

#### DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human/Mouse/Rat                                                                                                                                                                                                                                   |
| <b>Specificity</b>                                                                                                                                                                                      | Detects recombinant human Activin A in ELISAs. Also recognizes Activin A precursor. The amino acid sequences of mature $\beta_A$ subunits from human, mouse and rat are identical. Therefore, this antibody will also detect the mature $\beta_A$ |
| <b>Source</b>                                                                                                                                                                                           | Monoclonal Mouse IgG <sub>1</sub> Clone # 69403                                                                                                                                                                                                   |
| <b>Purification</b>                                                                                                                                                                                     | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                        |
| <b>Immunogen</b>                                                                                                                                                                                        | Chinese hamster ovary cell line CHO-derived recombinant human Activin A                                                                                                                                                                           |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 350<br>Excitation Wavelength: 346 nm<br>Emission Wavelength: 442 nm                                                                                                                                                                   |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                                                                                                                                                                                      |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                                                                                                                                                                                   |

#### APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the Technical Information section on our website.

|                                                |                                                                        |
|------------------------------------------------|------------------------------------------------------------------------|
| <b>ELISA Capture (Matched Antibody Pair)</b>   | Optimal dilution of this antibody should be experimentally determined. |
| <b>ELISA Detection (Matched Antibody Pair)</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Neutralization</b>                          | Optimal dilution of this antibody should be experimentally determined. |

#### PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

#### BACKGROUND

Activin and Inhibin are members of the TGF- $\beta$  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). Activin and Inhibin are produced as precursor proteins. Their amino terminal propeptides are proteolytically cleaved and facilitate formation of disulfide-linked dimers of the bioactive proteins (8, 9). Activins are nonglycosylated homodimers or heterodimers of various  $\beta$  subunits ( $\beta_A$ ,  $\beta_B$ ,  $\beta_C$ , and  $\beta_E$  in mammals), while Inhibins are heterodimers of a unique  $\alpha$  subunit and one of the  $\beta$  subunits. Activin A is a widely expressed homodimer of two  $\beta_A$  chains. The  $\beta_A$  subunit can also heterodimerize with a  $\beta_B$  or  $\beta_C$  subunit to form Activin AB and Activin AC, respectively (10). The 14 kDa mature human  $\beta_A$  chain shares 100% amino acid sequence identity with bovine, feline, mouse, porcine, and rat  $\beta_A$ . 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, 11). Signaling through this receptor complex leads to Smad activation and regulation of activin-responsive gene transcription (7, 11). The bioactivity of Activin A is regulated by a variety of mechanisms (11). 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 (12-14). The intracellular formation of Activin A can be prevented by the incorporation of the  $\beta_A$  subunit into Activin AC or Inhibin A (3, 10). And the bioavailability of Activin A is restricted by its incorporation into inactive complexes with  $\alpha_2$ -Macroglobulin, Follistatin, and FLRG (15, 16).

#### PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.