



Datasheet for ABIN1981725

## MEK1 ELISA Kit



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### Overview

Quantity:	96 tests
Target:	MEK1 (MAP2K1)
Binding Specificity:	pSer217, pSer221
Reactivity:	Human, Rat, Mouse
Method Type:	Sandwich ELISA
Application:	ELISA

### Product Details

Purpose:	Human/Mouse/Rat Phospho-MEK1 (S217/S221) ELISA Kit. This assay semi-quantitatively measures phosphorylated Mek (Ser217/S221) in lysate samples.
Sample Type:	Cell Lysate, Tissue Lysate
Analytical Method:	Semi-Quantitative
Detection Method:	Colorimetric
Specificity:	The antibody pair provided in this kit recognizes human, mouse and rat Phospho-Mek1 (Ser217/221).
Characteristics:	<ul style="list-style-type: none"><li>• Rapidly measure phosphorylated protein in lysates</li><li>• Screen numerous different cell lysates without performing a Western Blot analysis</li><li>• Minimal hands-on time, convenient, and non-radioactive material</li></ul>
Components:	<ul style="list-style-type: none"><li>• Pre-Coated 96-well Strip Microplate</li><li>• Wash Buffer</li><li>• Anti-Phospho Antibody</li></ul>

## Product Details

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- HRP-Conjugated Secondary Antibody
- Assay Diluent
- TMB One-Step Substrate
- Stop Solution
- Lysis Buffer
- Positive Control Sample

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### Material not included:

- Distilled or deionized water
- 100 mL and 1 liter graduated cylinders
- Tubes to prepare sample dilutions
- Protease and Phosphatase inhibitors
- Precision pipettes to deliver 2  $\mu$ L to 1 mL volumes
- Adjustable 1-25 mL pipettes for reagent preparation
- Benchtop rocker or shaker
- Microplate reader capable of measuring absorbance at 450 nm

## Target Details

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Target: MEK1 (MAP2K1)

Alternative Name: MEK1 ([MAP2K1 Products](#))

Background: MEK1 p-S217/S221

Gene ID: 5604

UniProt: [Q02750](#)

Pathways: [MAPK Signaling](#), [RTK Signaling](#), [Interferon-gamma Pathway](#), [Fc-epsilon Receptor Signaling Pathway](#), [Neurotrophin Signaling Pathway](#), [Activation of Innate immune Response](#), [Toll-Like Receptors Cascades](#), [Autophagy](#), [Signaling of Hepatocyte Growth Factor Receptor](#), [BCR Signaling](#)

## Application Details

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Sample Volume: 100  $\mu$ L

Plate: Pre-coated

Protocol:

1. Prepare all reagents and samples as instructed in the manual.
2. Add 100  $\mu$ L of sample or positive control to each well.
3. Incubate 2.5 h at RT or O/N at 4  $^{\circ}$ C.
4. Add 100  $\mu$ L of prepared primary antibody to each well.
5. Incubate 1 h at RT.

6. Add 100  $\mu$ L of prepared 1X HRP-Streptavidin to each well.
7. Incubate 1 h at RT.
8. Add 100  $\mu$ L of TMB One-Step Substrate Reagent to each well.
9. Incubate 30 min at RT.
10. Add 50  $\mu$ L of Stop Solution to each well.
11. Read at 450 nm immediately.

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### Reagent Preparation:

1. Bring all reagents and samples to room temperature (18 - 25 °C) before use.
2. Item E, Assay Diluent should be diluted 5-fold with deionized or distilled water before use.
3. Preparation of Positive Control: Briefly spin the Positive Control vial of Item K. Add 500  $\mu$ L 1x Assay Diluent (Item E, Assay Diluent should be diluted 5-fold with deionized or distilled water before use) into Item K vial to prepare a Positive Control (P-1) Solution (See i. Positive Control of part IX for a typical result in page 9). Dissolve the powder thoroughly by a gentle mix (it can be removed by centrifuge if any precipitate in the solution is found). Pipette 270  $\mu$ L 1x Assay Diluent into each tube. Use the Positive Control (1) to produce a dilution series (shown below). Mix each tube thoroughly before the next transfer. 1x Assay Diluent serves as the background. \ Phospho-Mek1 (Ser217/221) ELISA Kit Protocol 6
4. If the Wash Concentrate (20x) (Item B) contains visible crystals, warm to room temperature and mix gently until dissolved. Dilute 20 mL of Wash Buffer Concentrate into deionized or distilled water to yield 400 mL of 1x Wash Buffer.
5. Briefly spin the detection antibody (Item C) before use. Add Add 100  $\mu$ L of 1x Assay Diluent into the vial to prepare a detection antibody concentrate. Pipette up and down to mix gently (the concentrate can be stored at 4 °C for 5 days or at - 80 °C for one month). The rabbit anti-Mek1 (Ser217/221) antibody should be diluted 55-fold with 1x Assay Diuent and used in step 4 of Part VII Assay Procedure.
6. Briefly spin the HRP-conjugated anti-rabbit IgG (Item D) before use. Pipette up and down to mix gently. HRP-conjugated anti- rabbit IgG concentrate should be diluted 500-fold with 1x Assay Diuent. For example: Briefly spin the vial (ItemD) and pipette up and down to mix gently. Add 10  $\mu$ L of HRP-conjugated anti- P-1 P-2 P-3 P-4 0 30  $\mu$ L Positive Control powder 500  $\mu$ L 1x Assay Diluent 30 $\mu$ l 270  $\mu$ L \ Phospho-Mek1 (Ser217/221) ELISA Kit Protocol 7 rabbit IgG concentrate into a tube with 5 mL 1x Assay Diluent to prepare a 500-fold diluted HRP-conjugated anti-rabbit IgG solution.
7. Cell Lysate Buffer should be diluted 2-folds with deionized or distilled water before use (recommend to add protease and phosphatase inhibitors). VII.

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### Sample Preparation:

Cell lysates - Rinse cells with PBS, making sure to remove any remaining PBS before adding the Cell Lysate Buffer. Solubilize cells at  $4 \times 10^7$  cells/mL in 1x Cell Lysate Buffer (we recommend adding protease and phosphatase inhibitors to Cell Lysate Buffer prior to sample preparation).

Pipette up and down to resuspend and incubate the lysates with shaking at 2 - 8° C for 30 minutes. Microcentrifuge at 13,000 rpm for 10 minutes at 2 - 8° C, and transfer the supernates into a clean test tube. Lysates should be used immediately or aliquoted and stored at -70 °C. Avoid repeated freeze-thaw cycles. Thawed lysates should be kept on ice prior to use.

For the initial experiment, we recommend to do a serial dilution testing such as 5-fold and 50-fold dilution for your cell lysates with 1x Assay Diluent (Item E) before use. \ Phospho-Mek1 (Ser217/221) ELISA Kit Protocol 5

Note: The fold dilution of sample used depends on the abundance of phosphorylated proteins and should be determined empirically. More of the sample can be used if signals are too weak. If signals are too strong, the sample can be diluted further.

Cell Lysate Buffer should be diluted 2-fold with deionized or distilled water before use (recommend to add protease and phosphatase inhibitors).

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### Assay Procedure:

1. Bring all reagents to room temperature (18 - 25 °C) before use. It is recommended that all samples or Positive Control should be run at least in duplicate.
2. Add 100 µL of each sample or positive control into appropriate wells. Cover well with plate holder and incubate for 2.5 hours at room temperature or over night at 4 °C with shaking.
3. Discard the solution and wash 4 times with 1x Wash Solution. Wash by filling each well with Wash Buffer (300 µL) using a multi-channel pipette or autowasher. Complete removal of liquid at each step is essential to good performance. After the last wash, remove any remaining Wash Buffer by aspirating or decanting. Invert the plate and blot it against clean paper towels.
4. Add 100 µL of prepared 1x detection antibody anti-Mek1 (Ser217/221) (Reagent Preparation step 5) to each well. Incubate for 1 hour at room temperature with shaking. \ Phospho-Mek1 (Ser217/221) ELISA Kit Protocol 8
5. Discard the solution. Repeat the wash as in step3.
6. Add 100 µL of prepared 1x HRP-conjugated anti-rabbit IgG (see Reagent Preparation step 6) to each well. Incubate over night at 4°C with shaking.
7. Discard the solution. Repeat the wash as in step3.
8. Add 100 µL of TMB One-Step Substrate Reagent (Item H) to each well. Incubate for 30 minutes at room temperature in the dark with shaking.
9. Add 50 µL of Stop Solution (Item I) to each well. Read at 450 nm immediately.

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### Calculation of Results:

ELISA data analysis: Average the duplicate readings for each sample or positive.

i. Positive Control Hela cells were treated with TPA at 37 °C for 15 min. Solubilize cells at 4 x 10<sup>7</sup> cells/mL in Cell Lysate Buffer. Serial dilutions of cell lysates were analyzed in this ELISA. Please see step 3 of Part VI Reagent Preparation for detail. \ Phospho-Mek1 (Ser217/221) ELISA Kit Protocol 10 Assay Diluent P-1 P-2 P-3 P-4 Control O D = 4 5 0 n m 1.0 0.3 - - - - -

## Application Details

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Positive control dilution series

ii. TPA Stimulation of HeLa Cell Lines HeLa cells were treated or untreated with TPA for 15 min. Cell lysates were analyzed using this phosphoELISA and Western Blot. A). ELISA Anti-Mek1 (Ser217/221) Anti-pan Mek1 O D =4 50 n m 0.0 0.5 1.0 1.5 2.0 TPA Treated HeLa Untreated HeLa B). Western-Blot Analysis \ Phospho-Mek1 (Ser217/221) ELISA Kit Protocol 11 TPA 15 0 15 0 (Min) Anti-phospho-Mek1 (Ser217/221) Anti-pan Mek1 X

Restrictions: For Research Use only

## Handling

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Handling Advice: Avoid repeated freeze- thaw cycles.

Storage: -20 °C

Storage Comment: Upon receipt, the kit should be stored at -20 °C. Please use within 6 months from the date of shipment. After initial use, Wash Buffer Concentrate (Item B), Assay Diluent (Item E), TMB One-Step Substrate Reagent (Item H), HRP-Streptavidin (Item G), Stop Solution (Item I) and Cell Lysate Buffer (Item J) should be stored at 4 °C to avoid repeated freeze-thaw cycles. Return unused wells to the pouch containing desiccant pack, reseal along entire edge and store at -20 °C. Reconstituted Positive Control (Item K) should be stored at -70 °C.

Expiry Date: 6 months

## Publications

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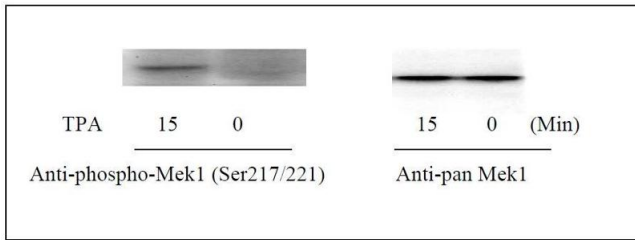
Product cited in: Giuliani, Prete, Graziani, Aquino, Balduzzi, Sugita, Brenner, Iona, Fattorini, Orefici, Porcelli, Bonmassar: "Influence of Mycobacterium bovis bacillus Calmette Guérin on in vitro induction of CD1 molecules in human adherent mononuclear cells." in: **Infection and immunity**, Vol. 69, Issue 12, pp. 7461-70, (2001) ([PubMed](#)).

Hayes, Knight: "Group 1 CD1 genes in rabbit." in: **Journal of immunology (Baltimore, Md. : 1950)**, Vol. 166, Issue 1, pp. 403-10, (2001) ([PubMed](#)).

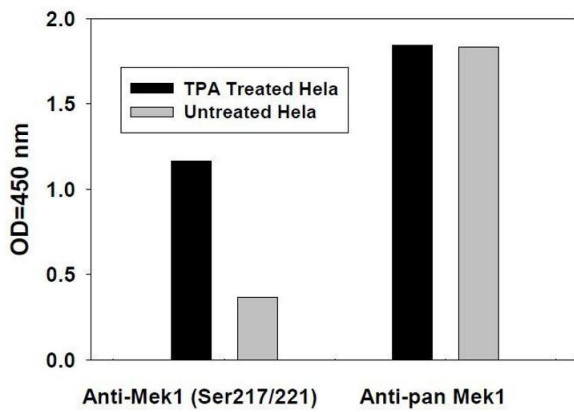
Tentori, Graziani, Porcelli, Sugita, Brenner, Madaio, Bonmassar, Giuliani, Aquino: "Rifampin increases cytokine-induced expression of the CD1b molecule in human peripheral blood monocytes." in: **Antimicrobial agents and chemotherapy**, Vol. 42, Issue 3, pp. 550-4, (1998) ([PubMed](#)).

Western Blotting

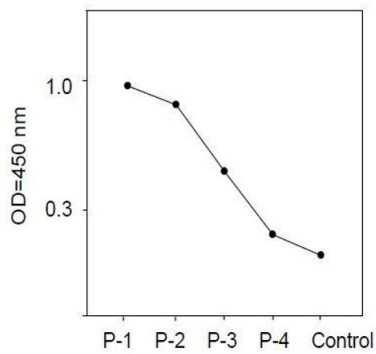
Image 1. Western Blot



A). ELISA



Assay Diluent



Positive control dilution series

Image 2.

Image 3.

Please check the [product details page](#) for more images. Overall 4 images are available for ABIN1981725.