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Antibodies to Sestrin 3 (SESN3)

Sestrin 3 antibodies. Catalog # SESN-301AP, FITC-SESN3, P-SESN3, PC-SESN3

Accession # AAH17296 and Alternate Nomenclature: SEST3; MGC29667; SESN3

Sestrin 3 (SESN3), located at human chromosome 11q21, belongs to the sestrin family of proteins. These proteins are cysteine sulfanyl reductases and they modulate peroxide signaling and antioxidant defense (1). This family of proteins is only present in multicellular organisms ranging from nematodes to mammals. These proteins selectively reduce or repair hyperoxidized forms of typical 2-Cys peroxiredoxins within eukaryotes (2). Peroxiredoxins are the enzymes that metabolize peroxides. Expression of these proteins is regulated by p53, a tumor suppressor protein (3). Sestrin 3 was identified as a forkhead box O (FoxO) target gene with antioxidant activity (4). Recently it was reported that sestrin 3 may play an important role in AKT induced increase in ROS and it might be a promising target in selectively killing cancer cells containing high levels of AKT activity (5).

AKT is a protein kinase that is hyperactivated in cancer. This hyperactivity leads to an increase in intracellular ROS mainly by inhibiting the expression of ROS scavengers downstream of FoxO, such as sestrin 3 (4). This phenomenon was supported by the fact that AKT deficient cells contained high levels of sestrin 3 leading to low levels of ROS. Furthermore, downregulation of sestrin 3 restored ROS levels in these cells (5). Hyperactivation of AKT has been shown to promote uncontrolled cell growth and also protect cells from apoptosis (6). Inhibition of mRNAs from sestrin 3 as well as from sestrin 1 has also been shown to substantially increase intracellular ROS levels. This increase in ROS is linked to Ras-induced mutagenesis which is one of the most common events in cancer (7). Sestrin 3 is approximately a 38.5kDa protein (480 amino acids) in human and 59kDa protein (492 amino acids) in rat and mouse.

The SESN3-selective antibodies were generated using peptide corresponding to human Sestrin 3 protein. SESN3-antibodies are affinity purified over immobilized antigen based chromatography, and the purified immunoglobulins are stabilized in antibody stabilization buffer. FabGennix Int. Inc., will also provide limited quantities of antigenic blocking protein for SESN-301AP antibody. Antibodies to SESN3 (SESN-301AP) will label ~59kDa protein in Western blot positive control samples for SESN3 (PC-SESN3) and several other tissues. FabGennix Inc. will conjugate this and other antibodies from its catalog to either secondary enzymes (alk-Pase or HRP) or fluorescent probes at a nominal cost upon request. FabGennix also provides custom antibody production services for researchers that are looking for high affinity mono and polyclonal antibodies in various species. We specialize in making application specific antibodies that are useful in IHC, confocal and other applications where native antigen is detected. For a complete listing of all FabGennix antibodies please visit www.Fabgennix.com.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	Volume
SESN-301AP	Rabbit	Affinity purified SESN3 antibodies	h, r, m, others	100 ug	200ul
FITC- SESN3	Rabbit	FITC-conjugated SESN3 antibody	h, r, m, others	100ug	200ul
P- SESN3	n/a	Antigenic blocking peptide for SESN-301AP	n/a	250 ug	100ul
PC- SESN3	n/a	Western blotting positive control for SESN3	n/a	For 5 appl	Inquire

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

Immunogen: Synthetic peptides corresponding to unique epitope on SESN3. The SESN3 peptide was selected from N-terminal, amino acids 1-50. This peptide was covalently modified post-synthetically to achieve desired antigenicity.

Concentration: SESN-301AP: IgG concentration 0.68-0.80 mg/ml in antibody stabilization buffer.

Applications: Antibody SESN-301AP is ideal for WB and ELISA applications, other applications have not been tested. The species cross reactivity for these antibodies have not been examined fully. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay. WB: > 1:500; IMM & i.p pull-down assays: n.d; IHC n.d. ELISA <1:10,000. Application of this antibody in protocols not listed here does not necessarily exclude its use in such procedures.

Reactivity: This antibody detects a single band of approximately 59kDa in human sestrin 3 samples (PC- SESN3).

Protocols: Standard protocol for various applications (WB; IMM and IHC) 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.

Form/Storage: The antiserum is supplied in antibody stabilization buffer. The affinity-purified antibodies are isolated on immobilized antigen-affinity column and supplied as stabilized product. Store at -20°C for long-term storage. FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45um filter after every use for long-term storage.

Notes: Briefly centrifuge to collect liquid, heat or boil PC-SESN3 tube for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher MW immunoreactive bands.

New Reagents: Now you can recycle your western blots (nitrocellulose, supported membranes and PVDF membranes) by using our StripOBuffer (Cat FGI-1989).

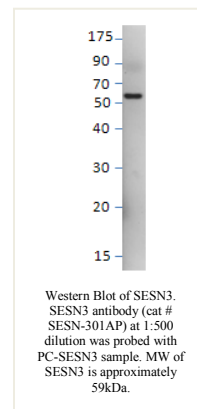
Each stripping is guaranteed to give better signal (up to 8 stripping). No strong pungent smell of reducing agents or heating required. Block in 5X diluOBuffer and you are ready for blotting with a new antibody

References:

- Meiller A, et al. p53-dependent stimulation of redox-related genes in the lymphoid organs of γ -irradiated mice-identification of Haeme-Oxygenase 1 as a direct p53 target gene. *Nucleic Acid Res.* November 2007; 35(20):6924-6934.
- Jonsson TJ, Lowther WT. The peroxiredoxins repair proteins. *Subcell Biochem.* 2007; 44:115-141.
- Budanov AV, et al. Regeneration of peroxiredoxins by p53-regulated sestrins, homologs by bacterial AhpD. *Science.* 23 April 2004; 304(5670):596-600.
- Nogueira U, et al. Akt determines replicative senescence and oxidative or oncogenic premature senescence and sensitizes cells to oxidative apoptosis. *Cancer Cell.* 9 December 2008; 14(6):458-470.
- Dolado I, Nebreda AR. AKT and oxidative stress team up to kill cancer cells. *Cancer Cell.* 9 December 2008; 14(6):427-429.
- Kandel ES, et al. Activation of Akt/protein kinase B overcomes a G(2)/m cell cycle checkpoint induced by DNA damage. *Mol Cell Biol.* 2002; 22:7831-7841.
- Kopin PB, et al. Repression of sestrin family genes contributes to oncogenic Ras-Induced ROS up-regulation and genetic instability. *Cancer Res.* 15 May 2007; 67(10):4671-4678.

* For users who may require large amounts of SESN-301AP, 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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