

# OPN (LFMb-14): sc-73631

## BACKGROUND

Osteopontin (OPN), also designated bone sialoprotein 1, urinary stone protein, SPP-1, ETA-1, nephropontin and uropontin, is an extracellular matrix cell adhesion phosphoglycoprotein. OPN is deposited into unmineralized matrix prior to calcification, leading to localization at various tissue interfaces including cement lines, lamina limitans and between collagen fibrils of fully matured hard tissues. While OPN is a major product of osteoblasts, it is also synthesized by brain and kidney cells. OPN isolated from or secreted by various tissues ranges in molecular weight due to posttranslational modifications. OPN functions as a substrate for transglutaminase and is involved in cell adhesion, chemoattraction and immunomodulation.

## CHROMOSOMAL LOCATION

Genetic locus: SPP1 (human) mapping to 4q22.1; Spp1 (mouse) mapping to 5 E5.

## SOURCE

OPN (LFMb-14) is a mouse monoclonal antibody raised against full length recombinant OPN of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

OPN (LFMb-14) is available conjugated to agarose (sc-73631 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-73631 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-73631 PE), fluorescein (sc-73631 FITC), Alexa Fluor® 488 (sc-73631 AF488), Alexa Fluor® 546 (sc-73631 AF546), Alexa Fluor® 594 (sc-73631 AF594) or Alexa Fluor® 647 (sc-73631 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-73631 AF680) or Alexa Fluor® 790 (sc-73631 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

OPN (LFMb-14) is recommended for detection of OPN of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10<sup>6</sup> cells).

Suitable for use as control antibody for OPN siRNA (h): sc-36129, OPN siRNA (m): sc-36130, OPN siRNA (r): sc-270052, OPN shRNA Plasmid (h): sc-36129-SH, OPN shRNA Plasmid (m): sc-36130-SH, OPN shRNA Plasmid (r): sc-270052-SH, OPN shRNA (h) Lentiviral Particles: sc-36129-V, OPN shRNA (m) Lentiviral Particles: sc-36130-V and OPN shRNA (r) Lentiviral Particles: sc-270052-V.

Molecular Weight of OPN precursor: 66 kDa.

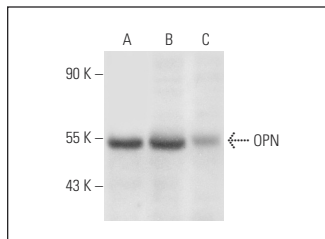
Molecular Weight of OPN cleavage products: 25-55 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, HOS cell lysate: sc-2275 or Caki-1 cell lysate: sc-2224.

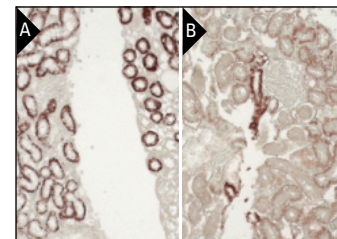
## STORAGE

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

## DATA



OPN (LFMb-14): sc-73631. Western blot analysis of OPN expression in HOS (A), U-87 MG (B) and Caki-1 (C) whole cell lysates.



OPN (LFMb-14): sc-73631. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse kidney tissue (A) and rabbit kidney tissue (B) showing staining of a subset of renal tubules.

## SELECT PRODUCT CITATIONS

- Ravindranath, A., et al. 2011. Wnt-β-catenin-Tcf-4 signalling-modulated invasiveness is dependent on osteopontin expression in breast cancer. *Br. J. Cancer* 105: 542-551.
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- Wang, L., et al. 2015. Vorinostat protects against calcium oxalate-induced kidney injury in mice. *Mol. Med. Rep.* 12: 4291-4297.
- Ying, M., et al. 2016. The E3 ubiquitin protein ligase MDM2 dictates all-*trans* retinoic acid-induced osteoblastic differentiation of osteosarcoma cells by modulating the degradation of RARα. *Oncogene* 35: 4358-4367.
- Wong, J.P.C., et al. 2017. Clinical and in vitro analysis of Osteopontin as a prognostic indicator and unveil its potential downstream targets in bladder cancer. *Int. J. Biol. Sci.* 13: 1373-1386.
- Petropoulos, C., et al. 2018. Functional invadopodia formed in glioblastoma stem cells are important regulators of tumor angiogenesis. *Oncotarget* 9: 20640-20657.
- Lee, J.M., et al. 2019. Developing palatal bone using human mesenchymal stem cell and stem cells from exfoliated deciduous teeth cell sheets. *J. Tissue Eng. Regen. Med.* 13: 319-327.
- Liu, L., et al. 2020. Phosphorylated chitosan hydrogels inducing osteogenic differentiation of osteoblasts via JNK and p38 signaling pathways. *ACS Biomater. Sci. Eng.* 6: 1500-1509.
- Tang, Q., et al. 2021. Fabrication of a hydroxyapatite-PDMS microfluidic chip for bone-related cell culture and drug screening. *Bioact. Mater.* 6: 169-178.

## RESEARCH USE

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

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