SANTA CRUZ BIOTECHNOLOGY, INC.

# Nischarin (D-1): sc-374407

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Integrins play important roles in key cellular functions, including cytoskeletal organization, growth, survival, motility and gene expression regulation. Nischarin is a novel intracellular protein, that binds to the cytoplasmic domain of Integrin $\alpha 5/\beta 1$ and interacts with various members of the PAK family of kinases. Nischarin binding to PAK1 inhibits the ability of PAK1 to phosphorylate substrates. When bound, this complex localizes to membrane ruffles which are involved in cell motility. Nischarin also acts as an antagonist of Rac function on cell movement and alters Actin filament organization. These functions give Nischarin a possible role in cell migration regulation. Nischarin is a primarily cytoplasmic protein primarily expressed in kidney and brain.

## REFERENCES


1. Dontenwill, M., et al. 2003. IRAS is an anti-apoptotic protein. Ann. N.Y. Acad. Sci. 1009: 400-412.
2. Chen, M.J., et al. 2003. Intracellular effect of imidazoline receptor on $\alpha_{2A}$-noradrenergic receptor. Ann. N.Y. Acad. Sci. 1009: 427-438.
3. Zhu, H., et al. 2003. Relationship between platele imidazoline-1 receptor, IRAS. Ann. N.Y. Acad. Sci. 1009: 439-446.


## CHROMOSOMAL LOCATION

Genetic locus: NISCH (human) mapping to 3p21.1; Nisch (mouse) mapping to 14 B.

## SOURCE

Nischarin (D-1) is a mouse monoclonal antibody raised against amino acids 1212-1504 mapping at the C-terminus of Nischarin of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Nischarin (D-1) is recommended for detection of Nischarin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Nischarin siRNA (h): sc-61201, Nischarin siRNA (m): sc-61202, Nischarin siRNA (r): sc-108099, Nischarin shRNA Plasmid (h): sc-61201-SH, Nischarin shRNA Plasmid (m): sc-61202-SH, Nischarin shRNA Plasmid (r): sc-108099-SH, Nischarin shRNA (h) Lentiviral Particles: sc-61201-V, Nischarin shRNA (m) Lentiviral Particles: sc-61202-V and Nischarin shRNA (r) Lentiviral Particles: sc-108099-V.

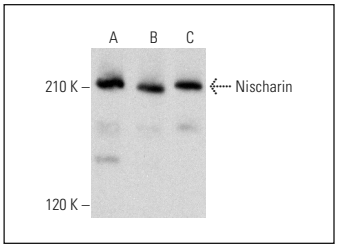
Molecular Weight of Nischarin: 190 kDa.

Positive Controls: Nischarin (h): 293T Lysate: sc-116146, NIH/3T3 whole cell lysate: sc-2210 or RPE-J cell lysate: sc-24771.

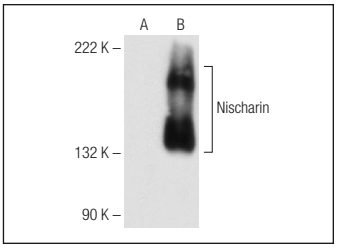
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA




Nischarin (D-1): sc-374407. Western blot analysis of Nischarin expression in F9 (**A**), NIH/3T3 (**B**) and RPE-J (**C**) whole cell lysates.




Nischarin (D-1): sc-374407. Western blot analysis of Nischarin expression in non-transfected: sc-117752 (**A**) and human Nischarin transfected: sc-116146 (**B**) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS


1. Dong, S., et al. 2017. Nischarin inhibition alters energy metabolism by activating AMP-activated protein kinase. J. Biol. Chem. 292: 16833-16846.
2. Dong, S., et al. 2020. Knockout model reveals the role of Nischarin in mammary gland development, breast tumorigenesis and response to metformin treatment. Int. J. Cancer 146: 2576-2587.
3. Nguyen, T.H., et al. 2022. Nischarin deletion reduces oxidative metabolism and overall ATP: a study using a novel $NISCH^{\Delta 5\text{-}6}$ knockout mouse model. Int. J. Mol. Sci. 23: 1374.


## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.