

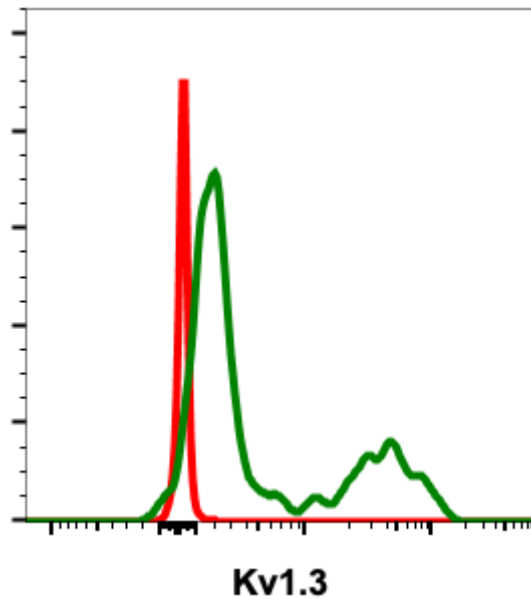
For Research Use Only. Not For Use In Diagnostic Procedures.

| Applications   | Detection       | Clonality  | Isotype     |
|----------------|-----------------|------------|-------------|
| Flow Cytometry | Anti-Rabbit IgG | Monoclonal | Rabbit IgGk |

|                           |  |
|---------------------------|--|
| <b>Format:</b>            | Unconjugated   |
| <b>Cross Reactivity:</b>  | Predicted to work with mouse, rat and other homologues.  |
| <b>Formulation:</b>       | 1X PBS, 0.1% BSA and 0.025% azide  |
| <b>Preparation:</b>       | Protein A+G  |
| <b>Reactivity:</b>        | Human  |
| <b>Recommended Usage:</b> | For flow cytometric staining, the suggested use of this reagent is 5 $\mu$ L per million cells or 5 $\mu$ L per 100 $\mu$ L of staining volume. It is recommended that the reagent be titrated for optimal performance for each application. See product image legends for additional information.   |
| <b>Immunogen:</b>         | Synthetic peptide  |
| <b>Description:</b>       | <p>Voltage-gated potassium channels (Kv) are integral membrane proteins, which are selectively permeable for potassium ions and are activated upon a change of cell membrane voltage. Activation of these membrane embedded proteins facilitate transportation of potassium ions across cell membrane down their electrochemical gradients. Kv1.3 is a classical Shaker-type potassium channel with six transmembrane segments (1), was first discovered in one of the non-excitabile cells, T lymphocytes (2). KV1.3 are expressed in human T and B lymphocytes, macrophages, fibroblasts, platelets, osteoclasts, microglia, oligodendrocytes, brain (e.g., olfactory bulb, hippocampus, and cerebral cortex), lung islets, thymus, spleen, lymph nodes, and testis (3). It is also expressed in the inner mitochondrial membrane (mito Kv1.3) of normal T lymphocytes and cancer cells (4). Kv1.3 is the first K<sup>+</sup> channel to be identified outside electrically excitable tissues. Kv1.3 in T lymphocytes is responsible for controlling the membrane potential which is critical for the activation of these immune cells.</p> <p>Kv1.3 plays an important role in cell proliferation and apoptosis. The channel activity is inhibited by many chemically unrelated compounds: heavy-metal cations, small-molecule organic compounds and venom-isolated oligopeptides (3, 5). The most potent specific inhibitors inhibit the channel at sub nanomolar concentrations (7). Inhibition of Kv1.3 channel by specific inhibitors may be beneficial in therapy of T-lymphocyte-mediated autoimmune diseases (e.g., sclerosis multiplex, type I diabetes mellitus, rheumatoid arthritis, psoriasis), chronic renal failure, asthma, obesity, type II diabetes mellitus, cognitive disabilities, and some cancer disorders (7).</p> |

## References:

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2. Chiang EY, et al., (2017) Nat. Commun. 8:14644. 10.1038/ncomms14644
3. Gutman G, et al. (2005) Pharmacol Rev (2005) 67:473-508.
4. Szabo I, et al.. (2005) J Biol Chem. (2005) 280:12790-12798.
5. Panyi G, et al., (2006) Curr Pharm Des. 12:2199-220.
6. Serrano-Albarras A, et a., (2018) Exp Opin Therapeut Targets. 22:101-105.
7. Teisseyre A, et al., (2015) Adv Clin Exp Med. 24:517-524.



Flow cytometric analysis of HEK293 cells transfected with Kv1.3 (green) or untransfected (red) using Kv1-3-26B-R4-D9 antibody at 1 ug/mL (Cat. #2556). This antibody shows specific binding only to cells transfected with Kv1.3.