SANTA CRUZ BIOTECHNOLOGY, INC.

TGFβ1 (C-16): sc-31609

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The Power to Question

BACKGROUND

Transforming growth factor βs (TGFβs) were originally discovered due to their ability to promote anchorage-independent growth of rat NRK fibroblasts in the presence of TGFα. It is now realized that TGFβs mediate many cell-cell interactions that occur during embryonic development. Three TGFβs have been identified in mammals. TGFβ1, TGFβ2 and TGFβ3 are each synthesized as precursor proteins that are very similar in that each is cleaved to yield a 112 amino acid polypeptide that remains associated with the latent portion of the molecules. Biologically active TGFβ requires dimerization of the monomers (usually homodimers) and release of the latent peptide portion. Overall, the mature region of the TGFβ3 protein has approximately 80% identity to the mature region of both TGFβ1 and TGFβ2. However, the NH_2 terminals or precursor regions of their molecules share only 27% sequence identity.

REFERENCES

1. Todaro, G.J., et al. 1980. Transforming growth factors produced by certain human tumor cells: polypeptides that interact with epidermal growth factor receptors. Proc. Natl. Acad. Sci. USA 77: 5258-5262.
2. Anzano, M.A., et al. 1983. Sarcoma growth factor from conditioned medium of virally transformed cells is composed of both type α and type β transforming growth factors. Proc. Natl. Acad. Sci. USA 80: 6264-6268.
3. Derynck, R., et al. 1985. Human TGFβ cDNA sequence and expression in tumor cell lines. Nature 316: 701-705.

SOURCE

TGFβ1 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of TGFβ1 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-31609 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TGFβ1 (C-16) is recommended for detection of precursor and mature forms of TGFβ1 and, to a lesser extent, TGFβ2 and TGFβ3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TGFβ1 (C-16) is also recommended for detection of precursor and mature forms of TGFβ1 and, to a lesser extent, TGFβ2 and TGFβ3 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of TGFβ1 monomer: 13 kDa.

Molecular Weight of TGFβ1 dimer: 25 kDa.

Positive Controls: T-47D cell lysate: sc-2293, MCF7 whole cell lysate: sc-2206 or human platelet whole cell lysate: sc-363773.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Krejcí, J., et al. 2009. Genome-wide reduction in H3K9 acetylation during human embryonic stem cell differentiation. J. Cell. Physiol. 219: 677-687.
2. Li, S., et al. 2009. Expression of TGFβ1 in pulmonary vein stenosis after radiofrequency ablation in chronic atrial fibrillation of dogs. Mol. Biol. Rep. 36: 221-225.
3. Fan, D.M., et al. 2011. High expression of TGF-β1 in the vaginal incisional margin predicts poor prognosis in patients with stage Iβ-IIα cervical squamous cell carcinoma. Mol. Biol. Rep. 39:3925-3931.
4. Chen, J.H., et al. 2011. β-catenin mediates mechanically regulated, transforming growth factor-β1-induced myofibroblast differentiation of aortic valve interstitial cells. Arterioscler. Thromb. Vasc. Biol. 31: 590-597.
5. Bedel, R., et al. 2011. Novel role for STAT3 in transcriptional regulation of NK immune cell targeting receptor MICA on cancer cells. Cancer Res. 71: 1615-1626.
6. Ma, Y., et al. 2012. Toll-Like receptor (TLR) 2 and TLR4 differentially regulate doxorubicin induced cardiomyopathy in mice. PLoS ONE 7: e40763.
7. Brown, S.D., et al. 2012. Airway TGF-β1 and oxidant stress in children with severe asthma: association with airflow limitation. J. Allergy Clin. Immunol. 129: 388-396, 396.e1-396.e8.

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.