

# NR2E1 (EE-9): sc-100905

## BACKGROUND

NR2 proteins are a large family of nuclear hormone receptor transcription factors. The proteins belonging to this family are characterized by discrete domains functioning in DNA and ligand binding. NR2E1 (nuclear receptor sub-family 2, group E, member 1), also known as TLX, is an essential component in the formation of synaptic plasticity and dendritic structure in retinal astrocytes. In addition, NR2E1 is an orphan receptor that binds DNA as part of the hormone response element (HRE), a transcription regulator for hormones. DNA-binding orphan receptors have the conserved sequence 5'-AAGGTCA-3', a motif that determines substrate binding specificity. NR2E1 is expressed in brain tissue, with highest levels in astrocytes, and is localized to the nucleus. Mutations in the gene that encodes NR2E1 may lead to retinal dystrophy, a disorder characterized by a reduction in the thickness of the retina.

## REFERENCES

1. Monaghan, A.P., et al. 1997. Defective limbic system in mice lacking the tailless gene. *Nature* 390: 515-517.
2. Jackson, A., et al. 1998. The human homologue of the *Drosophila* tailless gene (TLX): characterization and mapping to a region of common deletion in human lymphoid leukemia on chromosome 6q21. *Genomics* 50: 34-43.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603849. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Shi, Y., et al. 2004. Expression and function of orphan nuclear receptor TLX in adult neural stem cells. *Nature* 427: 78-83.
5. Zhang, C.L., et al. 2006. Nuclear receptor TLX prevents retinal dystrophy and recruits the corepressor atrophin-1. *Genes Dev.* 20: 1308-1320.
6. Christie, B.R., et al. 2006. Deletion of the nuclear receptor NR2E1 impairs synaptic plasticity and dendritic structure in the mouse dentate gyrus. *Neuroscience* 137: 1031-1037.
7. Sun, G., et al. 2007. Orphan nuclear receptor TLX recruits histone deacetylases to repress transcription and regulate neural stem cell proliferation. *Proc. Natl. Acad. Sci. USA* 104: 15282-15287.
8. Kumar, R.A., et al. 2007. Mutation and evolutionary analyses identify NR2E1-candidate-regulatory mutations in humans with severe cortical malformations. *Genes Brain Behav.* 6: 503-516.

## CHROMOSOMAL LOCATION

Genetic locus: NR2E1 (human) mapping to 6q21; Nr2e1 (mouse) mapping to 10 B2.

## SOURCE

NR2E1 (EE-9) is a mouse monoclonal antibody raised against recombinant NR2E1 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

NR2E1 (EE-9) is recommended for detection of NR2E1 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NR2E1 siRNA (h): sc-75954, NR2E1 siRNA (m): sc-75955, NR2E1 shRNA Plasmid (h): sc-75954-SH, NR2E1 shRNA Plasmid (m): sc-75955-SH, NR2E1 shRNA (h) Lentiviral Particles: sc-75954-V and NR2E1 shRNA (m) Lentiviral Particles: sc-75955-V.

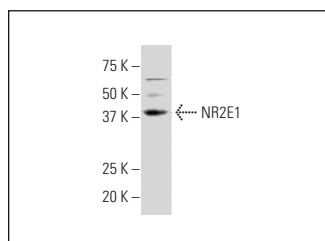
Molecular Weight of NR2E1: 43 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or Jurkat whole cell lysate: sc-2204.

## 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).

## DATA



NR2E1 (EE-9): sc-100905. Western blot analysis of NR2E1 expression in NIH/3T3 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Martin, N., et al. 2013. Interplay between Homeobox proteins and Polycomb repressive complexes in p16<sup>INK4a</sup> regulation. *EMBO J.* 32: 982-995.

## 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) for detailed protocols and support products.