

INHIBIN B
Human, Recombinant
Expressed in CHO cells

Product Number I 3902

Product Description

Recombinant human Inhibin B is a disulfide-linked heterodimeric protein expressed in Chinese hamster ovary (CHO) cells. This product is produced from DNA sequences encoding the human inhibin/activin α subunit and the β_B subunit.¹ The mature α subunit, 134 amino acid residues, contains two N-linked glycosylation sites and has a calculated molecular mass of 14.7 kDa. The mature β_B subunit, 115 amino acid residues, lacks a potential N-linked glycosylation site and has a calculated molecular mass of 13 kDa. Due to heterogeneous glycosylation, the α chain migrates as two broad bands of approximately 20 kDa and 24 kDa in SDS-PAGE under reducing conditions.

Inhibin-B (α - β_B) was originally purified from gonadal fluids as proteins that inhibited pituitary follicle stimulating hormone (FSH) release.² Inhibins and activins are members of the TGF- β superfamily due to their amino acid homology with respect to the conservation of 7 of the 9 cysteine residues common to all TGF- β forms.³ Activins/inhibins are produced as precursor proteins with an amino-terminal propeptide that is cleaved to release carboxy-terminal bioactive ligands. Inhibins are heterodimers of a unique α subunit and one of the various β subunits.⁴ Five β subunits have been cloned (mammalian β_A , β_B , β_C , β_E , and *Xenopus* β_D).³ The inhibin nomenclature reflects the subunit composition of the proteins: inhibin A (α - β_A), and inhibin B (α - β_B). The mature human β_B subunit shares 97 % sequence identity to mouse β_B , while the human and mouse α subunits exhibit approximately 95 % identity. Cells known to express the β_B chain include anterior pituitary gonadotrophs, keratinocytes, Leydig cells, Sertoli cells, testicular interstitial cells, and ovarian granulosa cells.

Activins and inhibins have a wide range of biological activities including mesoderm induction^{6,7}, neural cell differentiation, bone remodeling, hematopoiesis, and reproductive physiology. They are involved in growth and differentiation of several tissues from different species.^{2,7,8,9} Inhibin A and inhibin B are capable of suppressing follicle-stimulating hormone (FSH) both *in vitro* and *in vivo*.¹⁰ Inhibins influence paracrine and autocrine regulation in follicle cell differentiation and

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steroidogenesis.^{5,9} The biological activity of inhibin resembles that of an activin antagonist acting as a gating molecule for activin signaling.⁸ Inhibins compete for the activin receptor and interact with high affinity and specificity with membrane-binding proteins.¹¹

Reagent

Inhibin B is supplied as approximately 10 μ g of protein lyophilized from a 0.2 μ m filtered solution in 35 % acetonitrile, 0.1 % trifluoroacetic acid (TFA) containing 0.5 mg bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing 0.1 % human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 50 μ g/ml.

Storage/Stability

Prior to reconstitution, store at -20 °C. Reconstituted product may be stored at 2 °C to 8 °C for at least one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing.

Product Profile

Inhibin B is measured by its ability to inhibit activin A induced hemoglobin expression in K562 leukemic cells.¹²

3 μ g/ml of recombinant human inhibin B will suppress recombinant human activin A (3 ng/ml) induced hemoglobin expression in K562 cells by 70 to 90 %.

Purity: >90 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin: <0.1 ng/ μ g determined by the LAL method.

References

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