SANTA CRUZ BIOTECHNOLOGY, INC.

DR1 (D-1): sc-515083

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The Power to Question

BACKGROUND

DR1 (down-regulator 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.

CHROMOSOMAL LOCATION

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

SOURCE

DR1 (D-1) is a mouse monoclonal antibody raised against amino acids 1-176 representing full length DR1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-515083 X, 200 µg/0.1 ml.

DR1 (D-1) is available conjugated to agarose (sc-515083 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515083 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515083 PE), fluorescein (sc-515083 FITC), Alexa Fluor® 488 (sc-515083 AF488), Alexa Fluor® 546 (sc-515083 AF546), Alexa Fluor® 594 (sc-515083 AF594) or Alexa Fluor® 647 (sc-515083 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515083 AF680) or Alexa Fluor® 790 (sc-515083 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

DR1 (D-1) is recommended for detection of DR1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 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.

DR1 (D-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

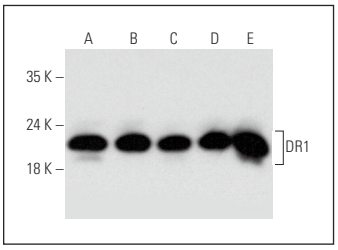
Molecular Weight of DR1: 19 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or PC-12 cell lysate: sc-2250.

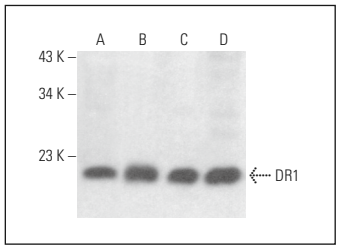
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



DR1 (D-1): sc-515083. Western blot analysis of DR1 expression in HeLa (**A**), K-562 (**B**), PC-12 (**C**) and RAW 264.7 (**D**) whole cell lysates and HeLa nuclear extract (**E**).



DR1 (D-1): sc-515083. Western blot analysis of DR1 expression in HeLa (**A**), HL-60 (**B**) and F9 (**C**) whole cell lysates and mouse testis tissue extract (**D**).

STORAGE

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

PROTOCOLS

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