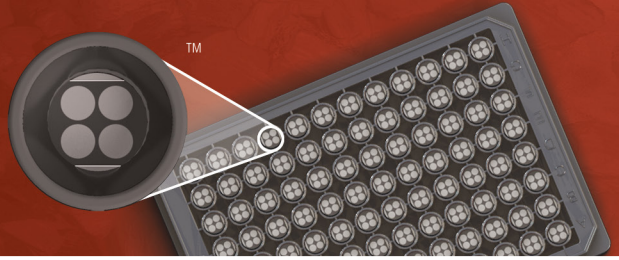
# MSD® Phospho(Ser217/221)/Total MEK1/2 Assay: Whole Cell Lysate Kit

For quantitative determination in human, mouse, and rat whole cell lysate samples



Alzheimer's Disease
BioProcess
Cardiac
Cell Signaling
Clinical Immunology
Cytokines
Hypoxia
Immunogenicity
Inflammation
Metabolic
Oncology
Toxicology
Vascular

## Catalog Numbers

| Phospho (Ser217/221)/ Total MEK1/2: Whole Cell Lysate Kit | |
|---|---|
| Kit size | |
| 1 plate | K15129D-1 |
| 5 plates | K15129D-2 |
| 20 plates | K15129D-3 |

| Phospho-MEK1/2 Whole Cell Lysate Set | |
|---|---|
| 200 µg | C11CW-1 |

## Ordering information

MSD Customer Service
Phone: 1-301-947-2085
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Email: CustomerService@mesoscale.com

## Company Address

MESO SCALE DISCOVERY®
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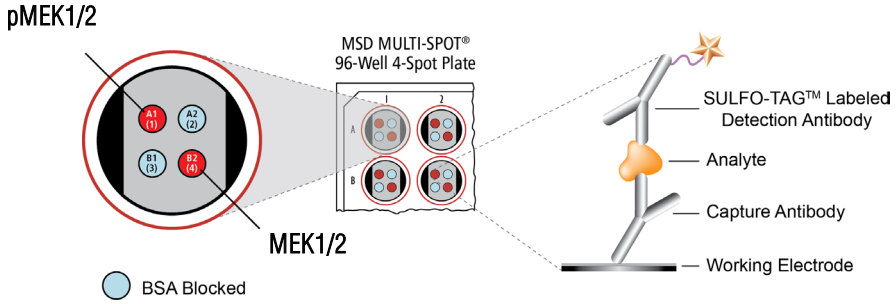
Gaithersburg, MD 20877 USA

www.mesoscale.com®

**For Research Use Only. Not for use in diagnostic procedures.**




**MEK1** and **MEK2** (MAPK/ERK kinases 1 and 2), also known as MKK1 and MKK2, are dual-specificity kinases that function as part of the intracellular mitogen-activated protein kinase signaling cascade activated in response to cellular stimulation by cytokines and growth factors. MEK1 and MEK2 are phosphorylated by the serine/threonine kinases Raf-1, Mos, and MEK kinase on serines 217 and 221. PDK1 has also been shown to phosphorylate MEK1 and MEK2, linking the PI-3 kinase /Akt signaling pathway with ERK activation. Activated MEK1 and MEK2 phosphorylate ERK1 /2 on threonine 202 and tyrosine 204 of ERK1 and threonine 185 and tyrosine 187 of ERK2. Activated ERK1/2 phosphorylate targets in both the nucleus and cytoplasm, exerting a regulatory effect on both transcription and translation. The activation of the Raf/MEK/ERK pathway has been shown to affect development, cell growth and differentiation, cell transformation, and cell cycle progression.

The MSD Phospho (Ser217/221)/ Total MEK1/2 Assay is available on 96-well 4-Spot plates. This datasheet outlines the performance of the assay.

## Typical Data

Representative results for the Phospho (Ser217/221)/ Total MEK1/2 Assay are illustrated below. The signal and ratio values provided below are example data; individual results may vary depending upon the samples tested. Western blot analyses of each lysate type were performed with phospho-MEK1/2 (Ser217/221) and total MEK1/2 antibodies and are shown below for comparison.
Logarithmically growing Jurkat cells were treated with PMA (200 nM; 15 minutes) (positive) or LY294002 (50 µM; 2.5 hours) (negative). Whole cell lysates were added to MSD MULTI-SPOT® 4-Spot plates coated with anti-phospho-MEK1/2 (Ser217/221) and anti-total MEK1/2 antibodies on spatially distinct electrodes within a well. Phosphorylated and total MEK1/2 were detected with anti-total MEK1 and anti-total MEK2 antibodies conjugated with MSD SULFO-TAG™ reagent.

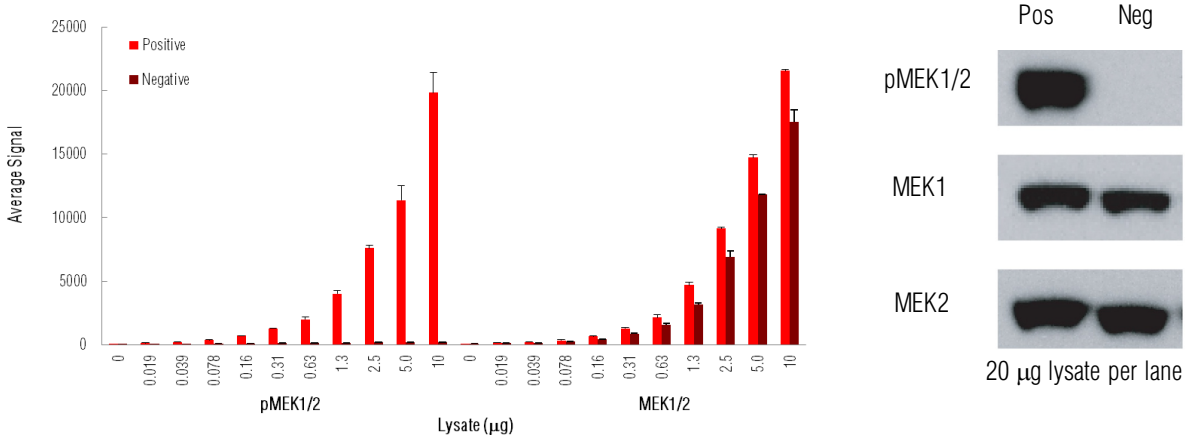



**Fig. 1:** Sample data generated with the MULTI-SPOT® Phospho (Ser217/221)/ Total MEK1/2 Assay. Increased signal for phosphorylated MEK1/2 was observed with only pMEK1/2 positive cell lysate. Total MEK1/2 signal increased throughout the titration of both pMEK1/2 positive and negative cell lysates. The Phospho (Ser217/221)/ Total MEK1/2 Assay provides a quantitative measure of the data obtained with the traditional Western blot.

## Lysate Titration

Data for pMEK1/2 positive and negative Jurkat cell lysates using the MULTI-SPOT Phospho (Ser217/221)/ Total MEK1/2 Assay are presented below.

| | Lysate | Positive | | | Negative | | | P/N |
|---|---|---|---|---|---|---|---|---|
| | (µg) | Average Signal | StdDev | %CV | Average Signal | StdDev | %CV | |
| pMEK1/2 | 0 | 20 | 10 | 50.5 | 20 | 10 | 50.5 | |
| | 0.019 | 119 | 12 | 10.1 | 26 | 3 | 10.9 | 4.6 |
| | 0.039 | 203 | 15 | 7.3 | 27 | 2 | 8.0 | 7.6 |
| | 0.078 | 357 | 42 | 11.7 | 43 | 21 | 49.3 | 8.3 |
| | 0.16 | 700 | 18 | 2.6 | 68 | 14 | 20.8 | 10 |
| | 0.31 | 1271 | 10 | 0.8 | 104 | 8 | 8.2 | 12 |
| | 0.63 | 2000 | 192 | 9.6 | 133 | 1 | 0.5 | 15 |
| | 1.3 | 4012 | 247 | 6.2 | 149 | 5 | 3.3 | 27 |
| | 2.5 | 7597 | 229 | 3.0 | 168 | 3 | 1.7 | 45 |
| | 5.0 | 11375 | 1115 | 9.8 | 199 | 12 | 6.1 | 57 |
| | 10 | 19844 | 1583 | 8.0 | 215 | 1 | 0.7 | 92 |
| MEK1/2 | 0 | 34 | 13 | 38.7 | 34 | 13 | 38.7 | |
| | 0.019 | 137 | 1 | 0.5 | 100 | 13 | 13.5 | 1.4 |
| | 0.039 | 201 | 4 | 2.1 | 142 | 4 | 2.5 | 1.4 |
| | 0.078 | 327 | 42 | 12.8 | 229 | 18 | 7.7 | 1.4 |
| | 0.16 | 645 | 25 | 3.9 | 440 | 12 | 2.7 | 1.5 |
| | 0.31 | 1275 | 94 | 7.4 | 865 | 23 | 2.6 | 1.5 |
| | 0.63 | 2135 | 218 | 10.2 | 1560 | 112 | 7.2 | 1.4 |
| | 1.3 | 4678 | 209 | 4.5 | 3180 | 127 | 4.0 | 1.5 |
| | 2.5 | 9152 | 109 | 1.2 | 6924 | 438 | 6.3 | 1.3 |
| | 5.0 | 14728 | 227 | 1.5 | 11828 | 12 | 1.0 | 1.2 |
| | 10 | 21574 | 77 | 1.0 | 17512 | 981 | 5.6 | 1.2 |

## MSD Advantage

- **Multiplexing:** Multiple analytes can be measured in one well using typical sample amounts of 25 µg/well or less without compromising speed or performance
- **Large dynamic range**: Linear range of up to five logs enables the measurement of native levels of biomarkers in normal and diseased samples without multiple dilutions
- **Minimal background:** The stimulation mechanism (electricity) is decoupled from the signal (light)
- **Simple protocols:** Only labels near the electrode surface are detected, enabling no-wash assays
- **Flexibility:** Labels are stable, non-radioactive, and conveniently conjugated to biological molecules
- **High sensitivity and precision:** Multiple excitation cycles of each label enhance light levels and improve sensitivity

For a complete list of products, please visit our website at www.mesoscale.com