

EN-1 (E-12): sc-398534

BACKGROUND

The engrailed-1 gene, EN-1, a murine homolog of the *Drosophila* homeobox gene engrailed (EN), is required for midbrain and cerebellum development and dorsal/ventral patterning of the limbs as well as apical ectodermal ridge formation. In *Drosophila*, the EN gene plays an important role during development in segmentation, where it is required for the formation of posterior compartments. Human EN-1 and EN-2 are homeodomain-containing proteins and have been implicated in the control of pattern formation during development of the central nervous system. Different mutations in the mouse homologs, EN-1 and EN-2, produce different developmental defects that frequently are lethal. EN-1 is highly expressed by essentially all dopaminergic neurons in the substantia nigra and ventral tegmentum. EN-1 and EN-2 regulate expression of α -synuclein, a gene that is genetically linked to Parkinson's disease.

REFERENCES

1. Kohler, A., et al. 1993. Regional assignment of the human homeobox-containing gene EN1 to chromosome 2q13-q21. *Genomics* 15: 233-235.
2. Hanks, M.C., et al. 1998. *Drosophila* engrailed can substitute for mouse Engrailed1 function in mid-hindbrain, but not limb development. *Development* 125: 4521-4530.
3. Ohuchi, H., et al. 1999. FGF10 can induce Fgf8 expression concomitantly with En1 and R-fng expression in chick limb ectoderm, independent of its dorsoventral specification. *Dev. Growth Differ.* 41: 665-673.
4. Gemel, J., et al. 1999. Fibroblast growth factor-8 expression is regulated by intronic engrailed and Pbx1-binding sites. *J. Biol. Chem.* 274: 6020-6026.
5. Simon, H.H., et al. 2001. Fate of midbrain dopaminergic neurons controlled by the engrailed genes. *J. Neurosci.* 21: 3126-3134.
6. Simon, H.H., et al. 2004. Midbrain dopaminergic neurons: control of their cell fate by the engrailed transcription factors. *Cell Tissue Res.* 318: 53-61.
7. Alberi, L., et al. 2004. Engrailed genes are cell-autonomously required to prevent apoptosis in mesencephalic dopaminergic neurons. *Development* 131: 3229-3236.

CHROMOSOMAL LOCATION

Genetic locus: EN1 (human) mapping to 2q14.2; En1 (mouse) mapping to 1 E2.3.

SOURCE

EN-1 (E-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 136-172 within an internal region of EN-1 of human origin.

PRODUCT

Each vial contains 200 μ g IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-398534 X, 200 μ g/0.1 ml.

Blocking peptide available for competition studies, sc-398534 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

EN-1 (E-12) is recommended for detection of EN-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 EN-1 siRNA (h): sc-43752, EN-1 siRNA (m): sc-45653, EN-1 shRNA Plasmid (h): sc-43752-SH, EN-1 shRNA Plasmid (m): sc-45653-SH, EN-1 shRNA (h) Lentiviral Particles: sc-43752-V and EN-1 shRNA (m) Lentiviral Particles: sc-45653-V.

EN-1 (E-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of EN-1: 40 kDa.

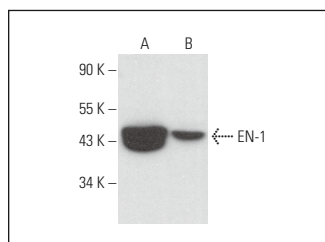
Positive Controls: Hep G2 nuclear extract: sc-364819, A549 cell lysate: sc-2413 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SUPPORT REAGENTS

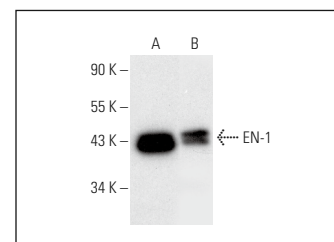
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml).
- 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



EN-1 (E-12): sc-398534. Western blot analysis of EN-1 expression in A549 whole cell lysate (A) and Hep G2 nuclear extract (B).



EN-1 (E-12): sc-398534. Western blot analysis of EN-1 expression in A549 (A) and Hep G2 (B) whole cell lysates.

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.