SANTA CRUZ BIOTECHNOLOGY, INC.

Egr-4 (C-14): sc-19868

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Egr-1, Egr-2, Egr-3 and Egr-4 are nuclear transcription factors belonging to the Egr C_2H_2-type zinc-finger protein family and containing three C_2H_2-type zinc fingers. As immediate early proteins, Egr transcription factors are rapidly induced by diverse extracellular stimuli. They are subject to tight differential control through diverse mechanisms at several levels of regulation: transcriptional; translational and posttranslational (including glycosylation, phosphorylation and redox) mechanisms; and protein-protein interaction. Egr-1 binds to the DNA sequence 5'-CGCCCCCGC-3' (Egr-site), thereby activating transcription of target genes whose products are required for mitogenisis and differentiation. Egr-2 binds specific DNA sites located in the promoter region of HoxA4. Egr-2 defects cause congenital hypomyelination neuropathy (also designated Charcot-Marie-Tooth disease) and Dejerine-Sottas neuropathology (also designated hereditary motor and sensory neuropathy III). Egr-3 is involved in muscle spindle development and is expressed in T cells 20 minutes following activation. Egr-4 binds to the Egr consensus motif GCGTGGGCG, functions as a transcriptional repressor, and displays autoregulatory activities, downregulating its own gene promoter in a dose dependent manner.

REFERENCES

1. Beckmann, A.M. and Wilce, P.A. 1997. Egr transcription factors in the nervous system. Neurochem. Int. 31: 477-510.
2. Zipfel, P.F., et al. 1997. The human zinc finger protein Egr-4 acts as autoregulatory transcriptional repressor. Biochim. Biophys. Acta 1354: 134-144.

CHROMOSOMAL LOCATION

Genetic locus: EGR4 (human) mapping to 2p13.1; Egr4 (mouse) mapping to 6 C3.

SOURCE

Egr-4 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Egr-4 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-19868 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-19868 X, 200 µg/0.1 ml.

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.

APPLICATIONS

Egr-4 (C-14) is recommended for detection of Egr-4 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)], 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 Egr-4 siRNA (h): sc-37829, Egr-4 siRNA (m): sc-37830, Egr-4 shRNA Plasmid (h): sc-37829-SH, Egr-4 shRNA Plasmid (m): sc-37830-SH, Egr-4 shRNA (h) Lentiviral Particles: sc-37829-V and Egr-4 shRNA (m) Lentiviral Particles: sc-37830-V.

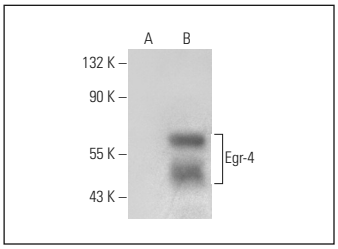
Egr-4 (C-14) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of Egr-4: 51 kDa.

Molecular Weight (observed) of Egr-4: 46 kDa.

Positive Controls: Egr-4 (m): 293 Lysate: sc-178566 or Jurkat whole cell lysate: sc-2204.

DATA



Egr-4 (C-14): sc-19868. Western blot analysis of Egr-4 expression in non-transfected: sc-110760 (**A**) and mouse Egr-4 transfected: sc-178566 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Li, L., et al. 2005. The neuroplasticity-associated arc gene is a direct transcriptional target of early growth response (Egr) transcription factors. Mol. Cell. Biol. 25: 10286-10300.
2. Li, B., et al. 2006. *De novo* synthesis of early growth response factor-1 is required for the full responsiveness of mast cells to produce TNF and IL-13 by IgE and antigen stimulation. Blood 107: 2814-2820.
3. Li, B., et al. 2007. The early growth response factor-1 is involved in stem cell factor (SCF)-induced interleukin 13 production by mast cells, but is dispensable for SCF-dependent mast cell growth. J. Biol. Chem. 282: 22573-22581.
4. Kim, J.H., et al. 2011. Brain-derived neurotrophic factor uses CREB and Egr3 to regulate NMDA receptor levels in cortical neurons. J. Neurochem. 120: 210-219.
5. Qiao, H. and May, J.M. 2011. Regulation of the human ascorbate transporter SVCT2 exon 1b gene by zinc-finger transcription factors. Free Radic. Biol. Med. 50: 1196-1209.