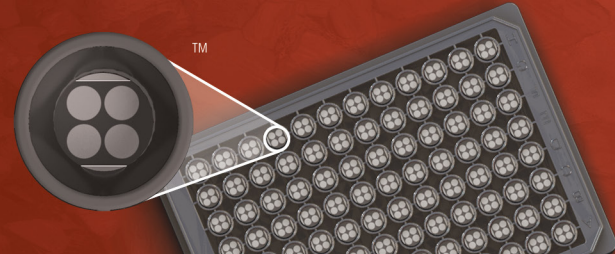


# MSD® Phospho(Ser15)/Total HSP27 Assay Whole Cell Lysate Kit

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(Ser15)/Total HSP27 Assay: Whole Cell Lysate Kit	
Kit size	
1 plate	K15110D-1
5 plates	K15110D-2
20 plates	K15110D-3

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

## Ordering information

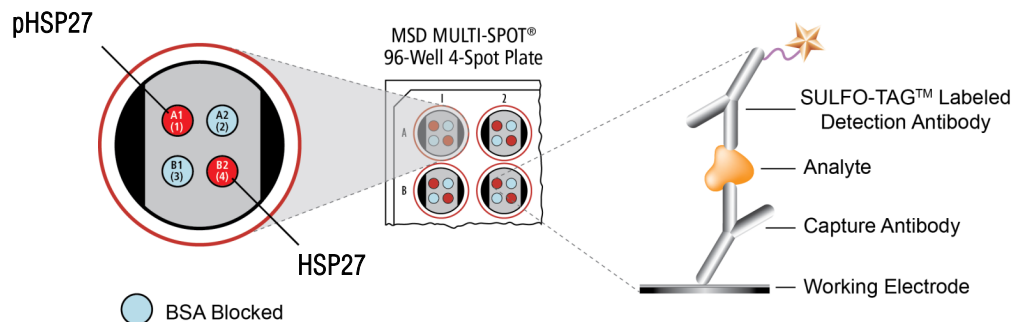
MSD Customer Service  
Phone: 1-301-947-2085  
Fax: 1-301-990-2776  
Email: CustomerService@mesoscale.com

## Company Address

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

[www.mesoscale.com](http://www.mesoscale.com)®

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



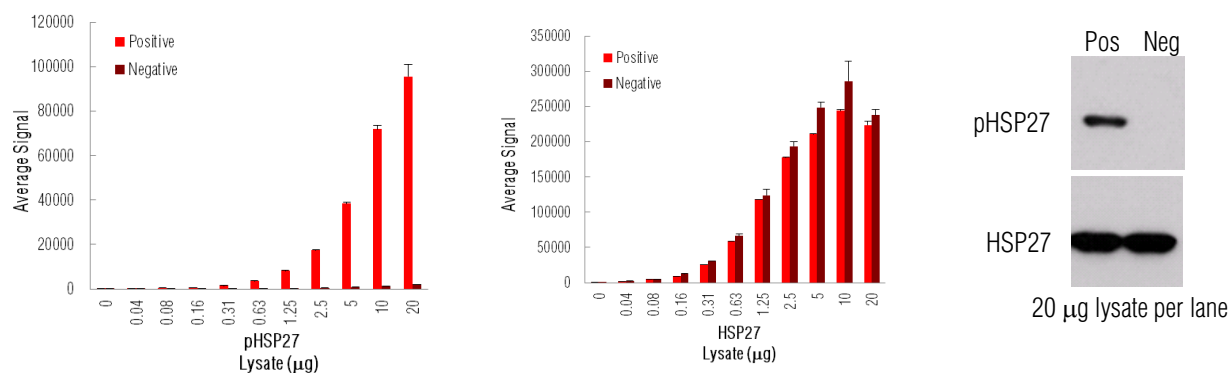
**HSP27 (Heat Shock Protein 27)** is one of the smaller members of the ubiquitous heat shock protein family whose expression is regulated by cellular stresses, growth factors, and inflammatory cytokines. The function of heat shock protein overexpression is to increase cellular resistance to temperature 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(Ser15)/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(Ser15)/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 (Ser15) 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 (Ser15) 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(Ser15)/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(Ser15)/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(Ser15)/Total HSP27 Assay are presented below.

	Lysate (µg)	Positive			Negative			P/N
		Average Signal	StdDev	%CV	Average Signal	StdDev	%CV	
pHSP27	0	134	23	16.9	89	13	14.1	
	0.04	249	27	10.9	85	16	19.2	2.9
	0.08	396	44	11.1	103	5	5.0	3.9
	0.16	621	62	10.0	105	11	10.1	5.9
	0.31	1382	85	6.2	156	17	10.9	8.9
	0.63	3526	247	7.0	204	40	19.8	17
	1.25	8106	318	3.9	304	11	3.7	27
	2.5	17396	398	2.3	442	37	8.4	39
	5	38363	684	1.8	788	62	7.9	49
	10	71789	1758	2.4	1251	99	7.9	57
	20	95496	5590	5.9	2013	131	6.5	47
HSP27	0	83	12	14.6	77	1	0.9	
	0.04	2055	107	5.2	2161	186	8.6	1.0
	0.08	5116	451	8.8	5032	208	4.1	1.0
	0.16	9283	796	8.6	12511	671	5.4	0.7
	0.31	25606	449	1.8	30372	874	2.9	0.8
	0.63	58557	1327	2.3	66259	2797	4.2	0.9
	1.25	118100	4379	3.7	123736	8306	6.7	1.0
	2.5	177435	3264	1.8	193603	6107	3.2	0.9
	5	210726	14525	6.9	248834	7689	3.1	0.8
	10	243990	12692	5.2	286242	28004	9.8	0.9
	20	223620	14326	6.4	237919	7763	3.3	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

For a complete list of products, please visit our website at [www.mesoscale.com](http://www.mesoscale.com)

MESO SCALE DISCOVERY, MESO SCALE DIAGNOSTICS, WWW.MESOSCALE.COM, MSD, MSD (DESIGN), DISCOVERY WORKBENCH, QUICKPLEX, MULTI-ARRAY, MULTI-SPOT, SULFO-TAG, SECTOR, SECTOR HTS, SECTOR PR, 4-SPOT (DESIGN) and SPOT THE DIFFERENCE are trademarks and/or service marks of Meso Scale Diagnostics, LLC.  
© 2011 Meso Scale Diagnostics, LLC. All rights reserved.

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

