SANTA CRUZ BIOTECHNOLOGY, INC.

Id2 (2457C5a): sc-81298

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 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 re-entry of arrested cells into the cell cycle following growth factor stimulation.

REFERENCES

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2. Christy, B.A., Sanders, L.K., Lau, L.F., Copeland, N.G., Jenkins, N.A. and Nathans, D. 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., Copeland, N.G., Jenkins, N.A. and Baltimore, D. 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. and Wold, B. 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., van Crüchten, I. and Sablitzky, F. 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., Pepperkok, R., Peverali, F.A. and Philipson, L. 1994. Id proteins control growth induction in mammalian cells. Proc. Natl. Acad. Sci. USA 91: 4985-4988.
7. Hara, E., Yamaguchi, T., Nojima, H., Ide, T., Campisi, J., Okayama, H. and Oda, K. 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: ID2 (human) mapping to 2p25.1.

SOURCE

Id2 (2457C5a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to a region near the N-terminus of Id2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

APPLICATIONS

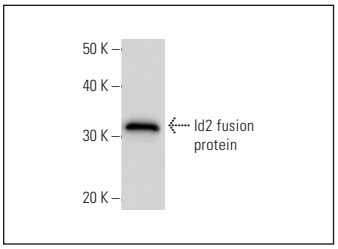
Id2 (2457C5a) is recommended for detection of Id2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Id2 siRNA (h): sc-38000, Id2 shRNA Plasmid (h): sc-38000-SH and Id2 shRNA (h) Lentiviral Particles: sc-38000-V.

Molecular Weight of Id2: 15 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237 or SK-N-MC nuclear extract: sc-2154.

DATA



Id2 (2457C5a): sc-81298. Western Blot analysis of human recombinant Id2 fusion protein.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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

PROTOCOLS

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

CONJUGATES

See **Id2 (E-7): sc-398104** for Id2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.