SANTA CRUZ BIOTECHNOLOGY, INC.

Id1 (N-16): sc-27186

SANTA CRUZ BIOTECHNOLOGY
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 Myo D, 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 Myo D 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.
3. Sun, X., et al. 1991. Id proteins Id1 and Id2 selectively inhibit DNA binding by one class of helix-loop-helix proteins. Mol. Cell. Biol. 11: 5603-5611.
4. Neuhold, L.A., et al. 1993. HLH forced dimers: tethering MyoD to E47 generates a dominant positive myogenic factor insulated from negative regulation by Id. Cell 74: 1033-1042.
5. Riechmann, V., et al. 1994. The expression pattern of Id4, a novel dominant negative helix-loop-helix protein, is distinct from Id1, Id2 and Id3. Nucleic Acids Res. 22: 749-755.
6. Barone, M.V., et al. 1994. Id proteins control growth induction in mammalian cells. Proc. Natl. Acad. Sci. USA 91: 4985-4988.
7. Hara, E., et al. 1994. Id-related genes encoding helix-loop-helix proteins are required for G_1 progression and are repressed in senescent human fibroblasts. J. Biol. Chem. 269: 2139-2145.

CHROMOSOMAL LOCATION

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

SOURCE

Id1 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Id1 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-27186 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Id1 (N-16) is recommended for detection of Id1 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), 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).

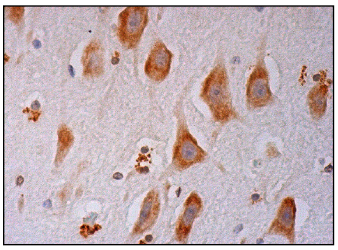
Id1 (N-16) is also recommended for detection of Id1 in additional species, including canine, bovine and porcine.

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) and Lentiviral Particles: sc-29356-V, Id1 shRNA (m) Lentiviral Particles: sc-35632-V.

Molecular Weight of Id1: 15 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HeLa whole cell lysate: sc-2200 or PC-12 + NGF cell lysate: sc-3808.

DATA



Id1 (N-16): sc-27186. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells and cytoplasmic and nuclear staining of glial cells.

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.

PROTOCOLS

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