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Anion Channel protein (Chloride Channel) antibodies

Anti-Bestrophin-2 (Vettliform macular dystrophy 2 VMD2 like protein) Best-201AP, P-Best2 and PC-Best2

In the recent past at least 3 different family for “chloride channel” have been characterized: CIC family, ligand gated channels for the GABA and glycine receptor family and the cystic fibrosis membrane conductance regulator. These chloride channels play important role in maintaining resting potentials, ion refluxes, acidification of internal organnles such as lysosomes in both excitatory and non-excitatory nerve and muscle cells. The bestrophins are a newly described family of “anion channels” unrelated in primary sequence to any previously characterized channel proteins. Bestrophins were originally defined as a family of over 20 related sequences of the *C. elegans*. The first mammalian bestrophin was identified as the vitelliform macular dystrophy (VMD), 1 also known as Best disease (1). Three more members of the bestrophin family members were cloned and identified recently, Bestrophin 2, 3 and 4.

The bestrophin family members are membrane protein with 2-TMD and have a conserved 350-400 amino domain including the invariant peptide motif RFP. Each of the Bestrophin proteins has a unique C-terminus that lack similarity to other proteins or motifs. Bestrophin 1 gene is localized to chromosome 19p13.2-p13.12, Bestrophin 2 to 1p32.3-p33 and Bestrophin 3 to 12q14.2-q15. RT-PCR analyses revealed tissue-restricted expression of the three genes with both Bestrophin 1 and Bestrophin 2 are abundantly transcribed in colon. Bestrophin 1 is present in the retinal pigment epithelium while Bestrophin 3 shows predominant expression in skeletal muscle (2, 3). Functionally the Bestrophins oligomerise to form tetramers and pentamers in order to act as calcium sensitive chloride channels. It has been shown that Bestrophin interacts with beta catalytic subunit of protein phosphatase 2A (PP2Ac). Such Protein-protein interaction between bestrophin and PP2Ac and the structural subunit of PP2A, PR65, was confirmed by reciprocal immunoprecipitation. The interaction between PP2Ac and the Bestrophin takes place near the Carboxy-terminal end of the protein. Okadic acid induce the phosphorylation of Bestrophin in vitro. Bestrophin also serves in the signal transduction pathway that modulates the light peak of the EOG, that is regulated by phosphorylation of the Bestrophin that in turn is regulated by protein phosphatase 2A (PP2A).

The Anti-Bestrophin 2-selective antibodies were generated against unique sequences near the C-terminal end of the proteins that are unique to Bestrophin 2 protein. The Bestrophin 2-selective antibodies were affinity purified against immobilized antigen based affinity chromatography and are represented as epitope-specific antibodies. The polyclonal antibodies strongly labels a 65 kDa protein in PC-Bst2 sample. *FabGennix Inc.* will also conjugate antibodies with fluorescent probes upon request at extra charge. *FabGennix Int. Inc.*, employs cyclic peptide methodology for generating high specificity and affinity antibodies (6). *FabGennix Int. 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 | Volume | price (US \$) |
|------------|--------------|--|------------------|----------|---------|---------------|
| Best-201AP | Rabbit | Affinity purified Bestrophin 2antibody | R, M, H, monk | 100 ug | 150 ul | 235 |
| P-Best 200 | n/a | Antigenic blocking peptide | n/a | 250 ug | 100 ul | 115 |
| PC-Best 2 | n/a | WB positive control | human/rat | 100ug | inquire | 185 |

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

Immunogen: Synthetic peptide for Bestrophin 2 antibodies are from the unique region close to c-terminal end (aa 388-404), the peptide was post-synthetically modified to achieve desired immunogenecity. The carboxy peptide Best-201AP were amidated before conjugation.

Concentration: Bst-201AP 0.75-1.2 mg/ml of antibody stabilization buffer

Applications: Antibody Bst-201AP is ideal for IMM and WB, IHC assays and other applictaions has not established. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay in his/her laboratory. For Bst-201AP: Western blotting: > 1:500; Immunoprecipitation & i.p pull-down assays: > 1:200; IHC n.d

Protocols: Standard protocol for various applications (WB, IMM, 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.

References:

- Marmorstein LY, McLaughlin PJ, Stanton JB, Yan L, Crabb JW, Marmorstein AD. J. Biol. Chemistry 2002; June 10, Electronic publication.
- Stohr H, Marquardt A, et. al., Eur J Hum Genet. 2002 Apr;10(4):281-4. Related Articles, Links
- Takashi Tsunenari , Hui Sun, John Williams, Hugh Cahill , Philip Smallwood, King-Wai Yau ** and Jeremy Nathans. J. Biol. Chem., Vol. 278, Issue 42, 41114-41125, October 17, 2003

Western blot of Bst-200P with PC-Bst2 positive control. MW od Bestrophin 1 is 64-67 kDa



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

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