

## ProQinase™ ERK2 K54R

mitogen-activated protein kinase 1

Recombinant Protein Kinase Substrate

HGNC Symbol: MAPK1

Synonyms: PRKM1, PRKM2, ERK, ERK2, MAPK2

Product No.: 0416-0000-5

Lot: 018

**Description:** Human ERK2, full length, amino acids M<sub>1</sub>-S<sub>360</sub> (as in [NCBI/Protein](#) entry NP\_620407.1), mutationally inactivated K54R, HIS6-tagged. Expressed in E.coli.

**Theoretical MW<sub>Fusion Protein</sub>:** 45,502 Da

**Expression host:** E.coli

**Purification:** Immobilized Metal Affinity Chromatography

**ATPase activity:** In an ADP-Glo™ assay (Promega) with 10 μM ATP or 30 μM ATP, the ATP → ADP conversion within 30 min is < 2% at a concentration of 100 μg/ml substrate.

Detailed ATPase assay conditions on request

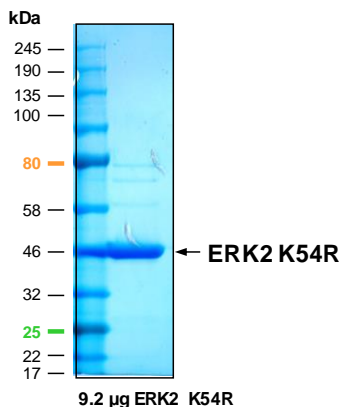
**Storage buffer:** 50 mM HEPES pH 7.5, 100 mM NaCl, 5 mM DTT, 20 % glycerol

**Storage temperature:** -80°C

For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10 μl are not advisable. Avoid repeated freeze-thaw cycles!

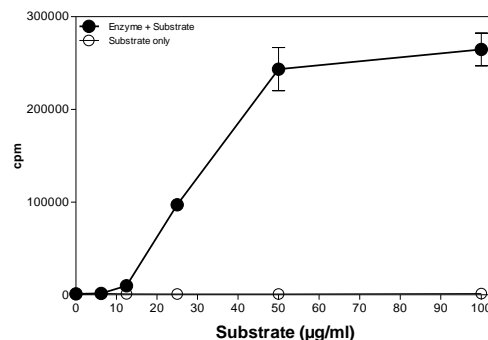
**Protein concentration:** 0.922 μg/μl (Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

**ERK2 K54R Lot 018:**  
**Coomassie stain**



### Phosphorylation of ERK2 K54R by MEK1

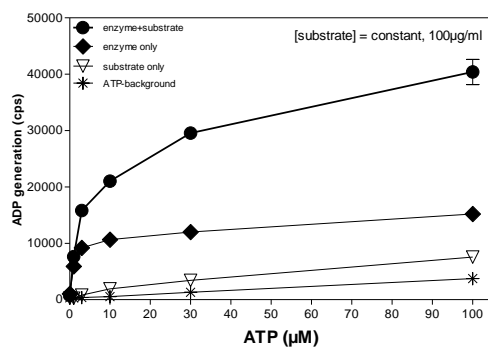
#### Radiometric filter binding assay



#### Assay conditions:

70 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: 1 μM  
ERK2 K54R: variable concentration  
MEK1: 5 μg/ml  
MSFC membrane (Millipore)

#### ADP-Glo™ assay (Promega)



70 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 concentration  
1 % (v/v) DMSO  
ERK2 K54R: 100 μg/ml  
MEK1: 1.25 μg/ml

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## ProQinase™ ERK2 K54R

Product No.: 0416-0000-5

| ERK2 K54R Recombinant Fusion Protein Amino Acid Sequence |            |            |            |            |            |                            |     |
|--|------------|------------|------------|------------|------------|----------------------------|-----|
| 1  | MRGS       | HHHHHH     | GMASMTGGQQ | MGRDLYDDDD | KDPSSR     | MAAA AAAGAGPEMV RGQVFDVGPR | 60  |
| 61   | YTNLSYIGEG | AYGMVCSAYD | NVNKVRVAI  | R          | KISPFEHQTY | CQRTLREIKI LLRFRHENII      | 120 |
| 121  | GINDIIRAPT | IEQMKDVYIV | QDLMETDLYK | LLKTQHLSND | HICYFLYQIL | RGLKYIHSAN                 | 180 |
| 181  | VLHRDLKPSN | LLLNTTCDLK | ICDFGLARVA | DPE        | HDHTGFL    | TEYVATRWR APEIMLNSKG       | 240 |
| 241  | YTKSIDIWSV | GCILAEMLSN | RPIFPGKHYL | DQLNHILGIL | GSPSQEDLNC | IINLKARNYL                 | 300 |
| 301  | LSLPHKNKVP | WNRLFNPADS | KALDLLDKML | TFNPHKRIEV | EQALAHPLYE | QYYDPSDEPI                 | 360 |
| 361  | AEAPFKFDME | LDDLPEKELK | ELIFEETARF | QPGYRS     |            |                            | 420 |

Red: HIS6-tag blue: ERK2 boxed: K54R mutation boxed: variation from RefSeq

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