

Id1 (B-8): sc-133104



The Power to Question

BACKGROUND

Members of the Id family of basic helix-loop-helix (bHLH) proteins include Id1, Id2, Id3 and Id4. They are ubiquitously expressed and dimerize with members of the class A and B HLH proteins. Due to the absence of the basic region, the resulting heterodimers cannot bind DNA. The Id-type proteins thus appear to negatively regulate DNA binding of bHLH proteins. Since Id1 inhibits DNA binding of E12 and MyoD, it apparently functions to inhibit muscle-specific gene expression. Under conditions that facilitate muscle cell differentiation, the Id protein levels fall, allowing E12 and/or E47 to form heterodimers with MyoD and myogenin, which in turn activate myogenic differentiation. It has been shown that expression of each of the Id proteins is strongly dependent on growth factor activation and that reduction of Id mRNA levels by antisense oligonucleotides leads to a delayed reentry of arrested cells into the cell cycle following growth factor stimulation.

REFERENCES

1. Benezra, R., et al. 1990. The protein Id: a negative regulator of helix-loop-helix DNA binding proteins. *Cell* 61: 49-59.
2. Christy, B.A., et al. 1991. An Id-related helix-loop-helix protein encoded by a growth factor-inducible gene. *Proc. Natl. Acad. Sci. USA* 88: 1815-1819.

CHROMOSOMAL LOCATION

Genetic locus: ID1 (human) mapping to 20q11.21; Id1 (mouse) mapping to 2 H1.

SOURCE

Id1 (B-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 118-159 at the C-terminus of Id1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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-133104 X, 200 µg/0.1 ml.

Id1 (B-8) is available conjugated to agarose (sc-133104 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133104 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133104 PE), fluorescein (sc-133104 FITC), Alexa Fluor® 488 (sc-133104 AF488), Alexa Fluor® 546 (sc-133104 AF546), Alexa Fluor® 594 (sc-133104 AF594) or Alexa Fluor® 647 (sc-133104 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133104 AF680) or Alexa Fluor® 790 (sc-133104 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-133104 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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

Id1 (B-8) is recommended for detection of Id1 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Id1 (B-8) is also recommended for detection of Id1 in additional species, including canine.

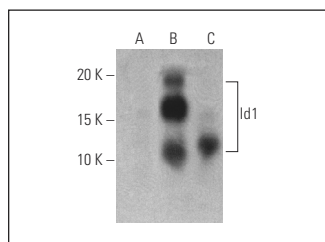
Suitable for use as control antibody for Id1 siRNA (h): sc-29356, Id1 siRNA (m): sc-35632, Id1 shRNA Plasmid (h): sc-29356-SH, Id1 shRNA Plasmid (m): sc-35632-SH, Id1 shRNA (h) Lentiviral Particles: sc-29356-V and Id1 shRNA (m) Lentiviral Particles: sc-35632-V.

Id1 (B-8) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

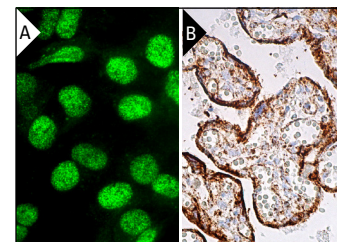
Molecular Weight of Id1: 15 kDa.

Positive Controls: Id1 (h2): 293T Lysate: sc-171632, PC-3 cell lysate: sc-2220 or HeLa whole cell lysate: sc-2200.

DATA



Id1 (B-8): sc-133104. Western blot analysis of Id1 expression in non-transfected 293T: sc-117752 (A), human Id1 transfected 293T: sc-171632 (B) and PC-3 (C) whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.



Id1 (B-8): sc-133104. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells (B).

SELECT PRODUCT CITATIONS

1. Chen, D.F., et al. 2011. BMP-Id pathway targeted by cholesterol myristate suppresses the apoptosis of PC12 cells. *Brain Res.* 1367: 33-42.
2. Niu, B., et al. 2021. Interplay between transforming growth factor-β and Nur77 in dual regulations of inhibitor of differentiation 1 for colonic tumorigenesis. *Nat. Commun.* 12: 2809.
3. Li, L., et al. 2022. Deubiquitinase USP8 increases Id1 stability and promotes esophageal squamous cell carcinoma tumorigenesis. *Cancer Lett.* 542: 215760.

PROTOCOLS

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

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