDNI	MVKKTGQLFH	IDFGHILGNF	KSKFGIKRER	1200
1201	VPFILTYDFI	HVIQOQKGTG	TEKFGRFRQC	CEDAYLILRR	HGNLFITLFA	LMLTAGLPEL	1260
1261	TSVKDIQYLK	DSLALGKSEE	EALKQFKQKF	DEALR SWTT	KVNWMAHTVR	KDYRS	1320

1-218: GST Red: HIS6-tag Green: 3C cleavage site blue:PIK3CB boxed:E1051K

PIK3CB wt¹ amino acid sequence

1	MCFSFIMPPA	MADILDIWAV	DSQIASDGS	PVDFLLPTGI	YIQLEVPREA	TISYIKQMLW	60
61	KQVHNYPMFN	LLMDIDSYMF	ACVNQTAVYE	ELEDETRRLC	DVRPFLPVLK	LVTRSCDPGE	120
121	KLDSKIGVLI	GKGLHEFDSL	KDPEVNEFR	KMRKFSEEKI	LSLVGLSWMD	WLKQTYPPEH	180
181	EPSIPENLED	KLYGGKLIVA	VHFENCQDVF	SFQVSPNMNP	IKVNELAIQK	RLTIHGKEDE	240
241	VSPYDYVLQV	SGRVEYVFGD	HPLIQFYIR	NCVMNRALPH	FILVECKIK	KMYEQEMIAI	300
301	EAAINRNSSN	LPLPLPPKKT	RIISHVWENN	NPFQIVLVKG	NKLNTEETVK	VHVRAGLFHG	360
361	TELLCKTIVS	SEVSGKNDHI	WNEPLEFDIN	ICDLPARMARL	CFAVYAVLKD	VTKKSTKTI	420
421	NPSKYQTIRK	AGKVHYPVAW	VNTMVFDFKG	QLRTGDIILH	SWSSFPDELE	EMLNPMGTVQ	480
481	TNPYTENATA	LHVKFPENKK	QPYYPFFDK	IEKAAEIAS	SDSANVSSRG	GKKFLPVLKE	540
541	ILDRDPLSQL	CENEMDIWT	LRQDCREIFP	QSLPKLLLSI	KWNKLEDVAQ	LQALLQIWPK	600
601	LPPREALLEL	DFNYPDQYVR	EYAVGCLRQM	SDEELSQYLL	QLVQVLKYEP	FLDCALSREL	660
661	LERALGNRRI	GQFLFWHLRS	EVHIPAVSVQ	FGVILEAYCR	GSVGHMKVLS	KQVEALNKLK	720
721	TLNSLIKUNA	VKLNRAKKE	AMHTCLKQSA	YREALSDLQS	PLNPCVILSE	LYVECKCYMD	780
781	SKMKPLVLVY	NNKVFGEDEV	GVIFFKNGDDL	RQDMLTLQML	RLMDLLWKEA	GLDLRMLPYG	840
841	CLATGDRSGL	IEVSTSETI	ADIQLNSSNV	AAAAAFNKDA	LLNWLKEYNS	GDDLDRAIEE	900
901	FTLSCAGYCV	ASYVLGIGDR	HSDNIMVKKT	GQLFHIDFGH	ILGNFKSKFG	IKRERVPFIL	960
961	TYDFIHVIQQ	GKTGNTKFG	RFRQCCEDAY	LILRRHGNLF	ITLFLMLTA	GLPELTSVKD	1020
1021	IQYLKDSLAL	GKSEEEALKQ	FKQKFDEALR	ESWTTKVNWM	AHTVRKDYRS		1080

blue: PIK3CB sequence expressed in fusion protein Red: variant in fusion protein

¹NCBI/Protein accession number NP_006210.1

