SANTA CRUZ BIOTECHNOLOGY, INC.

Id1 (JC-FL): sc-734

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.

SOURCE

Id1 (JC-FL) is a rabbit polyclonal antibody raised against amino acids 1-154 representing full length Id1 protein 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.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-734 X, 200 µg/0.1 ml.

APPLICATIONS

Id1 (JC-FL) is recommended for detection of Id1, Id2, Id3 and Id4 of human 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)], 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).

Id1 (JC-FL) is also recommended for detection of Id1, Id2, Id3 and Id4 in additional species, including canine, bovine and porcine.

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

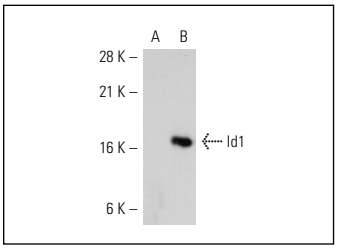
Molecular Weight of Id1: 15 kDa.

Positive Controls: Id1 (h): 293 Lysate: sc-113028, Ramos cell lysate: sc-2216 or HeLa nuclear extract: sc-2120.

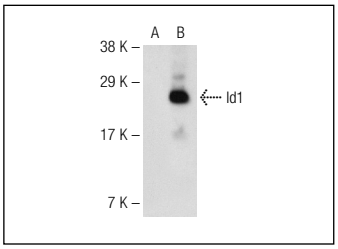
STORAGE

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

DATA



Id1 (JC-FL): sc-734. Western blot analysis of Id1 expression in non-transfected: sc-110760 (**A**) and human Id1 transfected: sc-113028 (**B**) 293 whole cell lysates.



Id1 (JC-FL): sc-734. Western blot analysis of Id1 expression in non-transfected: sc-117752 (**A**) and human Id1 transfected: sc-171632 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Alani, R., et al. 1999. Immortalization of primary human keratinocytes by the helix-loop-helix protein, Id1. Proc. Natl. Acad. Sci. USA 96: 9637-9641.
2. Bounpheng, M.A., et al. 1999. Degradation of Id proteins by the ubiquitin-proteasome pathway. FASEB J. 13: 2257-2264.
3. Villavicencio, E.H., et al. 2002. Cooperative E-box regulation of human GLI-1 by twist and USF. Genesis 32: 247-258.
4. Hasskarl, J. 2004. The helix-loop-helix protein Id1 localizes to centrosomes and rapidly induces abnormal centrosome numbers. Oncogene 23: 1930-1938.
5. Pache, G., et al. 2006. Upregulation of Id1 via BMP-2 receptors induces reactive oxygen species in podocytes. Am. J. Physiol. Renal Physiol. 291: F654-F662.
6. Maw, M.K., et al. 2008. Expression of the inhibitor of DNA-binding (Id)-1 protein as an angiogenic mediator in tumour advancement of uterine cervical cancers. Br. J. Cancer 99: 1557-1563.
7. Maw, M.K., et al. 2009. Overexpression of inhibitor of DNA-binding (ID)-1 protein related to angiogenesis in tumor advancement of ovarian cancers. BMC Cancer 9: 430.

RESEARCH USE

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