

# Certificate of Analysis

## p38-delta (non activated)

Mitogen-activated protein kinase 13

Recombinant Human non activated Protein Kinase

HGNC Symbol: MAPK13

Synonyms: PRKM13, SAPK4, p38delta

Product No.: 0941-0000-3

Lot: 004

**Description:** Human p38-delta, full length, amino acids M<sub>1</sub>-L<sub>365</sub> (as in NCBI/Protein entry NP\_002745.1), non activated, untagged, expressed in E.coli

**Theoretical MW<sub>Protein</sub>:** 42,501 Da

**Expression:** E. coli

**Activation:** No special measures were taken to activate p38-delta Lot 004

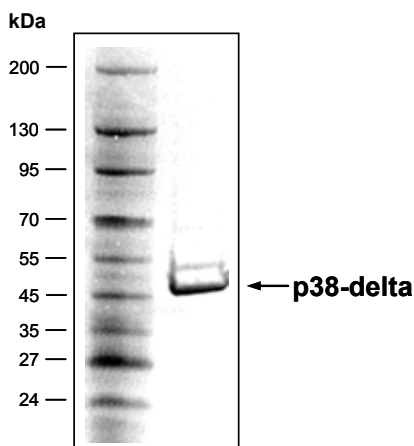
**Purification:** GST-Affinity Chromatography followed by cleavage of GST-tag

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

**Storage temperature:** -80°C  
Avoid repeated freeze-thaw cycles!

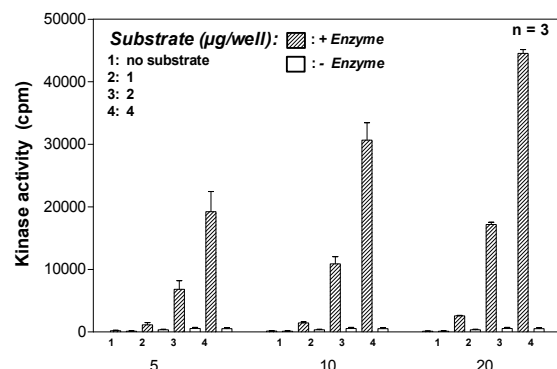
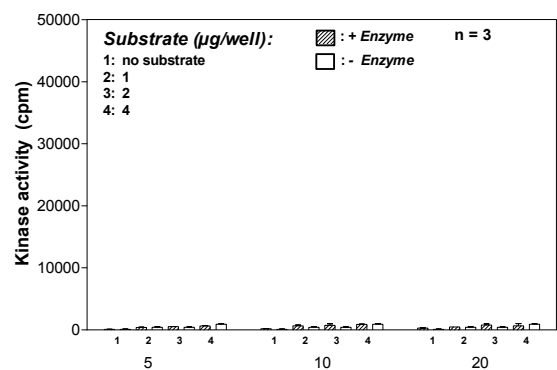
**Protein concentration:** 0.357 µg/µl  
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

**p38-delta Lot 004:**  
**Coomassie stain**



3.0 µg p38-delta

### Kinase activity p38-delta (non activated) vs active p38-delta:



#### Final assay concentrations:

- 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>
- 1 µM ATP (610,000 cpm <sup>33</sup>P-γ-ATP)
- Substrate (variable): ATF2
- Recombinant p38-delta (non activated) or active p38-delta (variable)

Assay: <sup>33</sup>PanQinase® Assay

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## p38-delta (non activated)

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p38-delta Recombinant Fusion Protein Amino Acid Sequence								
1	GPLGS	MSLIR	KKGFYKQDVN	KTAWELPKTY	VSPTHVGS	GA YGSVCSAIDK	RSGEKVAIKK	60
61	LSRPFQSEIF	AKRAYRELLL	LKHMQHENV	IGLLDVF	TPAS SLRNFYDFYL	VMPFMQTDLQ	120	
121	KINGMEFSEE	KIQYLVYQML	KGLKYIHSAG	VVHRDLKPGN	LAVNEDCELK	ILDFGLARHA	180	
181	DAEMTGYVVT	RWYRAPEVIL	SWMHYNQTV	D IWSVGCIMAE	MLTGKTLFKG	KDYLDQLTQI	240	
241	LKVTGVPGTE	FVQKLNKAA	KSYIQSLPQT	PRKDF	TQLFP RASPQAADLL	EKMLELDVVK	300	
301	RLTAAQALTH	PFFEPFRDPE	EETEAQQPFD	DSLEHEKLT	V DEWKQHIYKE	IVNFSPIARK	360	
361	DSRRRSGMKL						420	

1-5: remnant of 3C cleavage blue: p38-delta

p38-delta wt <sup>1</sup> amino acid sequence									
1	MSLIR	KKGFY	KQDVN	KTAWEL	PKTYVSP	TH VGSGAYGSVC	SAIDKRSGEK	VAIKKLSRPF	60
61	QSEIF	AKRAY	RELLL	LKHMQ	HENVIG	LLDV FTPASSLRNF	YDFYLVMPFM	QTDLQKIMGM	120
121	EFSEE	KIQYL	VYQML	KGLKY	IHSAG	VVHRD LKPGNLAVNE	DCELKILDFG	LARHADAEMT	180
181	GYVTR	WYRA PEVIL	SWMHY	NQTV	DIWSVG CIMAEMLTGK	TLFKGKDYLD	QLTQILKVTG	240	
241	VPGTE	FVQKL	NDKAA	KSYIQ	SLPQT	PRKDF TQLFPRASPQ	AADLLEKMLE	LDVVKRLTAA	300
301	QALTH	PFFEP	FRDPE	EETEA	QQPFD	SLEH EKLTVDEWKQ	HIYKEIVNFS	PIARKDSRRR	360
361	SGMKL							420	

blue: p38-delta sequence expressed in fusionprotein

<sup>1</sup>NCBI/Protein accession number NP\_002745.1