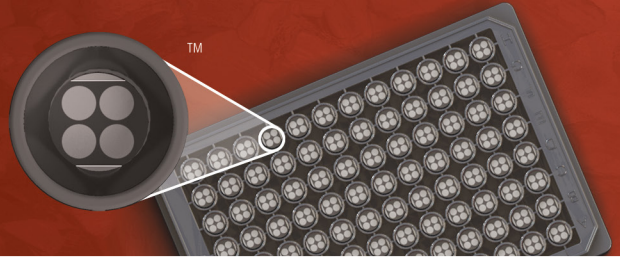
MSD® Phospho(Ser82)/Total HSP27 Assay Whole Cell Lysate Kit

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

Phospho(Ser82)/Total HSP27 Assay: Whole Cell Lysate Kit	
Kit size	
1 plate	K15144D-1
5 plates	K15144D-2
20 plates	K15144D-3

Phospho-HSP27 Whole Cell Lysate Set	
200 µg	C11CS-1

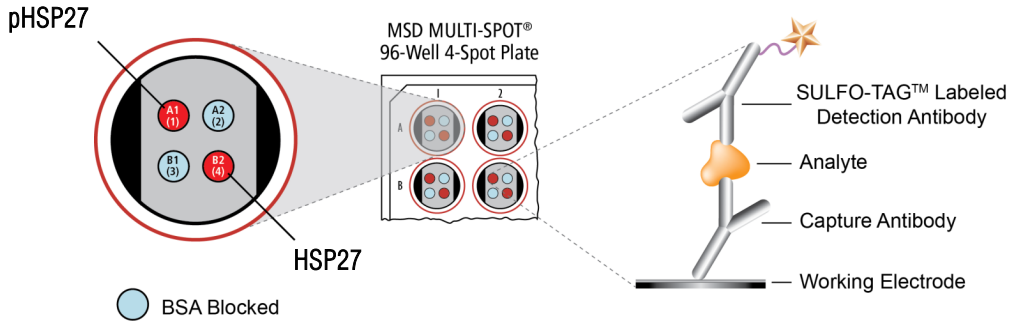
Ordering information

MSD Customer Service
Phone: 1-301-947-2085
Fax: 1-301-990-2776
Email: CustomerService@mesoscale.com

Company Address

MESO SCALE DISCOVERY®
A division of
Meso Scale Diagnostics, LLC.
9238 Gaither Road
Gaithersburg, MD 20877 USA

www.mesoscale.com®

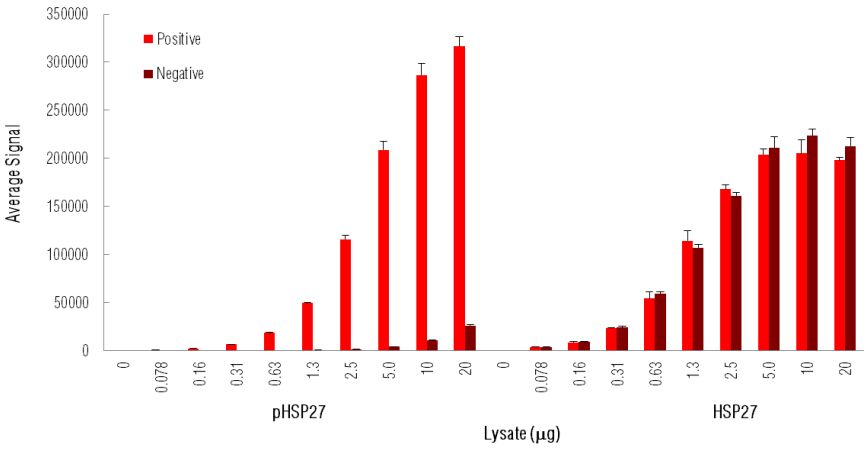


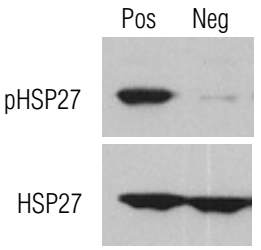
HSP27 (Heat Shock Protein 27) is one of the smaller members of the ubiquitous heat shock protein family whose expression is regulated by cellular stresses, growth factors, and inflammatory cytokines. The function of heat shock protein overexpression is to increase cellular resistance to temperature and oxidative shock, chemicals, and other environmental insults. In addition to changes in expression, HSP27 is phosphorylated on several serines (15, 78, 82) during the stress response. HSP27 is phosphorylated by MAPKAP kinase 2 during induction of the p38 MAP kinase pathway. Following phosphorylation, HSP27 undergoes oligomeric reorganization to facilitate its molecular chaperone, protein scaffolding, and cellular protective functions. HSP27 also functions to inhibit translation during heat shock by binding to initiation factor eIF4G. Due to the diversity of its protein interactions, HSP27 has been implicated in the control of cell growth, prevention of apoptosis, and smooth muscle cell migration and dysfunction.

The MSD Phospho(Ser82)/Total HSP27 Assay is available on 96-well 4-Spot plates. This datasheet outlines the performance of the assay.

Typical Data

Representative results for the Phospho(Ser82)/Total HSP27 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-HSP27 (Ser82) and total HSP27 antibodies and are shown below for comparison.
Confluent HeLa cell monolayers (negative) were treated with sorbitol (0.4 M; 30 minutes) (positive). Whole cell lysates were added to MSD MULTI-SPOT® 4-Spot plates coated with anti-phospho-HSP27 (Ser82) antibody and anti-total HSP27 antibody on spatially distinct electrodes within a well. Phosphorylated and total HSP27 were detected with anti-total HSP27 antibody conjugated with MSD SULFO-TAG™ reagent.





20 µg lysate per lane

Fig. 1: Sample data generated with the MULTI-SPOT Phospho(Ser82)/Total HSP27 Assay. Increased signal for phosphorylated HSP27 was observed with pHSP27 positive cell lysate. Total HSP27 signal increased throughout the titration of both pHSP27 positive and negative cell lysates. The Phospho(Ser82)/Total HSP27 Assay provides a quantitative measure of the data obtained with the traditional Western blot.

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

Lysate Titration

Data for pHSP27 positive and negative HeLa cell lysates using the MULTI-SPOT Phospho(Ser82)/Total HSP27 Assay are presented below.

	Lysate (µg)	Positive			Negative			P/N
		Average Signal	StdDev	%CV	Average Signal	StdDev	%CV	
pHSP27	0	41	13	32.5	38	13	35.3	
	0.078	980	45	4.6	86	8	8.8	11
	0.16	2455	149	6.1	103	1	1.3	24
	0.31	6878	102	1.5	184	10	5.4	37
	0.63	18842	628	3.3	358	5	1.3	53
	1.3	49730	916	1.8	686	70	10.2	73
	2.5	115841	4493	3.9	1739	50	2.9	67
	5.0	208793	9044	4.3	4349	171	3.9	48
	10	286766	11759	4.1	11130	186	1.7	26
	20	316388	9996	3.2	26274	1238	4.7	12
HSP27	0	40	4	10.2	36	12	32.0	
	0.078	3930	71	1.8	3789	247	6.5	1.0
	0.16	8734	871	10.0	9435	787	8.3	0.9
	0.31	23697	511	2.2	24479	1310	5.3	1.0
	0.63	54670	6688	12.2	59068	2268	3.8	0.9
	1.3	114627	10706	9.3	107179	3331	3.1	1.1
	2.5	167854	4634	2.8	161211	3704	2.3	1.0
	5.0	204013	5628	2.8	211127	11174	5.3	1.0
	10	205208	13912	6.8	223728	6733	3.0	0.9
	20	198289	3231	1.6	212900	9079	4.3	0.9

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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