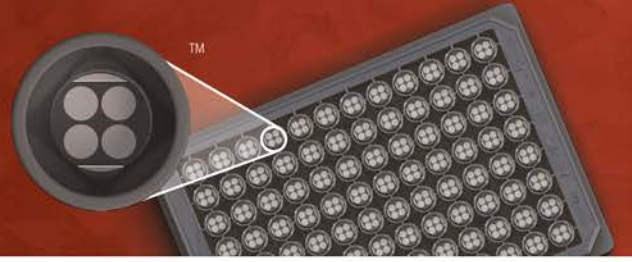
MSD® Phospho-ERK1/2 (Thr202/Tyr204; Thr185/Tyr187) Assay: Whole Cell Lysate Kit

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-ERK1/2 (Thr202/Tyr204;Thr185/Tyr187) Assay: Whole Cell Lysate Kit	
Kit size	
1 plate	K151DWD-1
5 plates	K151DWD-2
20 plates	K151DWD-3

Phospho-ERK1/2 Whole Cell Lysate Set	
200 µg	C11CM-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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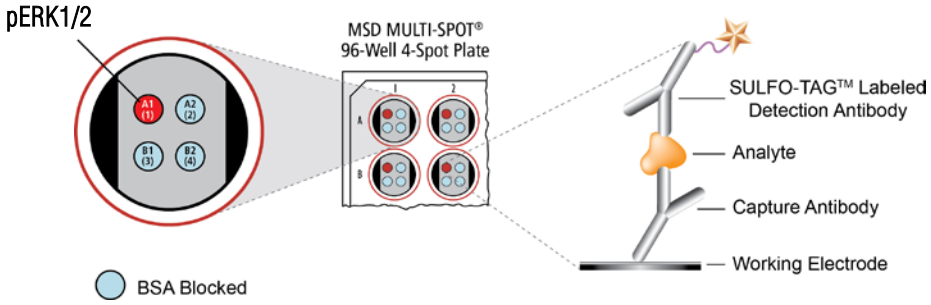

ERK (Extracellular signal Regulated Kinases) 1 and 2, are proline-directed serine/threonine protein kinases, also known as p44 MAPK (Mitogen-Activated Protein Kinase) and p42 MAPK, respectively. These closely-related kinase isoforms are activated by various extracellular signals including growth factors, cytokines, hormones, and neurotransmitters. The activation occurs through the phosphorylation of threonine 202 and tyrosine 204 of ERK1 and threonine 185 and tyrosine 187 of ERK2 by the upstream kinases MEK1 and MEK2. Activated ERK1/2 phosphorylates targets in both the cytosol and the nucleus. Cytoplasmic substrates for ERK include SOS, MNK1/2, and the 90 kDa ribosomal protein S6 kinases (RSKs). Nuclear translocation of activated ERK affects gene expression and DNA replication by the phosphorylation of MSK 1 and 2 and the transcription factors Elk-1, Sap1, and Sap2.

The MSD Phospho-ERK1/2 (Thr202/Tyr204; Thr185/Tyr187) Assay is available on 96-well 4-Spot plates. This datasheet outlines the performance of the assay.

Typical Data

Representative results for the Phospho-ERK1/2 (Thr202/Tyr204; Thr185/Tyr187) 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-ERK1/2 (Thr202/Tyr204; Thr185/Tyr187) and total ERK1/2 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-ERK1/2 (Thr202/Tyr204; Thr185/Tyr187) antibody on one of the four spatially distinct electrodes within a well. Phosphorylated ERK1/2 was detected with anti-total ERK1/2 antibody conjugated with MSD SULFO-TAG™ reagent.

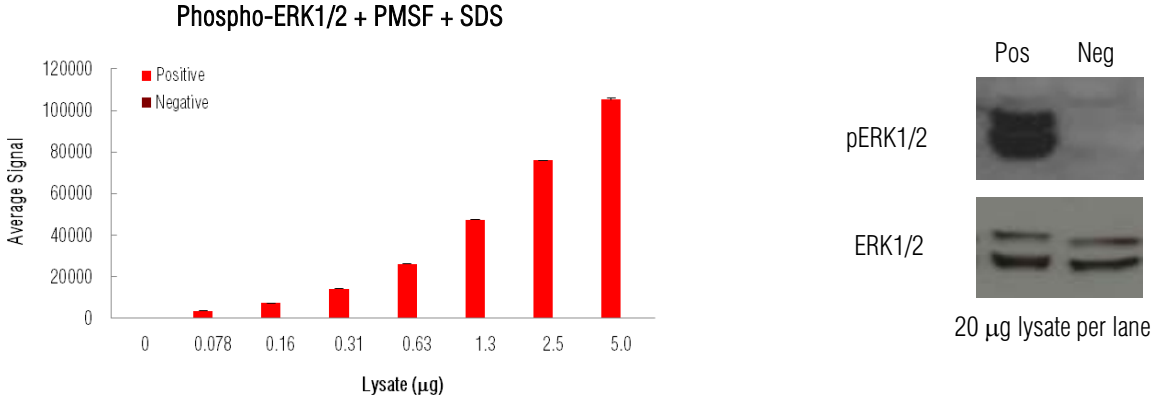

Fig. 1: Sample data generated with the MULTI-ARRAY® Phospho-ERK1/2 (Thr202/Tyr204; Thr185/Tyr187) Assay. Increased signal is observed with the titration of pERK1/2 positive cell lysate. Signal for negative lysate remains low throughout the titration. The Phospho-ERK1/2 (Thr202/Tyr204; Thr185/Tyr187) Assay provides a quantitative measure of the data obtained with the traditional Western blot.

Lysate Titration

Data for pERK1/2 positive and negative Jurkat cell lysates using the MULTI-ARRAY Phospho-ERK1/2 (Thr202/Tyr204; Thr185/Tyr187) Assay are presented below.

Lysate (µg)	Positive			Negative			P/N
	Average Signal	StdDev	%CV	Average Signal	StdDev	%CV	
0	80	16	19.9	85	11	12.9	
0.078	3694	211	5.7	80	7	8.4	46
0.16	7458	559	7.5	84	6	7.2	89
0.31	14310	532	3.7	91	4	4.2	158
0.63	26310	1019	3.9	114	3	2.3	231
1.3	47412	1611	3.4	133	4	3.0	356
2.5	75982	2453	3.2	141	12	8.4	540
5.0	105168	3261	3.1	150	10	6.4	701

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

References using MSD's platform for the measurement of phosphoproteins

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