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### D. melanogaster protein Phantom selective antibodies

#### Anti-Phantom antibodies (PHT-100P, PHT-101AP, PHT-110P, PHT-112AP, PHT-120P and PHT-121AP)

**F**ruit fly (*Drosophila melanogaster*) ovaries contains two set of germline stem cells surrounded by a group of highly differentiated somatic cells that express genes for two phenotypes (hedgehog & wingless). The TGF beta super family member, decapentaplegic (dpp) or its homologue BMP2/4 is specifically required for maintenance and promote its cell division in the female germline (1, 2). The Signaling by TGF beta-related factors requires ligand-induced association between type I and type II transmembrane receptors that have endogenous serine/threonine kinases activity. In *Drosophila*, the saxophone (sax) and thick veins (tkv) genes encode type I receptors that mediate signaling by decapentaplegic (dpp), a member of the bone morphogenetic protein (BMP) subgroup of TGF beta-type factors. Where as Punt and Wishful Thinking (wit) are type II receptors. Over expression or mutation in dpp suppress germline stem cell differentiation. Dpp actions are mediated by its receptor Saxophone. The Saxophone gene is expressed ubiquitously. The Saxophone gene also gives two products Brk43E and Berk25 and both gene products inter acts with TGF super family peptide ligands Dpp. Mutations that completely abolish Saxophone activity causes phenotype that are similar to partial or complete loss of activity of the dpp ligand. The saxophone products are also have serine/threonine kinase activity responsible for phsophorylation and activation of the ligands including pMAD, Screw (Scw), and short gastrulation protein (Sog). The mutant larvae showed small synapses, defective evoke potentials and slower vesicular release and changes in the ultra-structural architect (3). Mutations in the Phantom gene disrupts the neuronal remodeling in mushroom bodies (MBs) in fruit fly (4).

The Anti-Phantom-selective antibodies were generated against conserved sequences near the N-terminus and the C-terminal end of the protein that are unique to *D. melanogaster* Phantom protein. The Anti-Phantom-selective antibodies are affinity purified against immobilized antigen based affinity chromatography which yielded epitope-specific antibodies. Anti-Phantom-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 several antibodies against proteins that are involved *Drosophila melanogaster* research such as several Anti-PDE antibodies, Anti-Saxophone, Anti-Baboon, Anti-Shadow, Anti-Shade, Anti-SARA anchor protein, Anti-Wishful thinking, 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
PHT-100P	Rabbit	Rabbit Serum	<i>D. melanogaster</i>	100 µl	\$ 205.00
PHT-101AP	Rabbit	Affinity purified Antibody	<i>D. melanogaster</i>	100 µg	\$ 225.00
PHT-110P	Rabbit	Rabbit Serum			
PHT-112AP	Rabbit	Affinity purified Antibody	<i>D. melanogaster</i>	100 µl	\$ 225.00
PHT-120P	Rabbit	Rabbit Serum	<i>D. melanogaster</i>		
PHT-121AP	Rabbit	Affinity purified Antibody	<i>D. melanogaster</i>		
P-PHT101	Rabbit	Blocking antigenic peptide	Peptide	250 µg	\$ 65.00
P-PHT112	n/a	Blocking antigenic peptide	Peptide	250 µg	\$ 65.00
P-PHT121	n/a	Blocking antigenic peptide	Peptide	250 µg	\$ 65.00

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

**Immunogen:** Synthetic peptide for Saxophone antibodies are (WIT-101AP XXXXXXXXXXXXXXXXXXXX and; WIT-112APXXXXXXXXXXXXXXXXXXXXXXXXXXXX; All peptides were amidated for conjugation.

**Concentration:** WIT-101A; WIT-112AP 0.75-1.2 mg/ml of antibody stabilization buffer

**Applications:** Antibody WIT-101AP and WIT-112AP are ideal for immunoprecipitation, western blotting, and immunocytochemistry assays. 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:

1. Singer M. A., Penton A., Twombly V., Hoffmann F. M., Gelbert W. M. Signaling through both type I DPP receptors is required for anterior-posterior patterning of the entire *Drosophila* wing. *Development*. 124(1):79-89, 1997 Jan.
2. Xie T and Spradling A. C. decapentaplegic is essential for the maintenance and division of germline stem cells in the *Drosophila* ovary. *Cell* 94, 251-260, 1998.
- Marques G., Bao H et. al., *Neuron* 33, 529-543, 2002.

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Zheng X., Wang J., et al., Cell 112, 303-315, 2003.

\* For users who may require large amounts of SAX-101AP or SAX-112AP, 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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