SANTA CRUZ BIOTECHNOLOGY, INC.

Id3 (2B11): sc-56712



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.

CHROMOSOMAL LOCATION

Genetic locus: ID3 (human) mapping to 1p36.12; Id3 (mouse) mapping to 4 D3.

SOURCE

Id3 (2B11) is a mouse monoclonal antibody raised against amino acids 1-119 of Id3 of mouse origin.

PRODUCT

Each vial contains 200 μg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Id3 (2B11) is available conjugated to agarose (sc-56712 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-56712 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56712 PE), fluorescein (sc-56712 FITC), Alexa Fluor[®] 488 (sc-56712 AF488), Alexa Fluor[®] 546 (sc-56712 AF546), Alexa Fluor[®] 594 (sc-56712 AF594) or Alexa Fluor[®] 647 (sc-56712 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-56712 AF680) or Alexa Fluor[®] 790 (sc-56712 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

RESEARCH USE

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

APPLICATIONS

Id3 (2B11) is recommended for detection of Id3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Id3 siRNA (h): sc-38002, Id3 siRNA (m): sc-38003, Id3 shRNA Plasmid (h): sc-38002-SH, Id3 shRNA Plasmid (m): sc-38003-SH, Id3 shRNA (h) Lentiviral Particles: sc-38002-V amd Id3 shRNA (m) Lentiviral Particles: sc-38003-V.

Molecular Weight of Id3: 20 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

- Das, J.K., et al. 2015. Id3 contributes to the acquisition of molecular stem cell-like signature in microvascular endothelial cells: its implication for understanding microvascular diseases. Microvasc. Res. 98: 126-138.
- Fortin, J., et al. 2020. Mutant ACVR1 arrests glial cell differentiation to drive tumorigenesis in pediatric gliomas. Cancer Cell 37: 308-323.e12.
- Panahipour, L., et al. 2020. Milk lactoperoxidase decreases Id1 and Id3 expression in human oral squamous cell carcinoma cell lines. Sci. Rep. 10: 5836.
- Wang, X., et al. 2020. LEF1/Id3/HRAS axis promotes the tumorigenesis and progression of esophageal squamous cell carcinoma. Int. J. Biol. Sci. 16: 2392-2404.
- 5. He, Y., et al. 2021. A noncanonical AR addiction drives enzalutamide resistance in prostate cancer. Nat. Commun. 12: 1521.
- Bakr, A., et al. 2021. Id3 promotes homologous recombination via non-transcriptional and transcriptional mechanisms and its loss confers sensitivity to PARP inhibition. Nucleic Acids Res. 49: 11666-11689.
- Hayashi, S., et al. 2022. XBP1u is involved in C2C12 myoblast differentiation via accelerated proteasomal degradation of Id3. Front. Physiol. 13: 796190.
- 8. Li, T., et al. 2022. BMP4 exerts anti-neurogenic effect via inducing Id3 during aging. Biomedicines 10: 1147.
- 9. Carr, D., et al. 2022. Multiple roles for Bcl-3 in mammary gland branching, stromal collagen invasion, involution and tumor pathology. Breast Cancer Res. 24: 40.
- 10. Hou, J., et al. 2022. Heterogeneity analysis of astrocytes following spinal cord injury at single-cell resolution. FASEB J. 36: e22442.
- 11.Li, D., et al. 2023. Cleavage of semaphorin 4 C interferes with the neuroprotective effect of the semaphorin 4 C/Plexin B2 pathway on experimental intracerebral hemorrhage in rats. J. Chem. Neuroanat. 132: 102318.
- Kakogiannis, D., et al. 2024. Reversal of postnatal brain astrocytes and ependymal cells towards a progenitor phenotype in culture. Cells 13: 668.

STORAGE

Store at 4° C, **D0 NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.