

EN-2 (C-19): sc-8111

BACKGROUND

The engrailed-2 gene, EN2, 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. During early brain development mouse EN-2 is expressed in a broad band across most of the mid-hindbrain region. EN-2 is also expressed in mouse myoblasts and has been associated with cerebellar hypoplasia.

REFERENCES

1. Goldfarb, A.N., et al. 1992. T cell acute lymphoblastic leukemia—the associated gene SCL/TAL codes for a 42-Kd nuclear phosphoprotein. *Blood* 80: 2858-2866.
2. Hanks, M.C., et al. 1998. *Drosophila* engrailed can substitute for mouse Engrailed-1 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 En-1 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. Li Song, D. and Joyner, A.L. 2000. Two Pax2/5/8-binding sites in Engrailed-2 are required for proper initiation of endogenous mid-hindbrain expression. *Mech. Dev.* 90: 155-165.
6. Simon, H.H., et al. 2001. Fate of midbrain dopaminergic neurons controlled by the engrailed genes. *J. Neurosci.* 21: 3126-3134.
7. Degenhardt, K., et al. 2001. A role for Engrailed-2 in determination of skeletal muscle physiologic properties. *Dev. Biol.* 231: 175-189.

CHROMOSOMAL LOCATION

Genetic locus: EN2 (human) mapping to 7q36.3, EN1 (human) mapping to 2q14.2; En2 (mouse) mapping to 5 B1, En1 (mouse) mapping to 1 C2.

SOURCE

EN-2 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of EN-2 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG 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-8111 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-8111 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

EN-2 (C-19) is recommended for detection of EN-2 and to a lesser extent EN-1 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).

EN-2 (C-19) is also recommended for detection of EN-2 and to a lesser extent EN-1 in additional species, including porcine and avian.

EN-2 (C-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of EN-2: 34 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.

SELECT PRODUCT CITATIONS

1. 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.
2. Zhong, S.C., et al. 2010. Dynamic expression and heterogeneous intracellular location of En-1 during late mouse embryonic development. *Cells Tissues Organs* 191: 289-300.

RESEARCH USE

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



Try **EN-2 (1E1): sc-293311**, our highly recommended monoclonal alternative to EN-2 (C-19).