

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Ser21-Ser426 Accession # P08476
N-terminal Sequence Analysis	Ser21 (pro) & Gly311 (mature)
Structure / Form	Noncovalently-linked complex between disulfide-linked homodimer of the mature domain and noncovalently-linked homodimer of the prodomain
Predicted Molecular Mass	32 kDa (pro) & 13 kDa (mature)

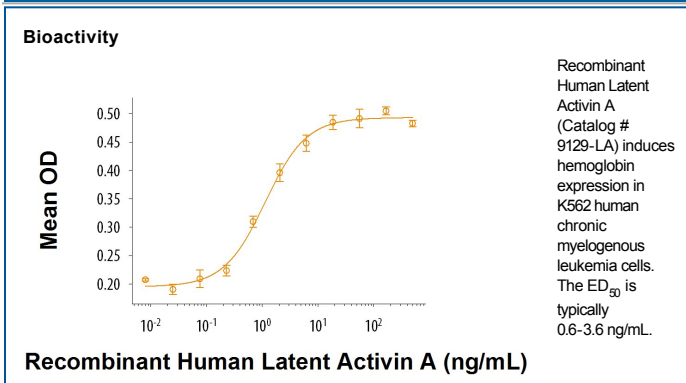
SPECIFICATIONS

SDS-PAGE	13-16 kDa (mature) and 39 - 46 kDa (pro), reducing conditions
Activity	Measured by its ability to induce hemoglobin expression in K562 human chronic myelogenous leukemia cells. Schwall, R.H. <i>et al.</i> (1991) <i>Method Enzymol.</i> 198 :340. The ED ₅₀ for this effect is typically 0.6-3.6 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

Activin and Inhibin are members of the TGF- β superfamily of cytokines and are involved in a wide range of biological processes including tissue morphogenesis and repair, fibrosis, inflammation, neural development, hematopoiesis, reproductive system function, and carcinogenesis (1-7). The amino terminal propeptides of Activin and Inhibin are proteolytically cleaved and facilitate formation of disulfide-linked dimers of the bioactive proteins (8, 9). The propeptide of Activin remains associated with the bioactive protein in a latent complex that retains the ability to bind its receptors (10). Activins are nonglycosylated homodimers or heterodimers of various β subunits (β A, β B, β C, and β E in mammals), while Inhibins are heterodimers of a unique α subunit and one of the β subunits. Activin A is a widely expressed homodimer of two β A chains. The β A subunit can also heterodimerize with a β B or β C subunit to form Activin AB and Activin AC, respectively (11). The 14 kDa mature human β A chain shares 100% amino acid sequence identity with bovine, feline, mouse, porcine, and rat β A. Activin A exerts its biological activities by binding to the type 2 serine/threonine kinase Activin RIIA which then noncovalently associates with the type 1 serine/threonine kinase Activin RIB/ALK-4 (7, 12). Signaling through this receptor complex leads to Smad activation and regulation of activin-responsive gene transcription (7, 12). The bioactivity of Activin A is regulated by a variety of mechanisms (12). BAMBI, Betaglycan, and Cripto are cell-associated molecules that function as decoy receptors or limit the ability of Activin A to induce receptor complex assembly (13-15). The intracellular formation of Activin A can be prevented by the incorporation of the β A subunit into Activin AC or Inhibin A (3, 11). And the bioavailability of Activin A is restricted by its incorporation into inactive complexes with α 2-Macroglobulin, Follistatin, and FLRG (16, 17).

References:

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