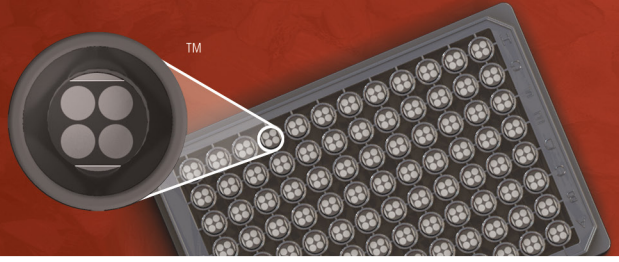
MSD® Total VASP Assay Whole Cell Lysate Kit

For quantitative determination in human whole cell lysate samples



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

Catalog Numbers

Total VASP Assay: Whole Cell Lysate Kit	
Kit size	
1 plate	K151FHD-1
5 plates	K151FHD-2
20 plates	K151FHD-3

PhosphoVASP (Ser157/239) Whole Cell Lysate Set	
200 µg	C11FG-1

Ordering information

MSD Customer Service
Phone: 1-301-947-2085
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Company Address

MESO SCALE DISCOVERY®
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Gaithersburg, MD 20877 USA

www.mesoscale.com®

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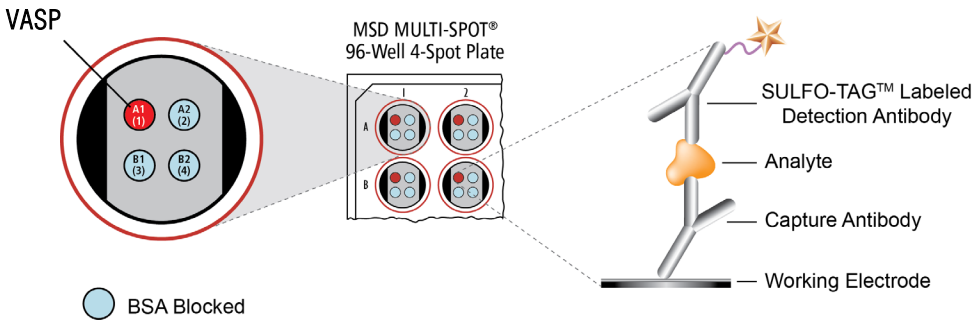

Vasodilator-stimulated phosphoprotein (VASP) is an adaptor protein which belongs to the Ena/VASP family of proteins and contains an EVH1 domain, EVH2 domain, and a proline rich region which binds to SH3 and WW domain containing proteins, and functions in cell motility, axon guidance, cell adhesion, endocytosis, and intracellular pathogen motility.[1] VASP binds to the growing barbed ends of actin filaments preventing capping proteins from binding and terminating actin elongation.[2] VASP is phosphorylated at Ser157 (PKA phosphorylation site), Ser239 (PKG phosphorylation site), and Thr278.[3] Phosphorylation is believed to inhibit VASP interactions with actin and decrease its anti-capping activity.[4] Due to its involvement in actin elongation, cell motility, and the signal transduction cascades, VASP plays a role in a variety of normal processes as well as in many diseases, such as: cancer, arteriosclerosis, nephritis, thrombosis, and cardiomyopathy.[5]

The MSD Total VASP Assay is available on 96-well 4-Spot plates. This datasheet outlines the performance of the assay.

Typical Data

Representative results for the Total VASP 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-VASP (Ser157), phospho-VASP (Ser239), and total VASP antibodies and are shown below for comparison.
Serum deprived A431 cells (negative) were treated with forskolin (100 µM) and Calyculin A (100 nM) for 1 hour (positive). Whole cell lysates were added to MSD MULTI-SPOT® 4-Spot plates coated with anti-total VASP antibody on one of the four spatially distinct electrodes per well. Total VASP was detected with anti-total VASP antibody labeled with MSD SULFO-TAG™ reagent.

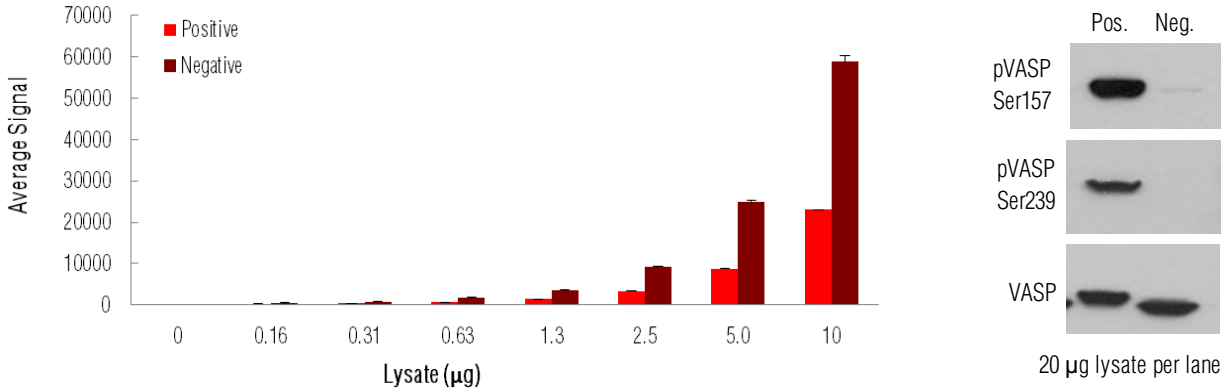

Fig. 1: Sample data generated with the MULTI-ARRAY® Total VASP Assay. Increased signal is observed with the titration of both pVASP positive and negative cell lysates. The Total VASP Assay provides a quantitative measure of the data obtained with the traditional Western blot.

Lysate Titration

Data for pVASP positive and negative A431 cell lysates using the MULTI-ARRAY Total VASP Assay are presented below.

Lysate (µg)	Positive			Negative			P/N
	Average Signal	StdDev	%CV	Average Signal	StdDev	%CV	
0	116	10	8.3	116	10	8.3	
0.16	282	16	5.5	455	39	8.6	0.6
0.31	433	13	3.0	858	69	8.1	0.5
0.63	704	37	5.2	1727	86	5.0	0.4
1.3	1415	69	4.9	3486	81	2.3	0.4
2.5	3330	39	1.2	9150	283	3.1	0.4
5.0	8823	165	1.9	24984	352	1.4	0.4
10	23029	1241	5.4	58811	1434	2.4	0.4

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

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References

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2. Bear JE, Svitkina TM, Krause M, Schafer DA, Loureiro JJ, Strasser GA, Maly IV, Chaga OY, Cooper JA, Borisy GG, Gertler FB. Antagonism between Ena/VASP proteins and actin filament capping regulatesfibroblast motility. Cell 2002 May 17;109(4):509-21.
3. Smolenski A, Bachmann C, Reinhard K, Hönig-Liedl P, Jarchau T, Hoschuetzky H, Walter U. Analysis and regulation of vasodilator-stimulated phosphoprotein serine 239 phosphorylation in vitro and in intact cells using a phosphospecific monoclonal antibody. J Biol Chem 1988 Aug 7;273(32):20029-35.
4. Harbeck B, Hüttelmaier S, Schluter K, Jockusch BM, Illenberger S. Phosphorylation of the vasodilator-stimulated phosphoprotein regulates its interaction with actin. J Biol Chem 2000 Oct 6;275(40):30817-25.
5. Pula G, Krause M. Role of Ena/VASP proteins in homeostasis and disease. Handb Exp Pharmacol. 2008;(186):39-65.