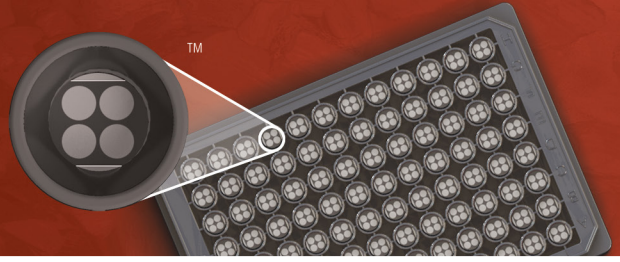
MSD® Phospho-PDGFR-β (Tyr751) Assay Whole Cell Lysate Kit

For quantitative determination in human and mouse whole cell lysate samples



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

Catalog Numbers

Phospho-PDGFR-β Whole Cell Lysate Kit	
Kit size	
1 plate	K150DVD-1
5 plates	K150DVD-2
20 plates	K150DVD-3

Phospho-PDGFR-β Whole Cell Lysate Set	
200 µg	C11DV-1

Ordering information

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

Company Address

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

www.mesoscale.com®

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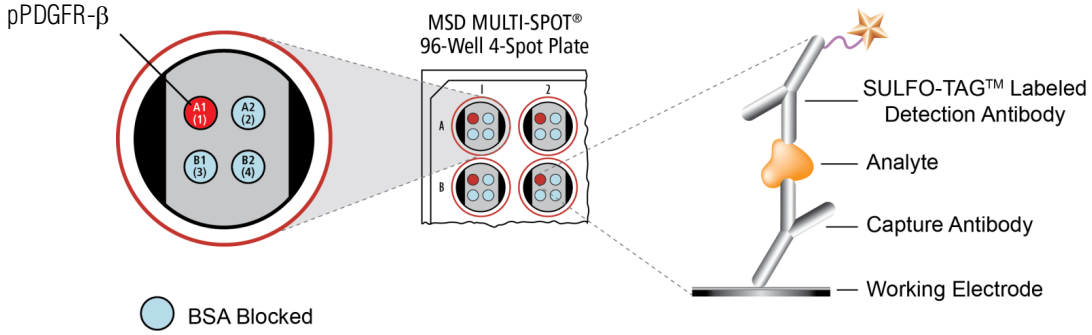

Platelet-derived growth factor receptor (PDGFR) exists as two closely related receptor tyrosine kinases, PDGFR-α and PDGFR-β. PDGFR consists of five extracellular Ig-like domains involved in ligand binding, a single transmembrane domain, and two intracellular tyrosine kinase domains split by a kinase insert region. Upon ligand binding, PDGFR dimerizes into one of three forms (α/α, α/β, or β/β) in response to the isoform of the PDGF ligand. Dimerization of the receptor results in autophosphorylation of multiple tyrosines (579, 581, 716, 740, 751, 763, 771, 775, 857, 1009, and 1021) in the cytoplasmic domain, recruiting and binding many cytoplasmic signaling and adaptor proteins containing SH2 domains. These proteins include Src, Shc, SHP2, Grb2, PI-3K, Nck, RasGAP, and PLC-γ, and upon binding, activate cellular signaling pathways involving SAPK/JNK, PKC, Ras/MAPK, and Akt/PKB. The PDGF/PDGFR cellular signaling system is essential for the embryonic development of various tissue types and is also important in angiogenesis and wound healing. The characterization of PDGFR overexpression in many solid tumor types and its role in angiogenesis make it an attractive target for anti-cancer therapeutic development.

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

Typical Data

Representative results for the Phospho-PDGFR-β 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-PDGFR-β and total PDGFR-β antibodies and are shown below for comparison. Serum-deprived NIH3T3 cells (negative) were treated with PDGF-BB (50 ng/mL) for 10 minutes (positive). Whole-cell lysates were added to MSD MULTI-SPOT® 4-Spot plates coated with anti-phospho-PDGFR-β antibody on one of the four spatially distinct electrodes per well. Phosphorylated PDGFR-β was detected with anti-total PDGFR-β antibody conjugated with MSD SULFO-TAG™ reagent.

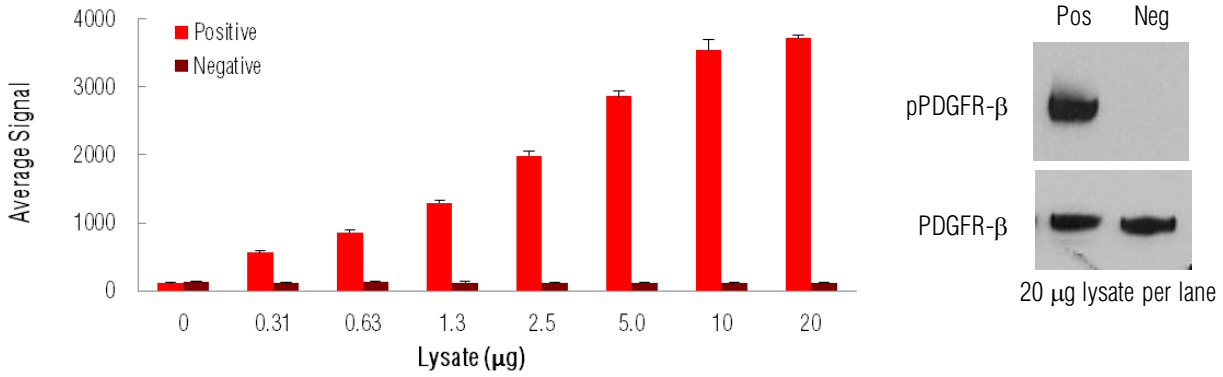

Fig. 1: Sample data generated with MULTI-ARRAY Phospho-PDGFR-β Assay. Increased signal is observed with the titration of pPDGFR-β positive cell lysate. The Phospho-PDGFR-β Assay provides a quantitative measure of the data obtained with the traditional Western blot.

Lysate Titration

Data for positive and negative NIH3T3 cell lysates using the MULTI-ARRAY Phospho-PDGFR-β Assay are presented below.

Lysate (µg)	Positive			Negative			P/N
	Average Signal	StdDev	%CV	Average Signal	StdDev	%CV	
0	112	14	12.9	126	10	7.6	
0.31	566	23	4.1	112	15	13.6	5.1
0.63	857	33	3.9	127	14	10.9	6.8
1.3	1296	36	2.8	123	14	11.8	11
2.5	1985	66	3.4	117	5	4.1	17
5.0	2860	80	2.8	118	3	2.3	24
10	3541	159	4.5	109	18	16.5	32
20	3712	43	1.2	115	14	12.2	32

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

References using MSD's technology for the measurement of phosphoproteins

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2. Cao L, Yu Y, Darko I, Currier D, Mayeenuddin LH, Wan X, Khanna C, Helman LJ. Addiction to elevated insulin-like growth factor I receptor and initial modulation of the AKT pathway define the responsiveness of rhabdomyosarcoma to the targeting antibody. Cancer Res. 2008 Oct 1;68(19):8039-48.
3. 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. Epub 2007 Mar 28.
4. 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.