

# AKT2 aa107-481

v-akt murine thymoma viral oncogene homolog 2

Recombinant Human Active Protein Kinase

HGNC Symbol: AKT2

Synonyms: PKBBETA; PRKBB; RAC-BETA

Product No.: 0276-0000-2

Lot: 003

**Description:** Human AKT2, C-terminal fragment, amino acids A<sub>107</sub>-E<sub>481</sub> (as in NCBI/Protein entry NP\_001617.1), N-terminal GST-HIS<sub>6</sub> fusion protein with a Thrombin cleavage site, expressed in Sf9 insect cells

**Product identity:** AKT2 Lot 003, was confirmed as AKT2 by specific Western Blotting using anti AKT2 antibody

**Theoretical MW<sub>Fusion Protein</sub>:** 72,844 Da

**Expression:** Baculovirus infected Sf9 cells

**Purification:** GST-Affinity Chromatography

**Activation:** With PDK1

**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:** 0.367 µg/µl

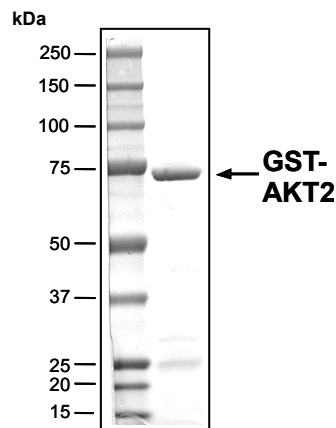
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

**Biochemical Parameters:**

Specific kinase activity (Pi transfer): 272 pmol/µg×min

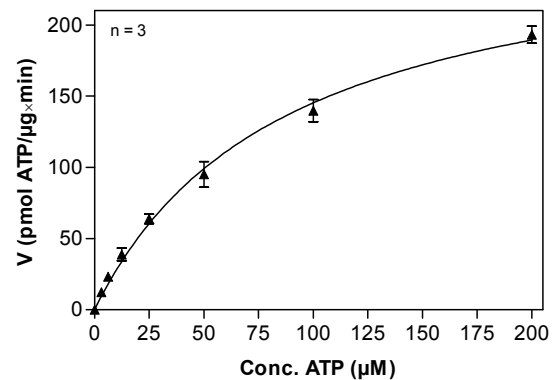
ATP-K<sub>M</sub>: 87 µM

**AKT2 Lot 003:  
Coomassie stain**



2.0 µg GST-AKT2

**AKT2 Lot 003:  
Determination of V<sub>max</sub> and K<sub>M</sub> value for ATP**



**Determination of K<sub>M</sub> value & Specific activity:**

- Assay conditions:
  - 60 mM HEPES-NaOH, pH 7.5
  - 3 mM MgCl<sub>2</sub>
  - 3 mM MnCl<sub>2</sub>
  - 3 µM Na-orthovanadate
  - 1.2 mM DTT
  - 50 µg / ml PEG<sub>20,000</sub>
  - ATP (variable)
  - Substrate: R<sub>11</sub>-GSK3(14-27) (R<sub>11</sub>-SGRARTSSFAEPGGK), 100 µg / ml
  - AKT2: 2.0 µg / ml
- Filter binding assay
  - MSFC membrane (Millipore)

**Additional assay technology:** AKT2 Lot 003

was also successfully tested by ProQinase for the use with the ADP-Glo™ Kinase assay from



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| AKT2 Recombinant Fusion Protein Amino Acid Sequence |                    |                   |                   |                   |                   |                   |     |
|---|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|
| 1   | MSPILGYWKI         | KGLVQPTRL         | LEYLEEKYEE        | HLYERDEGDK        | WRNKKFELGL        | EFPNLPYYID        | 60  |
| 61  | GDVKLTQ SMA        | IIRYIADKHN        | MLGGCPKERA        | EISMLEGAVL        | DIRYGVSRIA        | YSKDFETLKV        | 120 |
| 121   | DFLSKLPEML         | KMFEDRLCHK        | TYLNGDHVTH        | PDFMLYDALD        | VVLYMDPMCL        | DAFPKLVCFK        | 180 |
| 181   | KRIEAI PQID        | KYLKSSKYIA        | WPLQGQWATF        | GGGDHPPKSD        | PMGHHHHHHG        | RRRASVAAGI        | 240 |
| 241   | <b>LVPRG</b> SPGLD | GICSIEEFAN        | <b>SLKQRAPGED</b> | <b>PMDYKCGSPS</b> | <b>DSSTTEEMEV</b> | <b>AVSKARAKVT</b> | 300 |
| 301   | <b>MNDFDY LKLL</b> | <b>GKGTFGKVIL</b> | <b>VREKATGRYY</b> | <b>AMKILRKEVI</b> | <b>IAKDEVAHTV</b> | <b>TESRVLQNT</b>  | 360 |
| 361   | <b>HPFLTALKYA</b>  | <b>FQTHDRLCFV</b> | <b>MEYANGGELF</b> | <b>FHLSRERVFT</b> | <b>EERARFYGAE</b> | <b>IVSALEYLHS</b> | 420 |
| 421   | <b>RDVVYRDIKL</b>  | <b>ENLMLDKDGH</b> | <b>IKITDFGLCK</b> | <b>EGISDGATMK</b> | <b>TFCGTPEYLA</b> | <b>PEVLEDNDYG</b> | 480 |
| 481   | <b>RAVDWWGLGV</b>  | <b>VMYEMMCGRL</b> | <b>PFYNQDHERL</b> | <b>FELILMEEIR</b> | <b>FPRTLSPEAK</b> | <b>SLLAGLLKGD</b> | 540 |
| 541   | <b>PKQRLGGGPS</b>  | <b>DAKEVMEHRF</b> | <b>FLSINWQDVV</b> | <b>QKLLPPFKP</b>  | <b>QVTSEVDTRY</b> | <b>FDDEFTAQSI</b> | 600 |
| 601   | <b>TITPPDRYDS</b>  | <b>LGLLELDQRT</b> | <b>HFPQFSYSAS</b> | <b>IRE</b>        |                   |                   | 660 |

1-218: GST **Red**: HIS6-tag **Pink**: Thrombin cleavage site **blue**: AKT2 fragment

| AKT2 wt <sup>1</sup> Amino Acid Sequence |                   |                    |                    |                    |                    |                   |     |
|--|-------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-----|
| 1  | MNEVSVIKEG        | WLHKRGEYIK         | TWRPRYFLLK         | SDGSFIGYKE         | RPEAPDQ TLP        | PLNNFSVAEC        | 60  |
| 61                                       | QLMKTERPRP        | NTFVIRCLQW         | TTVIERTFHV         | DSPDEREEWM         | RAIQMVANSL         | <b>KQRAPGEDPM</b> | 120 |
| 121                                      | <b>DYKCGSPSDS</b> | <b>STTEEMEVAV</b>  | <b>SKARAKVTMN</b>  | <b>DFDY LKLLGK</b> | <b>GTFGKVILVR</b>  | <b>EKATGRYYAM</b> | 180 |
| 181                                      | <b>KILRKEVIA</b>  | <b>KDEVAHTVTE</b>  | <b>SRVLQNT RHP</b> | <b>FLTALKYAFQ</b>  | <b>THDRLCFVME</b>  | <b>YANGGELFFH</b> | 240 |
| 241                                      | <b>LSRERVFTEE</b> | <b>RARFYGAEIV</b>  | <b>SALEYLHSRD</b>  | <b>VVYRDIKLEN</b>  | <b>LMLDKDGH IK</b> | <b>ITDFGLCKEG</b> | 300 |
| 301                                      | <b>ISDGATMKTF</b> | <b>CGTPEYL APE</b> | <b>VLEDNDYGRA</b>  | <b>VDWWGLGVVM</b>  | <b>YEMMCGRLPF</b>  | <b>YNQDHERLFE</b> | 360 |
| 361                                      | <b>LILMEEIRFP</b> | <b>RTLSPEAKSL</b>  | <b>LAGLLK KDPK</b> | <b>QRLGGGPSDA</b>  | <b>KEVMEHRFFL</b>  | <b>SINWQDVVQK</b> | 420 |
| 421                                      | <b>KLLPPFKPQV</b> | <b>TSEVDTRYFD</b>  | <b>DEFTAQSITI</b>  | <b>TPPDYDSL G</b>  | <b>LLELDQRT HF</b> | <b>PQFSYSASIR</b> | 480 |
| 481                                      | <b>E</b>          |                    |                    |                    |                    |                   | 540 |

**blue**: AKT2 sequence expressed in fusionprotein

<sup>1</sup>NCBI/Protein accession number NP\_001617.1