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INTERNATIONAL

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Customer Service: 1-800 786 1236
Technical Service: 214 387 8105
Fax: 214 387 0870
Info@fabgennix.com
www.fabgennix.com

SMAD Anchor for Receptor Activation Protein (SARA) selective antibodies

Anti-SARA antibodies (SARA-101AP, SARA-112AP and SARA-121AP)

The transforming growth factor-beta (TGF-beta) super-family of proteins signaling involves the activation of TGF beta receptor activation by ligand binding that initiates the constitutively active type II receptor kinase to come in close proximity to its substrate, the type I receptor kinase (1). The kinase activity from the type II receptor phosphorylates the type I receptor. The type I receptor in turn phosphorylates one of the several transcription factor proteins (Smad). The activated Smads are then translocated to the nucleus and regulates the gene expression. The Smads are recruited to the receptor complex by an anchor protein, SARA (Smad anchor for Receptor Activation). In the nucleus, Smads regulate transcriptional responses by recruiting co-activators and co-repressors to a wide array of DNA-binding partners. The SARA is also known as Smad2 binding proteins. Thus, Smads function as transcriptional co-modulators to regulate TGFbeta-dependent gene expression. Therefore, the role of SARA in Smad signaling pathway is critical for transmitting transforming growth factor-beta (TGF-beta) super family signals from the cell surface to the nucleus (2). The SARA protein is also associated with several protein phosphatases that dephosphorylate and truncates the TGF beta signal transduction. One of the protein phosphatase that has been recently identified is PP1c. The SARA has a PP1c binding motif, disruption of this motif hyper phosphorylation of type 1 receptor and stimulated expression of a target of TGF beta signaling (1). Smad anchor for Receptor Activation (SARA) in drosophila melanogaster is a 1343 amino acid long protein with an apparent molecular weight of 165-167 kDa. The human homologue of this protein "Mothers Against decapentaplegic homologue interacting protein (MAD1_human) is larger than SARA (1425 amino acids) with at least two variants reported (MAD1 and MAD 2).

The Anti-SARA-selective antibodies were generated against conserved sequences near the N-terminal, mid-region and the C-terminal end of the proteins that are unique to SARA protein. The SARA selective antibodies were affinity purified against immobilized antigen based affinity chromatography and is epitope-specific antibodies. The polyclonal antibody strongly labels a 165-170kDa protein in D. melanogaster extracts. Anti-SARA-selective antibodies are also available in affinity-purified form for confocal, Western blotting and immunocytochemical analyses. *FabGennix Inc.* will also conjugate antibodies with fluorescent probes upon request at extra charge. *FabGennix Inc.* also provides antibodies against proteins that are involved Drosophila melanogaster research such as several Anti-PDE antibodies, Anti-Wishfulthinking, Anti-Baboon, Anti-Shadow, Anti-Shade, Anti-Saxophone, Anti-Phantom and Anti-Punt protein. FabGennix Inc employs cyclic peptide methodology for generating antibodies, which results in higher titer and specificity (6). FabGennix, Inc., will also provide Western blot positive controls for most of these antibodies in ready-to-use buffer for easy identification of respective proteins. Limited quantities of antigens are also available. Please enquire for their availability before ordering.

| Catalog # | Host Species | Nature | Cross reactivity | Quantity | Price |
|------------|--------------|----------------------------|------------------|----------|-------|
| SARA-101AP | Rabbit | Affinity purified Antibody | D. melanogaster | 100 µg | 225 |
| SARA-112AP | Rabbit | Affinity purified Antibody | D. melanogaster | 100 µg | 225 |
| SARA-121AP | Rabbit | Affinity purified Antibody | D. melanogaster | 100 µg | 225 |
| P-SARA101 | Rabbit | Antigeic peptide | inquire | 250 µg | 65 |
| P-SARA112 | N/A | Antigenic peptide | inquire | 250 µg | 65 |
| P-SARA121 | NA/A | Antigenic peptide | inquire | 250 µg | 65 |

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

Immunogen: Synthetic peptide for SARA antibodies are (SARA-101AP FROM AA 281-AA300; sara-112AP from AA341-363; SARA-121AP from AA 1061-1084). All peptides were amidated for conjugation.

Concentration: SARA-101A; SARA-112AP and SARA-121AP 0.75-1.2 mg/ml of antibody stabilization buffer

Applications: Antibody SARA-112AP and SARA-121AP are ideal for immunoprecipitation, western blotting, and immunocytochemistry assays. SARA-101AP immunoprecipitates poorly and weakly works in immunohisptchmistry applications. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay in his/her laboratory. All SARA antibodies work well in Western analyses.
Western blotting: > 1:500; Immunoprecipitation & i.p pull-down assays: > 1:200

Protocols: Standard protocol for various applications (Western blot; immunoprecipitation and immunohistochemistry) of this antibody is provided with the product specification sheet, however, FabGennix Inc. strongly recommends investigators to optimize conditions for use of this antibody in their laboratories.

References:

- Bennett D and Alphey L. PP1 Nature Genet. 22, 2002. Electronic publication. July 22, 2002.
- Attisano L and Wrana J. L. Curr. Opin. Cell Biol. 2000, 2, 235-243.

* For users who may require large amounts of SARA-101AP, SARA-112AP or SARA-121AP, please enquire about bulk material discounts.

This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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5850 Town and Country Blvd. Suite 301. Frisco, TX 75034

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