

# Id2 (C-20): sc-489

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: ID2 (human) mapping to 2p25.1; Id2 (mouse) mapping to 12 A1.3.

## SOURCE

Id2 (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Id2 of mouse origin.

## PRODUCT

Each vial contains 100 µg IgG 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-489 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-489 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Id2 (C-20) is recommended for detection of Id2 of mouse, rat and 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), 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).

Id2 (C-20) is also recommended for detection of Id2 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Id2 siRNA (h): sc-38000, Id2 siRNA (m): sc-38001, Id2 shRNA Plasmid (h): sc-38000-SH, Id2 shRNA Plasmid (m): sc-38001-SH, Id2 shRNA (h) Lentiviral Particles: sc-38000-V and Id2 shRNA (m) Lentiviral Particles: sc-38001-V.

Id2 (C-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

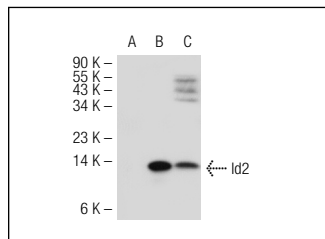
Molecular Weight of Id1: 15 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237 or Id2 (m): 293T Lysate: sc-120938.

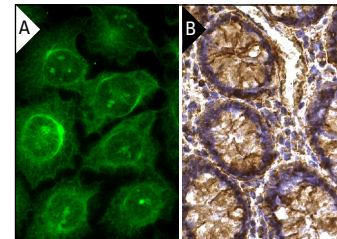
## STORAGE

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

## DATA



Id2 (C-20): sc-489. Western blot analysis of Id2 expression in non-transfected 293T: sc-117752 (A), mouse Id2 transfected 293T: sc-120938 (B) and SK-N-MC (C) whole cell lysates.



Id2 (C-20): sc-489. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

- Florio, M., et al. 1998. Id2 promotes apoptosis by a novel mechanism independent of dimerization to basic helix-loop-helix factors. *Mol. Cell Biol.* 18: 5435-5444.
- Fini, M.A., et al. 2011. Contribution of xanthine oxidoreductase to mammary epithelial and breast cancer cell differentiation in part modulates inhibitor of differentiation-1. *Mol. Cancer Res.* 9: 1242-1254.
- Kuo, T.C., et al. 2011. Forced expression of cyclin-dependent kinase 6 confers resistance of pro-B acute lymphocytic leukemia to Gleevec treatment. *Mol. Cell Biol.* 31: 2566-2576.
- Chelh, I., et al. 2011. Myostatin inactivation induces a similar muscle molecular signature in double-muscled cattle as in mice. *Animal* 5: 278-286.
- Dong, J., et al. 2011. ID4 regulates mammary gland development by suppressing p38<sup>MAPK</sup> activity. *Development* 138: 5247-5256.
- Oliver, C.H., et al. 2012. The Stat6-regulated KRAB domain zinc finger protein Zfp157 regulates the balance of lineages in mammary glands and compensates for loss of Gata-3. *Genes Dev.* 26: 1086-1097.
- Annibaldi, D., et al. 2012. A new module in neural differentiation control: two microRNAs upregulated by retinoic acid, miR-9 and -103, target the differentiation inhibitor ID2. *PLoS ONE* 7: e40269.

## RESEARCH USE

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



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Try **Id2 (E-7): sc-398104** or **Id2 (2457C5a): sc-81298**, our highly recommended monoclonal alternatives to Id2 (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Id2 (E-7): sc-398104**.