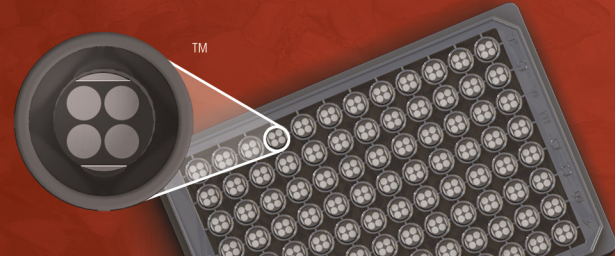


# MSD® Phospho(Ser78)/Total HSP27 Assay Whole Cell Lysate Kit

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(Ser78)/Total HSP27 Assay: Whole Cell Lysate Kit

Kit size

1 plate K15128D-1

5 plates K15128D-2

20 plates K15128D-3

Phospho-HSP27 Whole Cell Lysate Set

200 µg C11CS-1

## Ordering information

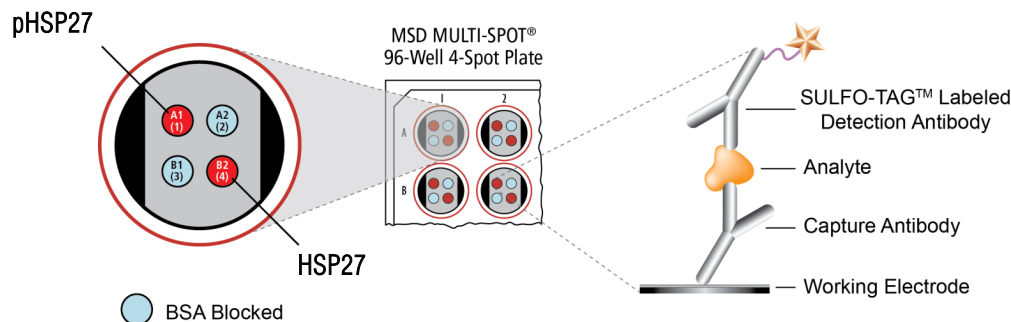
MSD Customer Service  
Phone: 1-301-947-2085  
Fax: 1-301-990-2776  
Email: CustomerService@mesoscale.com

## Company Address

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Meso Scale Diagnostics, LLC.  
9238 Gaither Road  
Gaithersburg, MD 20877 USA

www.mesoscale.com®

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



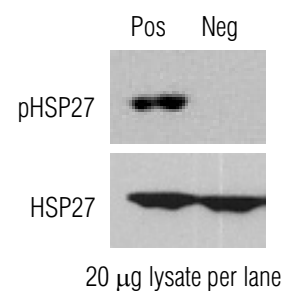
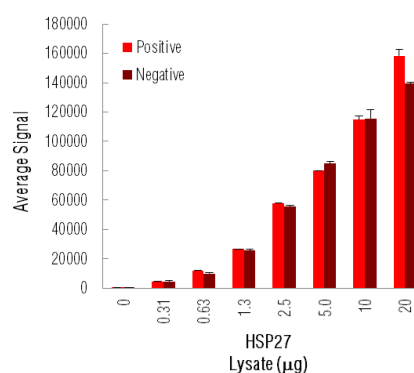
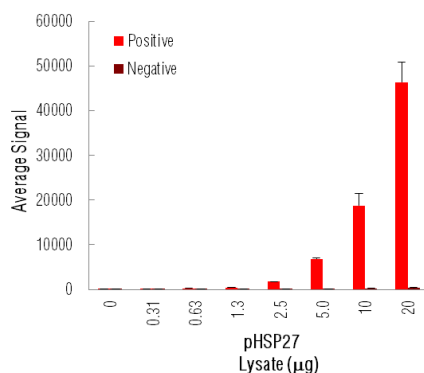
**HSP27 (Heat Shock Protein 27)** is one of the smaller members of the ubiquitous heat shock protein family whose expression is regulated by cellular stresses, growth factors, and inflammatory cytokines. The function of heat shock protein overexpression is to increase cellular resistance to temperature 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(Ser78)/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(Ser78)/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 (Ser78) 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 (Ser78) 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.



**Fig. 1:** Sample data generated with the MULTI-SPOT Phospho(Ser78)/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(Ser78)/Total HSP27 Assay provides a quantitative measure of the data obtained with the traditional Western blot.

# MSD Phosphoprotein Assays

## Lysate Titration

Data for pHSP27 positive and negative HeLa cell lysates using the MULTI-SPOT Phospho(Ser78)/Total HSP27 Assay are presented below.

	Lysate (µg)	Positive			Negative			P/N
		Average Signal	StdDev	%CV	Average Signal	StdDev	%CV	
pHSP27	0	77	9	11.7	42	1	2.4	
	0.31	119	1	0.8	30	2	6.7	4.0
	0.63	196	28	14.3	37	7	18.9	5.3
	1.3	402	1	0.2	48	3	6.3	8.4
	2.5	1744	23	1.3	146	16	11.0	12
	5.0	6831	157	2.3	176	8	4.5	39
	10	18788	2684	14.3	200	22	11.0	94
	20	46333	4539	9.8	369	27	7.3	126
HSP27	0	54	6	11.1	77	9	11.7	
	0.31	4349	290	6.7	4514	731	16.2	1.0
	0.63	11908	587	4.9	9741	817	8.4	1.2
	1.3	26715	1864	7.0	25684	843	3.3	1.0
	2.5	57764	3094	5.4	55506	1058	1.9	1.0
	5.0	79963	9991	12.5	84964	1094	1.3	0.9
	10	114879	15191	13.2	115576	5733	5.0	1.0
	20	158305	10361	6.5	139302	983	0.7	1.1

## 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](http://www.mesoscale.com)

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