

# NEPH2 (E-14): sc-240731

## BACKGROUND

NEPH2 (nephrin-like protein 2), also known as KIRRE, KIRREL3 (kin of IRRE like 3) or MRD4, is a 778 amino acid single-pass type I membrane protein that belongs to the nephrin-like protein family and immunoglobulin superfamily. Expressed in both fetal and adult brain, as well as podocytes of kidney glomeruli, NEPH2 contains five Ig-like C2-type (immunoglobulin-like) domains and is thought to play a role in the hematopoietic supportive capacity of stroma cells. NEPH2 undergoes alternative splicing to produce two isoforms and contains a C-terminal cytoplasmic domain which it uses to interact with Podocin, a podocyte protein involved in ultrafiltration. Defects in the gene encoding NEPH2 are associated with mental retardation autosomal dominant type 4 (MRD4).

## REFERENCES

1. Nagase, T., Nakayama, M., Nakajima, D., Kikuno, R. and Ohara, O. 2001. Prediction of the coding sequences of unidentified human genes. XX. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 8: 85-95.
2. Sellin, L., Huber, T.B., Gerke, P., Quack, I., Pavenstädt, H. and Walz, G. 2003. NEPH1 defines a novel family of podocin interacting proteins. FASEB J. 17: 115-117.
3. Ueno, H., Sakita-Ishikawa, M., Morikawa, Y., Nakano, T., Kitamura, T. and Saito, M. 2003. A stromal cell-derived membrane protein that supports hematopoietic stem cells. Nat. Immunol. 4: 457-463.
4. Musiał, K. and Zwoliska, D. 2005. Structure and function of the glomerular filtration barrier. Pol. Merkur. Lekarski 18: 317-320.
5. Bhalla, K., Luo, Y., Buchan, T., Beachem, M.A., Guzauskas, G.F., Ladd, S., Bratcher, S.J., Schroer, R.J., Balsamo, J., DuPont, B.R., Lilien, J. and Srivastava, A.K. 2008. Alterations in CDH15 and KIRREL3 in patients with mild to severe intellectual disability. Am. J. Hum. Genet. 83: 703-713.
6. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 607761. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: KIRREL3 (human) mapping to 11q24.2; Kirrel3 (mouse) mapping to 9 A4.

## SOURCE

NEPH2 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of NEPH2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-240731 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NEPH2 (E-14) is recommended for detection of NEPH2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with NEPH1 or NEPH3.

NEPH2 (E-14) is also recommended for detection of NEPH2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for NEPH2 siRNA (h): sc-96973, NEPH2 siRNA (m): sc-149911, NEPH2 shRNA Plasmid (h): sc-96973-SH, NEPH2 shRNA Plasmid (m): sc-149911-SH, NEPH2 shRNA (h) Lentiviral Particles: sc-96973-V and NEPH2 shRNA (m) Lentiviral Particles: sc-149911-V.

Molecular Weight of NEPH2: 100 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.


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Try **NEPH2 (G-8): sc-514471**, our highly recommended monoclonal alternative to NEPH2 (E-14).