Anti-Activin A
produced in goat, affinity isolated antibody

Catalog Number A1594

Product Description
Anti-Activin A is produced in goat using as immunogen a purified recombinant human Activin A, expressed in CHO cells. The antibody is purified using human Activin A affinity chromatography.

Anti-Activin A neutralizes human activin A and recognizes recombinant human activin A by direct ELISA, immunoblotting and immunohistochemistry.

Activin-A has been recognized for its range of activities involving growth and differentiation of several tissues from different species 1-3. It plays a key role in production and regulation of hormones such as FSH, LH, GnRH, and ACTH. Activin also influences erythropoiesis and the potentiation of erythroid colony formation, oxytocin secretion, paracrine, and autocrine regulation.4

Activin-A (βA,βA) is a disulfide-linked dimeric protein secreted by Sertoli cells in the testis and granulosa cell in the ovary. In the early studies, this peptide was thought to be an inhibin and not recognized as a unique compound.4,5 Activins and inhibins have been further characterized and include 3 separate peptides exhibiting a combination of +α, βA, and βB subunits. The C, D, and E-β subunits have also been cloned.4 Activins are homodimers or heterodimers made up of the β subunit isoforms. Mammalian activin-A is identified as the βA-βA form. Bovine, porcine, human, and murine activin-A demonstrates 98% homology. These compounds are classified as members of the TGF-β super family due to amino acid homology with respect to the conservation of 7 of the 9 Cysteine residues common to all TGF-β forms.4

Reagent
Lyophilized from 0.2 μm-filtered solution in phosphate buffered saline containing carbohydrates.

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

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

Preparation Instructions
To one vial of lyophilized powder, add 1 mL of 0.2 μm filtered phosphate buffered saline to produce a 0.1 mg/mL stock solution of antibody. If aseptic technique is used, no further filtration should be needed for use in cell culture environments.

Procedure
Neutralization of Bioactivity
Human Activin A induces hemoglobin expression in K562 cells in a dose dependent manner. To measure the ability of the antibody to neutralize the bioactivity, recombinant human activin A is incubated with various concentrations of the antibody for 1 hour at 37 °C in a 96 well plate. Following this preincubation period, K562 cells were added. The assay mixture in a total volume of 200 μL per well, containing antibody at the concentrations indicated (0.01 μg/mL-100 μg/mL), recombinant human activin A at 7.5 ng/ml, and cells at 2.5 x 10^4 cells/ml are incubated at 37 °C for 4 days in a humidified CO2 incubator. At the end of the incubation, the hemoglobin level in cell lysate is measured for its pseudoperoxidase activity. The ND50 is the concentration of antibody required to yield one-half maximal inhibition of the cytokine activity on a responsive cell line, when the cytokine is present at a concentration just high enough to elicit a maximum response.

Product Profile
Neutralization: a working antibody concentration of 2-6 μg/ml will neutralize 50% of the bioactivity due to 7.5 ng/ml recombinant human activin A using K562 cells.
Immunoblotting: a working antibody concentration of 0.1 μg/mL was determined.
Immunohistochemistry: a recommended antibody concentration of 5-15 μg/mL is determined using immersion fixed paraffin-embedded human breast cancer tissue.

Due to autofluorescence of tissues dissected from non-human primates, the use of fluorescent probes, such as FITC or Cy3™, is not recommended unless autofluorescence is quenched.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working dilutions by titration.

Endotoxin level is <10 ng per mg antibody as determined by the LAL method.

References

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