

Recombinant Canine TGF alpha Protein DataSheet

Catalog Number: GR122126

Background

Transforming growth factor alpha (TGF- α) is a protein that is encoded by the TGFA gene.^[1] As a member of the epidermal growth factor (EGF) family, TGF- α is a mitogenic polypeptide.^[2] The protein becomes activated when binding to receptors capable of protein kinase activity for cellular signaling. The protein, however, is not directly related to TGF- β . TGF- α is a ligand for the epidermal growth factor receptor, which activates a signaling pathway for cell proliferation, differentiation and development. This protein may act as either a transmembrane-bound ligand or a soluble ligand. This gene has been associated with many types of cancers, and it may also be involved in some cases of cleft lip/palate. TGF- α can be produced in macrophages, brain cells, and keratinocytes. TGF- α induces epithelial development. In the stomach, TGF- α is produced within the normal gastric mucosa.^[3] TGF- α has been shown to inhibit gastric acid secretion. The biological actions of TGF- α and EGF are similar. When TGF- α binds to EGFR it can initiate multiple cell proliferation events.^[4] Cell proliferation events that involve TGF- α bound to EGFR include wound healing and embryogenesis. TGF- α is also involved in tumorigenesis and believed to promote angiogenesis.^[5] TGF- α has also been shown to stimulate neural cell proliferation in the adult injured brain.^[6] TGF- α is heavily involved in cancer progression (e.g., lung, breast, pancreatic), acts as a biomarker for various tumors, and is associated with Menetrier's disease, a rare stomach condition. It acts synergistically with TGF-beta to encourage anchorage-independent cell proliferation. Overexpression is associated with gastric cancer, pancreatic cancer, and melanoma. It is also implicated in fibroproliferative diseases and cartilage degradation.

References

1. Lee DC, et al. (1985). *Nature*. 313 (6002): 489–491.
2. Ojeda SR, et al. (1997). *Molecular Psychiatry*. 2 (5): 355–358.
3. Coffey RJ, et al. (1995). *European Journal of Gastroenterology & Hepatology*. 7 (10): 923–7.
4. McInnes C, et al. (1998). *The Journal of Biological Chemistry*. 273 (42): 27357–27363.
5. Ferrer I, et al. (1996). *Progress in Neurobiology*. 49 (2): 99–123.
6. Fallon J, et al. (2000). *Proc Acad Sci USA*. 97 (26): 14686–14691.



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Description

Source: *E coli*-derived

Compositions: Ser31–Val160

Accession # A0A8I3Q273

Predicted Molecular Mass: 14 kDa (monomer)

Specifications

Activity Measured in a cell proliferation assay using Balb/3T3 mouse embryonic fibroblast cells. Marquard H (1984) Science 223:1079. The ED50 for this effect is typically 0.1-0.5 ng/mL.

Endotoxin Level: <0.01 EU per 1 µg of the protein by the LAL method.

Purity: >96%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation: Lyophilized from a 0.2 µm filtered solution in acetonitrile and TFA with BSA as a carrier protein.

Preparation and Storage

Reconstitution: Reconstitute at 50-500 µg/mL in sterile PBS containing 1 mg/ml of human or serum albumin.

Shipping The product is shipped at ambient temperature or with wet ice. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage: Use a manual defrost freezer and avoid repeated freeze thaw cycles.

- 6 months, -20 °C as supplied.
- 3 months, -20 to -70°C under sterile conditions after reconstitution.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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NOT FOR USE IN HUMANS AND ANIMALS**