

**Datasheet for 200-301-G03****Kv4.2 K<sup>+</sup> channel Antibody****Overview**

|                      |                                                                             |
|----------------------|-----------------------------------------------------------------------------|
| <b>Description:</b>  | Anti-Kv4.2 K <sup>+</sup> channel (MOUSE) Monoclonal Antibody - 200-301-G03 |
| <b>Item No.:</b>     | 200-301-G03                                                                 |
| <b>Size:</b>         | 100 µg                                                                      |
| <b>Applications:</b> | IHC, WB                                                                     |
| <b>Reactivity:</b>   | Mouse, Rat                                                                  |
| <b>Host Species:</b> | Mouse                                                                       |

**Product Details**

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Background:</b>   | The Kv4.2 potassium channel is a voltage-gated channel protein which belongs to the delayed rectifier class and to the Shal potassium channel subfamily. All of the KV channels can product delayed-rectifier and transient “A-type” currents, all members of the KV4 subfamily mediate IA. Kv4 channels in the central nervous system localize to the soma and dendrites, and therefore are responsible for the somato-dendritic A-type K <sup>+</sup> current (ISA). |
| <b>Synonyms:</b>     | RK5, Kv4.2, Shal1, Kcnd2, Potassium voltage-gated channel subfamily D member 2, Voltage-gated potassium channel subunit Kv4.2                                                                                                                                                                                                                                                                                                                                          |
| <b>Host Species:</b> | Mouse                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Clonality:</b>    | Monoclonal                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Clone ID:</b>     | S57-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Format:</b>       | IgG1                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Target Details**

|                        |                                                                                                                                                                                           |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name:</b>      | Kcnd2                                                                                                                                                                                     |
| <b>Reactivity:</b>     | Mouse, Rat                                                                                                                                                                                |
| <b>Immunogen Type:</b> | Conjugated Peptide                                                                                                                                                                        |
| <b>Immunogen:</b>      | Kv4.2 K <sup>+</sup> channel Antibody was produced in mice by repeated immunizations raised against a synthetic peptide corresponding to an extracellular S1-S2 loop region of rat Kv4.2. |

**Purity/Specificity:** Anti-Kv4.2 K+ channel Antibody was purified by Protein G chromatography. A BLAST analysis was used to suggest cross-reactivity with Kv4.2 K+ channel from Mouse and Rat based on 100% homology with the immunizing sequence. Cross-reactivity with Kv4.2 K+ channel from other sources has not been determined. Scaffolds research.

**Relevant Links:**

- [NCBI - NP\\_113918.2](#)
- [GeneID - 65180](#)
- [UniProtKB - Q63881](#)

## Application Details

**Tested Applications:** IHC, WB

**Application Note:** Anti-Kv4.2 K+ channel Antibody is tested for use in WB, IP, and IHC. Expect a band approximately ~75-80kDa on specific lysates. Specific conditions for reactivity should be optimized by the end user.

**Assay Dilutions:** All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.

**IF:** 1.0-10 ug/mL

**IHC:** 0.1-1.0 ug/mL

**IP:** User Optimized

**WB:** 1ug/mL

## Formulation

**Physical State:** Liquid (sterile filtered)

**Concentration:** 1mg/mL by UV absorbance at 280 nm

**Buffer:** 1X PBS, pH 7.4

**Preservative:** 0.09% (w/v) Sodium Azide

**Stabilizer:** 50% (v/v) Glycerol

## Shipping & Handling

**Shipping Condition:** Wet Ice

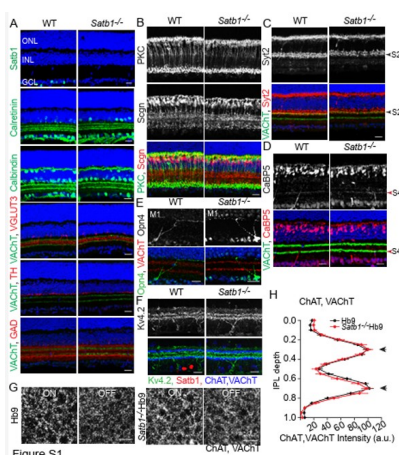
**Storage Condition:**

Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

**Expiration:**

Expiration date is one (1) year from date of receipt.

## Images

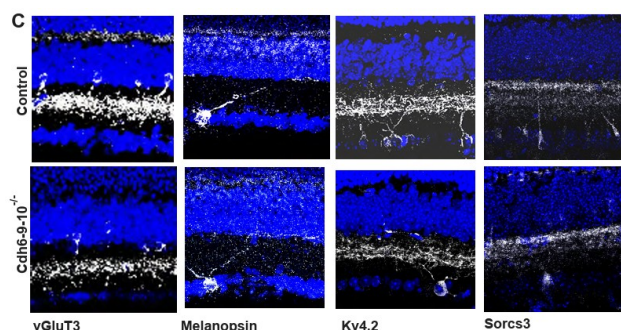


### Immunofluorescence Microscopy

Preserved retinal laminar patterning in the absence of Satb1. Related to Figure 2. (A-F) P18 wildtype (WT) and Satb1<sup>-/-</sup> retinas were stained with the indicated antibodies to label processes restricted to specific sublaminae in the IPL. Somata are labeled with DAPI (blue) in some sections. No differences between controls and mutants are detectable. VGLUT3, vesicular glutamate transporter 3; TH, tyrosine hydroxylase; GAD, glutamate decarboxylase; PKC, protein kinase C; Scgn, secretagogin; Syt2, synaptotagmin 2; CaBP5, calcium binding protein 5. Black and red arrowheads indicate S2 and S4 marked by Syt2 and CaBP5, respectively. The stratification of M1-ipRGCs and Kv4.2-positive RGCs were revealed by anti-Opn4 and anti-Kv4.2 staining, respectively. (G) En face views of ON and OFF plexus of starburst amacrine cells from P14 wildtype and Satb1<sup>-/-</sup> retinas, stained with anti-ChAT and anti-VACHT. (H) Mean intensity ( $\pm$  SEM) of VACHT-labeled SAC processes across the IPL from sections such as those in Fig. 2A (n=13 sections per genotype). 0 and 1 are borders of inner nuclear layer and ganglion cells layer, respectively. Peaks of ChAT + VACHT staining are shown as arrows. Scale bars represent 20  $\mu$ m.

Figure S1.

PMID: 28781169

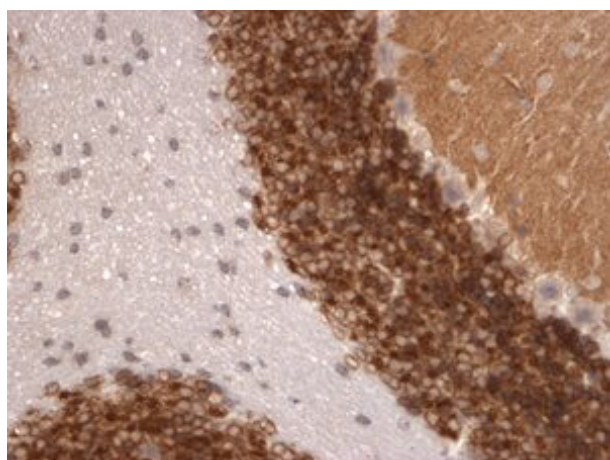


### Immunofluorescence Microscopy

(C) Cdh6, 9 and 10 are not required for formation of lamina specific arbors of VG3-ACs (VGlut3), Type 1 and 2 ipRGCs (melanopsin), S3-projecting RGCs (Kv4.2) or S1-projecting RGCs (Sorcs3; see (Liu et al., 2018)).

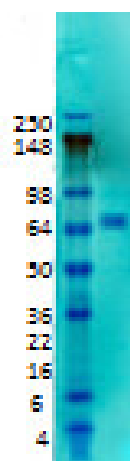
Figure S2.

PMID: 30197236



### Immunohistochemistry

Immunohistochemistry of mouse anti-Kv4.2 K<sup>+</sup> Channel antibody. Tissue: Mouse Cerebellum. Primary Antibody: Kv4.2 K<sup>+</sup> Channel antibody at 1 µg/mL for 1h at RT. Secondary antibody: Peroxidase mouse secondary at 1:10,000 for 45 min at RT. Localization: Cell membrane and dendrite. Staining: Kv4.2 K<sup>+</sup> Channel as brown signal.



### Western Blot

Western Blot of mouse anti-Kv4.2 K<sup>+</sup> Channel antibody. Lane 1: Rat Brain Membrane Tissue. Primary antibody: Kv4.2 K<sup>+</sup> Channel antibody at 1:1000 for overnight at 4°C. Secondary antibody: Goat anti-mouse IgG HRP secondary antibody at 1:10,000 for 45 min at RT. Block: 5% Biotin overnight 4°C. Predicted/Observed size: 65.8 kDa/110kD. Other band(s): none.

## References

- Duan X et al. Cadherin combinations recruit dendrites of distinct retinal neurons to a shared interneuronal scaffold. *Neuron*. (2018)
- Peng et al. Satb1 Regulates Contactin 5 to Pattern Dendrites of a Mammalian Retinal Ganglion Cell. *Neuron* (2017)

## Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.