Discovery Services

Certificate of Analysis

PI3K-C2β, active

(Recombinant enzyme expressed in Sf21 insect cells)
Item # 14-907, 14-907-K, 14-907M
Parent Lot # D9MN050N

The data presented in this document apply to the parent lot shown above and to all pack sizes derived from subsequent vialling runs of this parent lot. An alphabetical suffix after the parent lot number is used to denote each vialling run.

Product Description: *N*-terminal 6His-tagged recombinant human PI3K-C2β full length, expressed by baculovirus in Sf21 insect cells. Purified using Ni^{2+}/NTA agarose.
Purity 40% by SDS-PAGE and Coomassie blue staining. MW = 189kDa.

Specific Activity (Parent lot# D9MN050N): 153U/mg, where one unit of PI3K-C2β, active activity is defined as 1nmol phosphatidylinositol 3-phosphate (PI(3)P) formed per minute at room temperature with a final ATP concentration of 200µM.

Formulation: 0.323mg/ml of enzyme in 50mM Tris/HCl pH8.0, 300mM NaCl, 0.1mM EGTA, 0.03% Brij-35, 270mM sucrose, 0.2mM PMSF, 1mM benzamidine, 0.1% 2-mercaptoethanol. Frozen solution.

Storage and Stability: On receipt of material store at -70°C. Unopened reagent is stable for a minimum of 1 year from date of shipment when stored at recommended storage temperature. Avoid repeat freeze/thaw cycles. For maximum recovery of product, centrifuge original vial prior to removing the cap.

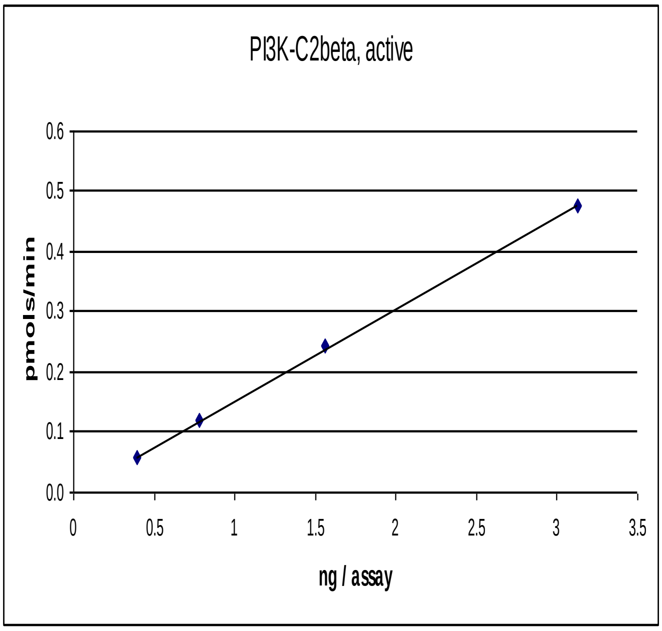
Handling Recommendations: Rapidly thaw the vial under cold water and immediately place on ice. Aliquot unused material into pre-chilled micro-centrifuge tubes and immediately snap-freeze the vials in liquid nitrogen prior to re-storage at -70°C.

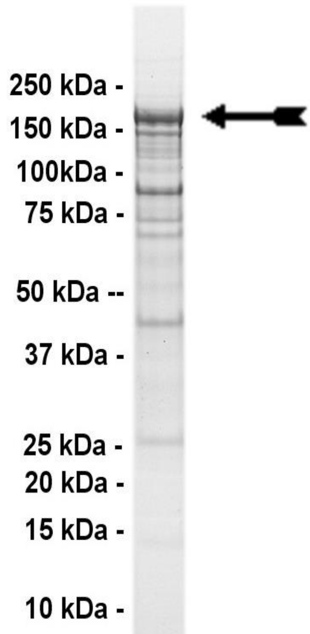
FOR IN VITRO RESEARCH USE ONLY
NOT FOR USE IN HUMANS OR ANIMALS

Quality Control Testing

Kinase Assay: 0.4–3.2ng of this enzyme phosphorylated 25µM phosphatidylinositol in the assay referenced on page two.

MS Tryptic Fingerprint: Confirmed product identity as PI3K-C2β, active with the translated sequence listed on page three





SDS-PAGE and Coomassie Stain: Purity was assessed by SDS-PAGE and Coomassie blue staining using 3µg of PI3K-C2β, active

Eurofins Pharma Discovery Services UK Limited
Gemini Crescent
Dundee Technology Park
DUNDEE
DD2 1SW United Kingdom
T | +44 (0)1382 561600
F | +44 (0)1382 561601
www.eurofins.com/pharmadiscovery

Certificate of Analysis

Eurofins PI3 Kinase Homogeneous Time-resolved Fluorescence (HTRF) Class II Reagent Kits

The following Eurofins kits are suitable for use with this enzyme. Assay protocol can be found in the corresponding Certificate of Analysis.

Cat. No	Kit Description
33-038	PI 3-Kinase (Class II) HTRF Assay 1-plate kit
33-039	PI 3-Kinase (Class II) HTRF Assay 5-plate kit

Certificate of Analysis

PI3K-C2β Sequence Information

Protein human PI3K-C2β

Tags *N*-terminal 6His

Native sequence M31 of the recombinant protein is equivalent to M1 of human PI3K-C2β

Accession number GenBank NM_002646

Recombinant PI3K-C2β amino acid sequence:

```
   1 MSYYHHHHHH DYDIPTTENL YFQGAMDPEF MSSTQDNGEH WKSLESVGIS RKELAMAEAL
  61 QMEYDALSRL RHDKEENRAK QNADPSLISW DEPGVDFYSK PAGRRTDLKL LRGLSGSDPT
 121 LNYNSLSPQE GPPNHSTSQG PQPGSDPWPK GSLSGDYLYI FDGSDGGVSS SPGPGDIEGS
 181 CKKLSPPPLP PRASIWDTPP LPPRKGSPSS SKISQPSDIN TFSLVEQLPG KLLEHRILEE
 241 EEVLGGGGQG RLLGSVDYDG INDAITRLNL KSTYDAEMLR DATRGWKEGR GPLDFSKDTS
 301 GKPVARSKTM PPQVPPRTYA SRYGNRKNAT PGKNRRISAA PVGSRPHTVA NGHELFEVSE
 361 ERDEEVAAFC HMLDILRSGS DIQDYFLTGY VWSAVTPSPE HLGDEVNLKV TVLCDRLQEA
 421 LTFTCNCSST VDLLIYQTLC YTHDDLRNVD VGDFVLKPCG LEEFLQNKHA LGSHEYIQYC
 481 RKFDIDIRLQ LMEQKVVRSD LARTVNDDQS PSTLNYLVHL QERPVKQTIS RQALSLLFDT
 541 YHNEVDAFLL ADGDFPLKAD RVVQSVKAIC NALAAVETPE ITSALNQLPP CPSRMQPKIQ
 601 KDPSVLAVRE NREKVVEALT AAILDLVELY CNTFNADFQT AVPGSRKHDL VQEACHFARS
 661 LAFTVYATHR IPIIWATSYE DFYLSCSLSH GGKELCSPLQ TRRAHFSKYL FHLIVWDQQI
 721 CFPVQVNRLP RETLLCATLY ALPIPPPGSS SEANKQRRVP EALGWVTTPL FNFRQVLTCG
 781 RKLLGLWPAT QENPSARWSA PNFHQPDSVI LQIDFPTSAF DIKFTSPPGD KFSPRYEFGS
 841 LREEDQRKLK DIMQKESLYW LTDADKKRLW EKRYYCHSEV SSLPLVLASA PSWEWACLPD
 901 IYVLLKQWTH MNHQDALGLL HATFPDQEVR RMAVQWIGSL SDAELLDYLP QLVQALKYEC
 961 YLDSPLVRFL LKRAVSDLRV THYFFWLLKD GLKDSQFSIR YQYLLAALLC CCGKGLREEF
1021 NRQCWLVNAL AKLAQQVREA APSARQGILR TGLEEVKQFF ALNGSCRLPL SPSLLVKGIV
1081 PRDCSYFNSN AVPLKLSFQN VDPLGENIRV IFKCGDDLRQ DMLTLQMIRI MSKIWVQEGL
1141 DMRMVIFRCF STGRGRGMVE MIPNAETLRK IQVEHGVTGS FKDRPLADWL QKHNPGEDEY
1201 EKAVENFIYS CAGCCVATYV LGICDRHNDN IMLKTTGHMF HIDFGRFLGH AQMFGNIKRD
1261 RAPFVFTSDM AYVINGGDKP SSRFHDFVDL CCQAYNLIRK HTHLFLNLLG LMLSCGIPEL
1321 SDLEDLKYVY DALRPQDTEA NATTYFTRLI ESSLGSVATK LNFFIHNLAQ MKFTGSDDRL
1381 TLSFASRTHT LKSSGRISDV FLCRHEKIFH PNKGYIYVVK VMRENTHEAT YIQRTFEEFQ
1441 ELHNKLRLLF PSSHLPSFPS RFVIGRSRGE AVAERRREEL NGYIWHLIHA PPEVAECDLV
1501 YTFFHPLPRD EKAMGTSPAP KSSDGTWARP VGKVGGEVKL SISYKNNKLF IMVMHIRGLQ
1561 LLQDGNDPDP YVKIYLLPDP QKTTKRKTKV ARKTCNPTYN EMLVYDGIPK GDLQQRELQL
1621 SVLSEQGFWE NVLLGEVNIR LRELDLAQEK TGWFALGSRS HGTL
```

Recombinant PI3K-C2β nucleotide sequence:

```
   1 atgtcgtact accatcacca tcaccatcac gattacgata tcccaacgac cgaaaacctg
  61 tattttcagg gcgccatgga tccggaattc atgtcttcga ctcaggacaa tggggaacac
 121 tggaagtccc tggagtcagt gggcatcagc cgcaaagagc tagcgatggc cgaagccctg
 181 cagatggagt atgatgccct gtcccggctc cggcatgaca aggaggagaa cagagccaag
 241 cagaacgcag acccctctct catcagctgg gatgagcctg gggtagactt ttacagcaag
 301 ccagcaggaa ggcggaccga cctcaagctg ttacgcggtc tctctggctc tgatcctacc
 361 cttaactaca actcactatc cccacaggaa gggccgccca accactctac ctcccaaggg
 421 ccacagcctg gctcagatcc ctggcccaaa ggctccctgt ctggagacta tctctacatt
 481 tttgatggtt cagatggggg agtctcttcg tccccaggac caggggacat agagggctct
 541 tgcaagaaac tatccccacc tcctctgcct ccccgagctt ctatctggga tacccctccc
 601 ctgcctccca gaaaggggtc cccctcatcc tccaagatct cccagcccag tgacatcaac
```

Certificate of Analysis

```
 661 actttctctt tggtcgaaca attgccaggc aaactgctag agcatcggat cctagaagag
 721 gaagaggtgc tgggaggtgg gggtcagggg cgcctactgg ggtctgtgga ctatgatggt
 781 atcaatgatg caattactag gctcaacttg aaatcgacct atgatgcgga gatgttgcgg
 841 gatgccacca ggggctggaa ggagggccga gggccgctgg acttcagcaa agacacctct
 901 ggaaaacccg tggccaggag caagactatg ccccctcagg tgcccccccg cacctatgcc
 961 tcccgctatg gcaaccgaaa gaatgcgacg cctggcaaga accgccggat ttctgcagcc
1021 ccggtgggct cccggcccca cactgttgcc aatggccatg agttgtttga ggtctcagaa
1081 gagagagatg aggaggttgc tgcattttgc cacatgctgg atatccttcg atctggctct
1141 gacatccaag actacttcct cactggctat gtctggagtg ctgtcacccc tagcccagag
1201 cacctcgggg atgaggtcaa cctgaaggtg actgtgttgt gtgacaggct tcaagaggca
1261 ctcactttca cctgcaactg ttcctccact gtagacttgc ttatctacca gaccctgtgc
1321 tacacccatg atgacctgag gaatgtggac gtgggtgact ttgtgctaaa gccctgcggg
1381 ctggaggagt tcctgcagaa caagcatgcc ttgggcagtc atgagtacat ccaatactgc
1441 cgcaagtttg acattgacat tcggctacag ctgatggagc agaaggttgt gcgcagtgac
1501 ctggcccgga cggtgaatga tgaccagagc ccctccacct tgaactacct cgtccatctc
1561 caagagaggc ctgtcaagca gaccatcagc aggcaggccc tgagtcttct gttcgacact
1621 taccacaatg aggtggatgc cttcctgctg gctgatggag acttcccact gaaggctgac
1681 agggtggtcc agtccgtcaa ggccatctgc aacgccctgg ccgccgtgga aacccctgag
1741 atcaccagtg ctctcaacca gctgcccccc tgcccctccc gcatgcagcc taaaattcag
1801 aaggatccca gtgtcttggc tgtgagggaa aaccgagaga aggtcgtgga agccctgacc
1861 gctgccatct tggacctggt ggagctgtac tgcaacacat tcaacgcaga cttccagacg
1921 gcagtgcccg ggagccgcaa gcatgacctg gtccaggagg cctgccattt cgccaggtcc
1981 ctggccttca ctgtctatgc cacccaccgc atccccatca tctgggctac cagctatgaa
2041 gatttctacc tctcctgctc cctcagccat ggcggcaagg agctgtgcag ccccctgc ag
2101 acccgaagag ctcacttctc caagtacctc ttccacctca tcgtctggga ccagcagatc
2161 tgcttcccag tgcaggtgaa ccggctgcct cgggagacac tgctgtgtgc cactctctat
2221 gctctgccca tccccccacc ggggagctcc tcagaggcca ataagcagcg gcgggtgcct
2281 gaagccctgg gctgggtcac taccccactc ttcaacttca ggcaggtcct gacctgtggc
2341 cggaagcttc tgggtttgtg gccagcaaca caggaaaatc ccagcgcccg ttggagtgca
2401 cctaatttcc accagccaga cagtgtcatc ctgcagattg acttccccac ctcggccttt
2461 gacatcaagt tcaccagccc ccctggagac aagttcagcc cccgctatga gtttggcagc
2521 ctccgggaag aagaccagcg caagcttaaa gacatcatgc agaaagagtc cttgtactgg
2581 ctcactgatg ctgacaagaa gcgcctgtgg gagaagcgat attactgcca ctcggaggtg
2641 agctcgctcc ccctggtgct cgccagcgcc cccagctggg agtgggcttg cctgcctgac
2701 atctatgttc tcctgaagca gtggacccac atgaaccacc aggatgccct ggggctcctg
2761 catgccacct tcccggacca ggaggtgcgt cgtatggctg tgcagtggat tggctcactc
2821 tcagatgctg agctgctaga ctacctgccc cagctggtac aggccctgaa gtatgaatgc
2881 tacctggaca gcccgttggt gcgcttcctc ctgaaacgag ctgtgtctga cttgagagtg
2941 actcactact tcttctggtt actgaaggac ggcctcaagg actctcagtt cagcatccgc
3001 taccagtatc tgctggcagc cttactgtgc tgctgtggca aggggctgag agaagagttt
3061 aaccgccagt gctggcttgt caatgccctg gccaaactgg cccagcaggt ccgggaggca
3121 gccccatctg caaggcaggg aatcctccgc acgggcctgg aggaggtgaa gcagttcttt
3181 gccctcaatg gctcgtgccg cttgccactc agccccagtc tgctggttaa gggaattgtg
3241 cccagggact gttcctactt caactccaat gctgtccccc tcaaactctc cttccaaaat
3301 gtggatcccc tgggtgagaa catccgtgtc atcttcaagt gtggggacga ccttcgccag
3361 gacatgctaa cgctgcagat gattcgcatc atgagcaaga tctgggtcca ggaggggctg
3421 gacatgcgca tggtcatctt ccgctgcttc tccaccggcc ggggcagagg gatggtggag
3481 atgatcccta atgctgagac cctgcgtaag atccaggtgg agcatggggt gaccggctcg
3541 ttcaaggacc ggcccctggc agactggctg cagaaacaca accctgggga ggacgagtat
3601 gagaaggctg tggagaactt tatctactcc tgcgctggct gctgcgtggc cacgtacgtc
3661 ttgggcatct gtgaccgaca taatgacaac atcatgctga agaccactgg tcacatgttc
3721 cacattgatt ttggccgctt cctgggccat gcccagatgt ttggcaacat caagcgggac
3781 cgtgcccccct ttgtcttcac ctcggacatg gcgtatgtca tcaacggggg tgacaagc ct
3841 tccagccgct tccatgattt tgttgacctt tgctgccaag cctacaacct cattcgcaag
3901 cacacccacc tcttcctcaa ccttctgggc ctgatgttgt cctgtgggat ccctgaactc
3961 tcagacctgg aggacctcaa gtatgtgtac gatgccctga ggcctcagga tacagaggcc
4021 aatgccacta cctacttcac taggttgatt gagtccagcc tgggcagtgt agccacaaag
```

Discovery Services

Certificate of Analysis

```
4081 ctcaattttt tcatccataa tctggctcag atgaagttca cgggctcaga tgaccggctg
4141 accctctcct ttgcctcccg aacacacact ctcaagagct ctggccgaat cagtgatgtt
4201 ttcctctgcc gccatgagaa gatcttccac cccaacaaag gctatatata tgtggtaaag
4261 gtgatgcgag agaacactca cgaggccacc tacatccagc ggacctttga ggagttccag
4321 gaattacaca ataagttgcg gctgctcttc ccttcttccc acttgcccag cttccctagt
4381 cgcttcgtga tcggccgctc ccggggagag gcggtggccg agcggcggag ggaggagcta
4441 aacggttaca tctggcactt gatccacgca ccccctgagg tggccgagtg tgatttggtg
4501 tacaccttct tccacccact gccccgggat gagaaggcta tgggtaccag cccagctcct
4561 aagtcctcag atggcacatg ggcccggccc gtcggaaagg tgggaggggа ggtgaagctg
4621 tccatctcct acaaaaacaa taaactcttc atcatggtga tgcatattcg gggcttgcaa
4681 ctgctccagg atggaaatga ccctgacccc tatgtgaaaa tttacctcct tcctgaccct
4741 cagaaaacca ctaagaggaa aaccaaagtg gcccggaaaa cctgcaatcc tacctacaat
4801 gagatgttgg tatatgatgg gatccccaag ggtgacctgc agcagcggga gctccagctg
4861 agcgtgctga gtgagcaggg attctgggag aacgtcctcc tcggtgaggt gaacatccgc
4921 ctgcgagagc tggacctggc tcaggagaag accggctggt tcgccctggg atctcgaagt
4981 catggcacct tgtga
```

Reviewed and approved by site quality representative.