

# DEP-1 (143-41): sc-21761

## BACKGROUND

Density-enhanced phosphatase-1 (DEP-1), a receptor-like protein tyrosine phosphatase, also known as HPTP- $\epsilon$ /CD148, is involved in signal transduction in leukocytes and in the mechanisms of cellular differentiation. DEP-1 consists of an extracellular segment containing eight fibronectin type III repeats, a single transmembrane segment and a single intracellular PTP domain. In lymphoid organs, DEP-1 is widely expressed on B and T cells, granulocytes, macrophages, certain dendritic cells, mature thymocytes and neutrophils. In non-lymphoid tissues, it is expressed on fibrocytes, melanocytes and Schwann cells, and many epithelial cell types with glandular and/or endocrine differentiation. In Jurkat T cells, DEP-1 inhibits TCR-mediated activation, which results in reduced expression of the early activation of Ag CD69, inhibition of tyrosine phosphorylation of many intracellular proteins, including tyrosine kinase ZAP-70 and impairment of mitogen-activated protein kinase activation. In spite of its intrinsic enzymatic activity, DEP-1 can induce protein tyrosine phosphorylation in human lymphocytes, and serine/threonine and/or tyrosine phosphorylation in tumor cell lines.

## CHROMOSOMAL LOCATION

Genetic locus: PTPRJ (human) mapping to 11p11.2.

## SOURCE

DEP-1 (143-41) is a mouse monoclonal antibody raised against PHA stimulated human PBL.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DEP-1 (143-41) is available conjugated to agarose (sc-21761 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21761 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-21761 PE), fluorescein (sc-21761 FITC), Alexa Fluor<sup>®</sup> 488 (sc-21761 AF488), Alexa Fluor<sup>®</sup> 546 (sc-21761 AF546), Alexa Fluor<sup>®</sup> 594 (sc-21761 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-21761 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-21761 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-21761 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

DEP-1 (143-41) is recommended for detection of DEP-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells).

Suitable for use as control antibody for DEP-1 siRNA (h): sc-35189, DEP-1 shRNA Plasmid (h): sc-35189-SH and DEP-1 shRNA (h) Lentiviral Particles: sc-35189-V.

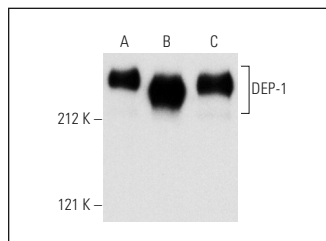
Molecular Weight of DEP-1: 220-250 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, THP-1 cell lysate: sc-2238 or human peripheral blood whole cell lysate.

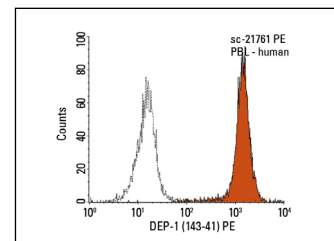
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



DEP-1 (143-41): sc-21761. Western blot analysis of DEP-1 expression in HL-60 (A), human peripheral blood (B) and THP-1 (C) whole cell lysates.



DEP-1 (143-41) PE: sc-21761 PE. FCM analysis of human peripheral blood leukocytes. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>-PE: sc-2866.

## SELECT PRODUCT CITATIONS

- Omerovic, J., et al. 2010. Phosphatome profiling reveals PTPN2, PTPRJ and PTEN as potent negative regulators of PKB/Akt activation in Ras-mutated cancer cells. *Biochem. J.* 426: 65-72.
- Petermann, A., et al. 2011. Loss of the protein-tyrosine phosphatase DEP-1/PTPRJ drives meningioma cell motility. *Brain Pathol.* 21: 405-418.
- Arora, D., et al. 2011. Protein-tyrosine phosphatase DEP-1 controls receptor tyrosine kinase FLT3 signaling. *J. Biol. Chem.* 286: 10918-10929.
- Karisch, R., et al. 2011. Global proteomic assessment of the classical protein-tyrosine phosphatome and "redoxome". *Cell* 146: 826-840.
- Godfrey, R., et al. 2012. Cell transformation by FLT3 ITD in acute myeloid leukemia involves oxidative inactivation of the tumor suppressor protein-tyrosine phosphatase DEP-1/PTPRJ. *Blood* 119: 4499-4511.
- Spring, K., et al. 2014. Phosphorylation of DEP-1/PTPRJ on threonine 1318 regulates Src activation and endothelial cell permeability induced by vascular endothelial growth factor. *Cell. Signal.* 26: 1283-1293.
- Koch, S., et al. 2016. *In situ* proximity ligation assay (*in situ* PLA) to assess PTP-protein interactions. *Methods Mol. Biol.* 1447: 217-242.
- Goob, G., et al. 2022. Phagocytosis mediated by the human granulocyte receptor CEACAM3 is limited by the receptor-type protein tyrosine phosphatase PTPRJ. *J. Biol. Chem.* 298: 102269.
- Corti, F., et al. 2022. Syndecan-2 selectively regulates VEGF-induced vascular permeability. *Nat. Cardiovasc. Res.* 1: 518-528.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.