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Product Information

Activin B
human, recombinant
expressed in CHO cells

Catalog Number **A1729**
Storage Temperature –20 °C

Product Description

Recombinant, human Activin B is a chimeric protein expressed in Chinese hamster ovary (CHO) cells. The human prepro-Activin βA chain (amino acids residues 1-310) is fused to the human mature Activin βB chain.[1] Recombinant human mature Activin B is a disulfide-linked homodimer consisting of two βB subunits. Each monomer contains 115 amino acid residues. The calculated molecular mass is ~14.5 kDa.

Activins and inhibins, members of the TGF-β super-family, were originally purified from gonadal fluids as proteins that stimulated or inhibited, respectively, pituitary follicle stimulating hormone (FSH) release. Activins/inhibins are produced as precursor proteins with an amino-terminal propeptide that is cleaved to release the carboxy-terminal bioactive ligands. Activins are homodimers or heterodimers of the various β subunit isoforms, while inhibins are heterodimers of a unique α subunit and one of the various β subunits.[2] Five β subunits have been cloned (mammalian β_A, β_B, β_C, β_E, and *Xenopus* β_D). The activin/inhibin nomenclature reflects the subunit composition of the proteins: activin A (β_A-β_A), activin B (β_B-β_B), activin AB (β_B-β_A), inhibin A (α-β_A), and inhibin B (α-β_B). The mature human βB subunit is greater than 98% identical to mouse βB, while the human and mouse α subunits share ~80% amino acid sequence identity.

Activins have a wide range of biological activities including mesoderm induction,[3,4] neural cell differentiation, bone remodeling, hematopoiesis, and reproductive physiology. Activins influence erythropoiesis and the potentiation of erythroid colony formation, oxytocin secretion, paracrine, and autocrine regulation.[5]

Similar to other TGF-β family members, activins exert their biological activities through the effects of the heterodimeric complex composed of two membrane spanning serine-threonine kinases designated activin type I and type II receptors.[6] Activin type I and type II receptors are distinguished by the level of sequence homology of their kinase domains and other structural and functional features. Activins bind directly to activin receptor type II, this complex then associates with activin receptor type I and initiates signal transduction.[7]

Activin B is lyophilized from a 0.2 μm filtered solution of 30% acetonitrile and 0.1% trifluoroacetic acid (TFA) containing 50 μg of bovine serum albumin per 1 μg cytokine.

Purity: ≥90% (SDS-PAGE)

Activin B is measured by its ability to induce hemoglobin expression in K562 leukemic cells.[8]

Endotoxin: <1.0 EU (endotoxin unit)/μg cytokine
(LAL method)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the contents of the vial using 0.2 μm filtered phosphate buffered saline (PBS) containing 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 10 μg/ml.

Storage/Stability

Store the product at –20 °C.

The reconstituted product may be stored at 2–8 °C for up to one month. For prolonged storage, freeze in working aliquots. Avoid repeated freezing and thawing.

References

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