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# New Item New Item

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## Antibodies to Proteinases and convertases

### Napsin A (Aspartic Proteinases) antibodies (NAP-101AP, NAP-112AP, FITC- NAP, P-Nap100, P-Nap110 and PC-NAP)

Alternate Nomenclature: Aspartic Proteinase A; TA02

Napsin A gene codes for two aspartic proteinases precursor generally expressed in lungs and kidneys and its translational product is fully functional, glycosylated aspartic proteinase containing a RGF motif and an additional 18 residues at its C-terminal end. The Napsin B gene is expressed in exclusively in cells of the immune system and is expressed in several polymorphic form (1). Members of the aspartic protease family have been implicated in cancer progression. The aspartic protease napsin A is expressed in type II cells of the lung, where it is involved in the processing of surfactant protein B (SP-B). Napsin A expression in kidney is decrease in adenocarcinomas this result is consistent with earlier observations of loss of napsin A in high grade lung carcinomas (2). Mutation in the aspartic acid residue resulted in complete loss of enzymatic activity but it did not influence glycosylation, processing and intracellular localization. Re-expression of napsin A in HEK-293 cells inhibit the tumor growth by mechanism independent of aspartic proteinase activity (2).

Interstitial lung disease (ILD) ail lung in children represent a rare heterogeneous group of respiratory disorders characterized by restrictive lung disease and diffuse infiltrates. Mutations in the surfactant proteins (SP-A, SP-B, SP-C and SP-D) and in the ABC binding cassette protein A3 (ABCA3) are found to be associated with pediatric ILD (3). While SP-A and SP-D play essential roles in the pulmonary immune defense, SP-B and SP-C lower the surface-tension and facilitate formation and stabilization of the surfactant film in young lung. SP-B is expressed in type II non-ciliated bronchiolar epithelial cells in pre-protein of 381 amino acids. After removal of 23 amino acids form N-terminal end the pro-protein is proteolytically processed at the amino and carboxy terminal ends to mature SP-B protein of 79 amino acids by a cystein protease, cathapsin H and aspartylprotease Napsin (4). Napsin A is highly expressed in type II non-ciliated epithelial cells and is implicated in processing of the SP-B and SP-C pro-peptides (4).

The Napsin A-selective antibodies were made in rabbits using synthetic peptides corresponding to human Napsin A protein. Anti-Napsin A antibodies label a 50-53kDa protein in PC-NAP samples. Anti-Napsin A-selective antibody is available in affinity-purified form isolated by immobilized affinity chromatography for confocal, Western blotting and immunocyto emical analyses. A FITC-conjugated Napsin antibody is also available for direct application in IHC and confocal applications. *FabGennix Inc.* will also conjugate antibodies with other fluorescent probes upon request at a nominal charge. Limited quantitative of antigenic blocking peptides for napsin A antibody is also available. *FabGennix Inc.*, has a wide selection of antibodies to protein kinases, phosphatases, proteinases and convertases, for a complete listing please visit [www.FabGennix.com](http://www.FabGennix.com). *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	Volume	Qty
NAP-101AP	Rabbit	Affinity purified Napsin A antibodies (N-terminal)	R, M, H	200 0l	100ug
NAP-112AP	Rabbit	Affinity purified Napsin A antibodies (C-terminal)	R, M, H	200 ul	100ug
FITC-NAP	Rabbit	FITC-conjugated Napsin antibody	R, M, H	100ug	100ug
P-NAP100	n/a	Antigenic blocking peiotde for Nap-101AP	n/a	100ul	250ug
P-NAP110	n/a	Antigenic blocking petide for Nap-112AP	n/a	100ul	250ug
PC-NAP	n/a	Western blot positive control for NapsinA	n/a	inquire	5appl

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

**Immunogen:** The antigenic peptide for Napsin A corresponds to following sequences (Nap-101AP: and Nap-112AP: . These peptides were post-translationally modified to achieve proper orientation and antigenicity.

**Concentration:** Nap-101AP and Nap-112AP IgG concentration 0.85-1.25 mg/ml.

**Applications:** Antibody Nap-101AP and Nap-112AP are ideal for Western blotting, other applications (IMM, IHC or confocal microscopy) are not determined. The dilutions for these antibodies are 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.

**Reactivity:** This antibody detects a single of 52kDa of Napsin A protein in PC-Napsin A samples.

**Protocols:** Standard protocol for various applications (WB, IMM and IHC) of this antibody is provided with the product specification sheet, however, *FabGennix Int. Inc.*

**Form/Storage:** The antiserum is supplied in antibody stabilization buffer with 0.02% sodium azide. For long-term storage of antibodies, store at -20°C. *FabGennix Int. Inc.* does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DilUbuffer). Working solutions of antibodies in DilUbuffer should be filtered through 0.45u filter after every use for long-term storage.

#### References:

1. Tatnell,P.J., Powell,D.J., Hill,J., Smith,T.S., Tew,D.G. and Kay,J. Napsins: new human aspartic proteinases. Distinction between two closely related genes. JOURNAL FEBS Lett. 441 (1), 43-48 (1998).
2. Ueno T, Elmberger G, Weaver TE, Toi M, Linder S. The aspartic protease napsin A suppresses tumor growth independent of its catalytic activity. Lab Invest. 2008 Mar;88(3):256-63. Epub 2008 Jan 14. Links
3. Shulenin, S; Noguee, LM; Annilo, T; Wert, SE; Whitsett, JA; Dean, M. ABCA3 Gene Mutations in Newborns with Fatal Surfactant Deficiency. N Engl J Med. 2004;350:1296-1303. doi: 10.1056/NEJMoa032178
4. Brasch, F; Ochs, M; Kahne, T; Guttentag, S; Schauer-Vukasinovic, V; Derrick, M, et al. Involvement of napsin A in the C- and N-terminal processing of surfactant protein B in type-II pneumocytes of the human lung. Journal of Biological Chemistry. 2003;278:49006-49014. doi: 10.1074/jbc.M306844200.

**Notes:** Now Western blots can be stripped and recycled 6-8 times using our specially formulated StripObuffer (Cat # FGI-1989). This stripping buffer does not require heating or have any pungent smell. The membrane stripping is performed at room temperature in 7-10 minutes.

\*For users who may require large amounts of NARCI-101AP, 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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