SANTA CRUZ BIOTECHNOLOGY, INC.

DR1 (Q-22): sc-133522

BACKGROUND

DR1 (downregulator of transcription 1), also known as NC2β (negative cofactor 2 subunit β), is a TFIID (TATA box-binding protein)-associated protein. DR1 localizes to the nucleus and contains an N-terminal histone fold motif, a TFIID-binding domain and an alanine and glutamine rich region. Via its histone fold motif, DR1 forms a heterodimer with NC2α (DRAP1) to comprise the conserved eukaryotic complex, NC2 (negative cofactor 2). The NC2 complex can both positively and negatively regulate transcription by RNA pol II. More specifically, NC2 acts as a repressor of TATA-dependent transcription and acts as an activator for DPE-dependent transcription. NC2 represses RNA pol II transcription by binding to TFIID and inhibiting association of the transcription factors TFIIA and TFIIB. NC2 activity is regulated by phosphorylation. Both subunits, NC2α and DR1, are phosphorylated *in vivo*.

REFERENCES

1. Creton, S., et al. 2002. The NC2 α and β subunits play different roles *in vivo*. Genes Dev. 16: 3265-3276.
2. Kanbe, E., et al. 2003. DR1-like element in human topoisomerase IIα gene involved in enhancement of etoposide-induced apoptosis by PPARγ ligand. Exp. Hematol. 31: 300-308.
3. Kadonaga, J.T. 2003. The DPE, a core promoter element for transcription by RNA polymerase II. Exp. Mol. Med. 34: 259-264.
4. Klejman, M.P., et al. 2004. NC2α interacts with BTAF1 and stimulates its ATP-dependent association with TATA-binding protein. Mol. Cell. Biol. 24: 10072-10082.
5. Gilfillan, S., et al. 2005. Efficient binding of NC2-TATA-binding protein to DNA in the absence of TATA. J. Biol. Chem. 280: 6222-6230.
6. Klejman, M.P., et al. 2005. Mutational analysis of BTAF1-TBP interaction: BTAF1 can rescue DNA-binding defective TBP mutants. Nucleic Acids Res. 33: 5426-5436.
7. Masson, P., et al. 2007. The dual control of TFIIB recruitment by NC2 is gene specific. Nucleic Acids Res. 36: 539-549.

CHROMOSOMAL LOCATION

Genetic locus: DR1 (human) mapping to 1p22.1; Dr1 (mouse) mapping to 5 F.

SOURCE

DR1 (Q-22) is a Protein A purified rabbit polyclonal antibody raised against synthetic DR1 peptide of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

STORAGE

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

APPLICATIONS

DR1 (Q-22) is recommended for detection of DR1 of mouse, rat, human and zebrafish 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).

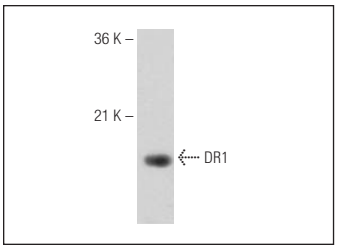
Suitable for use as control antibody for DR1 siRNA (h): sc-62238, DR1 siRNA (m): sc-62239, DR1 shRNA Plasmid (h): sc-62238-SH, DR1 shRNA Plasmid (m): sc-62239-SH, DR1 shRNA (h) Lentiviral Particles: sc-62238-V and DR1 shRNA (m) Lentiviral Particles: sc-62239-V.

Molecular Weight of DR1: 19 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



DR1 (Q-22): sc-133522. Western blot analysis of human DR1 transfected 293T whole cell lysate.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.