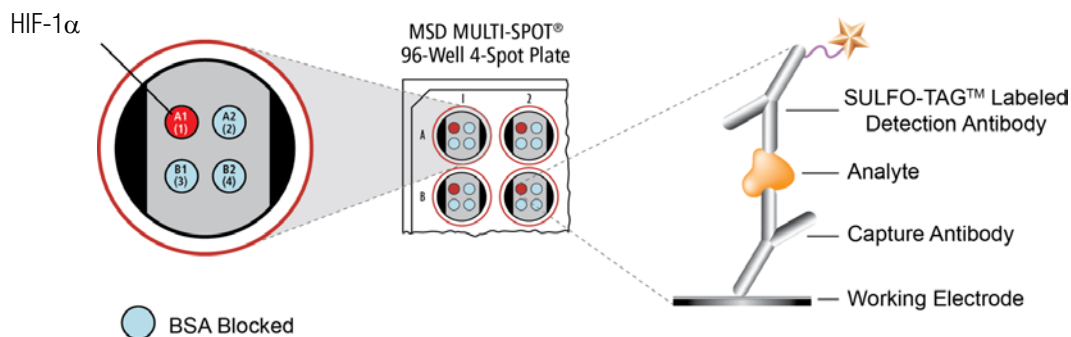


# MSD<sup>®</sup> Total HIF-1 $\alpha$ Assay Whole Cell Lysate Kit

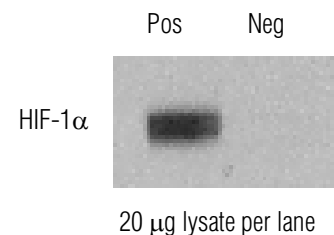
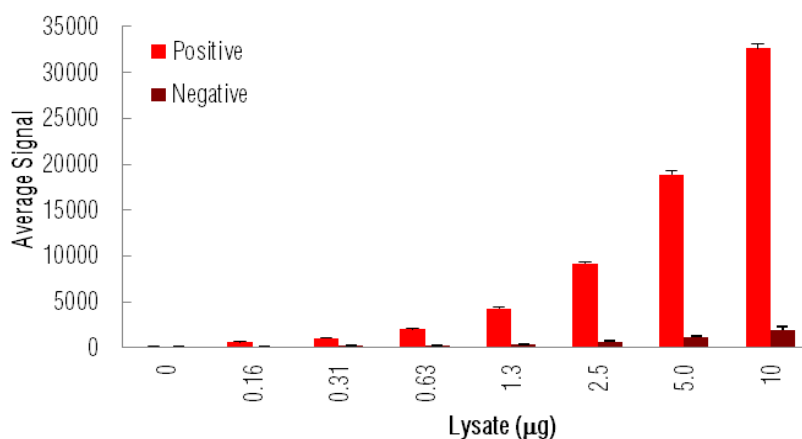
For quantitative determination in human, mouse, and rat whole cell lysate samples



The MSD Total HIF-1 $\alpha$  Assay is available on 96-well 4-spot plates. This datasheet outlines the performance of the assay.

## Typical Data

Representative results for the Total HIF-1 $\alpha$  are illustrated below. The signal and ratio values provided below are example data; individual results may vary depending upon the samples tested. Western blot analysis of each lysate type was performed with total HIF-1 $\alpha$  antibody and is shown for comparison. Confluent HeLa cells (negative) were treated with CoCl<sub>2</sub> (150  $\mu$ g/mL; 16 hours) (positive). Whole cell lysates were added to MSD MULTI-SPOT<sup>®</sup> 4-spot plates coated with anti-total HIF-1 $\alpha$  antibody on one of the four spatially distinct electrodes per well. Total HIF-1 $\alpha$  was detected with anti-total HIF-1 $\alpha$  antibody conjugated with MSD SULFO TAG<sup>™</sup> reagent.



**Fig. 1:** Sample data generated with MULTI-ARRAY<sup>®</sup> Total HIF-1 $\alpha$  Assay. Increased signal is observed with the titration of HIF-1 $\alpha$  positive cell lysates. Signal for the negative lysate remains low throughout the titration. The Total HIF-1 $\alpha$  Assay provides a quantitative measure of the data obtained with the traditional Western blot.

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

## Catalog Numbers

Total HIF-1 $\alpha$ Whole Cell Lysate Kit	
Kit size	
1 plate	K150DKD-1
5 plates	K150DKD-2
20 plates	K150DKD-3

HIF-1 $\alpha$ Whole Cell Lysate Set	
200 $\mu$ g	C11DK-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<sup>®</sup>  
A division of  
Meso Scale Diagnostics, LLC.  
9238 Gaither Road  
Gaithersburg, MD 20877 USA

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

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

# MSD Phosphoprotein Assays

## Lysate Titration

Data for positive and negative HeLa cell lysates using the MULTI-ARRAY Total HIF-1 $\alpha$  are presented below.

Lysate ( $\mu$ g)	Positive			Negative			P/N
	Average Signal	StdDev	%CV	Average Signal	StdDev	%CV	
0	124	13	10.5	115	12	10.4	
0.16	597	51	8.5	144	14	9.7	4.1
0.31	1035	51	4.9	185	8	4.3	5.6
0.63	2028	81	4.0	272	19	7.0	7.5
1.3	4296	119	2.8	396	21	5.3	11
2.5	9186	137	1.5	672	58	8.6	14
5.0	18904	362	1.9	1192	101	8.5	16
10	32609	456	1.4	1937	318	16.4	17

## MSD Advantage

- **Multiplexing:** Multiple analytes can be measured in one well using typical sample amounts of 25  $\mu$ g/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)

## References using MSD's platform for the measurement of phosphoproteins

1. Belibi F, Zafar I, Ravichandran K, Segvic AB, Jani A, Ljubanovic DG, Edelstein CL. Hypoxia-inducible factor 1 {alpha} (HIF-1 {alpha}) and autophagy in polycystic kidney disease (PKD). *Am J Physiol Renal Physiol*. 2011 May;300(5):F1235-43.
2. Eccles SA, Massey A, Raynaud FI, Sharp SY, Box G, Valenti M, Patterson L, de Haven Brandon A, Gowan S, Boxall F, Aherne W, Rowlands M, Hayes A, Martins V, Urban F, Boxall K, Prodromou C, Pearl L, James K, Matthews TP, Cheung KM, Kalusa A, Jones K, McDonald E, Barril X, Brough PA, Cansfield JE, Dymock B, Drysdale MJ, Finch H, Howes R, Hubbard RE, Surgenor A, Webb P, Wood M, Wright L, Workman P. NVP-AUY922: a novel heat shock protein 90 inhibitor active against xenograft tumor growth, angiogenesis, and metastasis. *Cancer Res*. 2008 Apr 15;68(8):2850-60.
3. Koivunen P, Tiainen P, Hyvärinen J, Williams KE, Sormunen R, Klaus SJ, Kivirikko KI, Myllyharju J. An endoplasmic reticulum transmembrane prolyl 4-hydroxylase is induced by hypoxia and acts on hypoxia-inducible factor alpha. *J Biol Chem*. 2007 Oct 19; 282(42):30544-52.
4. Martin SE, Jones TL, Thomas CL, Lorenzi PL, Nguyen DA, Runfola T, Gunsior M, Weinstein JN, Goldsmith PK, Lader E, Huppi K, Caplen NJ. Multiplexing siRNAs to compress RNAi-based screen size in human cells. *Nucleic Acids Res*. 2007;35(8):e57.
5. Gowan SM, Hardcastle A, Hallsworth AE, Valenti MR, Hunter LJ, de Haven Brandon AK, Garrett MD, Raynaud F, Workman P, Aherne W, Eccles SA. Application of meso scale technology for the measurement of phosphoproteins in human tumor xenografts. *Assay Drug Dev Technol*. 2007 Jun;5(3):391-401.

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.

