

## Product datasheet

# Anti-KCNQ1 antibody [S37A-10] ab84819

1 References [画像数 3](#)

### 製品の概要

製品名	Anti-KCNQ1 antibody [S37A-10]
製品の詳細	Mouse monoclonal [S37A-10] to KCNQ1
アプリケーション	<b>適用あり:</b> IP, Flow Cyt, IHC-P, IHC-Fr, WB, ICC/IF
種交差性	<b>交差種:</b> Mouse, Rat, Human
免疫原	Fusion protein: AAASSPPRAE RKRWGWGRLP GARRGSAGLA KKCPFSLELA EGGPAGGALY APIAPGAPGP APPASPAAPA APPVASDLGP RPPVSLDPRV SIYSTRRPVL, corresponding to amino acids 2-101 of Human KCNQ1 (accession number: P51787) <a href="#">Run BLAST with ExPASy</a> <a href="#">Run BLAST with NCBI</a>
ポジティブ・コントロール	Lysate from transfected COS-1 cells transiently expressing KCNQ1.

### 製品の特性

製品の状態	Liquid
保存方法	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid repeated freeze / thaw cycles.
バッファー	Preservative: 0.09% Sodium Azide Constituents: 50% Glycerol, PBS, pH 7.4
精製度	Protein G purified
ポリ/モノ	モノクローナル
クローン名	S37A-10
アイソタイプ	IgG1

### アプリケーション

Our [Abpromise guarantee](#) covers the use of **ab84819** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

アプリケーション	Abreviews	特記事項
IP		Use at an assay dependent concentration.

アプリケーション	Abreviews	特記事項
Flow Cyt		Use 1µg for 10 <sup>6</sup> cells. <a href="#">ab170190</a> -Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.
IHC-P		Use a concentration of 0.1 - 1 µg/ml.
IHC-Fr		Use a concentration of 0.1 - 1 µg/ml.
WB		Use a concentration of 1 - 10 µg/ml. Predicted molecular weight: 75 kDa.
ICC/IF		Use a concentration of 1 - 10 µg/ml.

## ターゲット情報

### 機能

Potassium channel that plays an important role in a number of tissues, including heart, inner ear, stomach and colon (By similarity) (PubMed:10646604). Associates with KCNE beta subunits that modulates current kinetics (By similarity) (PubMed:9312006, PubMed:9108097, PubMed:8900283, PubMed:10646604, PubMed:11101505, PubMed:19687231). Induces a voltage-dependent by rapidly activating and slowly deactivating potassium-selective outward current (By similarity) (PubMed:9312006, PubMed:9108097, PubMed:8900283, PubMed:10646604, PubMed:11101505). Promotes also a delayed voltage activated potassium current showing outward rectification characteristic (By similarity). During beta-adrenergic receptor stimulation participates in cardiac repolarization by associating with KCNE1 to form the I(Ks) cardiac potassium current that increases the amplitude and slows down the activation kinetics of outward potassium current I(Ks) (By similarity) (PubMed:9312006, PubMed:9108097, PubMed:8900283, PubMed:10646604, PubMed:11101505). Muscarinic agonist oxotremorine-M strongly suppresses KCNQ1/KCNE1 current (PubMed:10713961). When associated with KCNE3, forms the potassium channel that is important for cyclic AMP-stimulated intestinal secretion of chloride ions (PubMed:10646604). This interaction with KCNE3 is reduced by 17beta-estradiol, resulting in the reduction of currents (By similarity). During conditions of increased substrate load, maintains the driving force for proximal tubular and intestinal sodium ions absorption, gastric acid secretion, and cAMP-induced jejunal chloride ions secretion (By similarity). Allows the provision of potassium ions to the luminal membrane of the secretory canaliculus in the resting state as well as during stimulated acid secretion (By similarity). When associated with KCNE2, forms a heterooligomer complex leading to currents with an apparently instantaneous activation, a rapid deactivation process and a linear current-voltage relationship and decreases the amplitude of the outward current (PubMed:11101505). When associated with KCNE4, inhibits voltage-gated potassium channel activity (PubMed:19687231). When associated with KCNE5, this complex only conducts current upon strong and continued depolarization (PubMed:12324418). Also forms a heterotetramer with KCNQ5; has a voltage-gated potassium channel activity (PubMed:24855057). Binds with phosphatidylinositol 4,5-bisphosphate (PubMed:25037568).

Isoform 2: Non-functional alone but modulatory when coexpressed with the full-length isoform 1.

### 組織特異性

Abundantly expressed in heart, pancreas, prostate, kidney, small intestine and peripheral blood leukocytes. Less abundant in placenta, lung, spleen, colon, thymus, testis and ovaries.

### 関連疾患

Long QT syndrome 1  
 Jervell and Lange-Nielsen syndrome 1  
 Atrial fibrillation, familial, 3

Short QT syndrome 2  
Diabetes mellitus, non-insulin-dependent

**配列類似性**

Belongs to the potassium channel family, KQT (TC 1.A.1.15) subfamily, Kv7.1/KCNQ1 sub-subfamily.

**ドメイン**

The segment S4 is probably the voltage-sensor and is characterized by a series of positively charged amino acids at every third position.

The coiled-coil domain mediates tetramerization.

The segment S6 is involved in the inhibition of voltage-gated potassium channel activity by KCNE4.

The C-terminal assembly domain promotes self-interaction; allows functional channel.

**翻訳後修飾**

Phosphorylation at Ser-27 by PKA; increases delayed rectifier potassium channel activity of the KCNQ1-KCNE1 complex through a macromolecular complex that includes PKA, PP1, and the targeting protein AKAP9.

Ubiquitinated by NEDD4L; promotes internalization (PubMed:22024150). The ubiquitinated form is internalized through a clathrin-mediated endocytosis by interacting with AP2M1 and is recycled back to the cell membrane via RAB4A and RAB11A (PubMed:23529131).

Deubiquitinated by USP2; counteracts the NEDD4L-specific down-regulation of I(Ks) and restores the membrane localization.

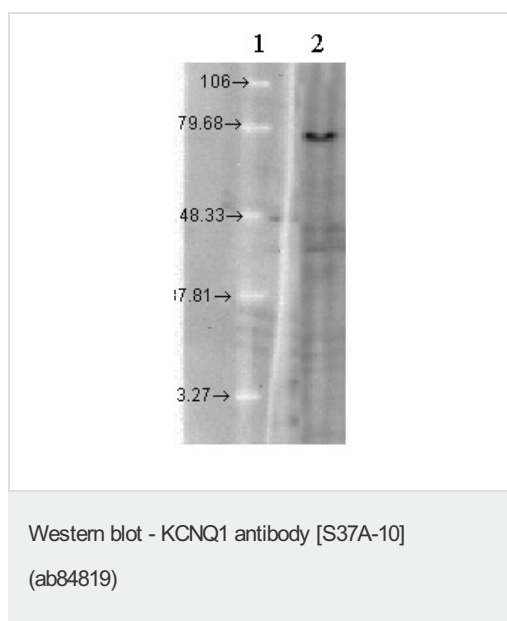
**細胞内局在**

Cell membrane. Cytoplasmic vesicle membrane. Early endosome. Membrane raft. Endoplasmic reticulum. Basolateral cell membrane. Colocalized with KCNE3 at the plasma membrane (PubMed:10646604). Upon 17beta-oestradiol treatment, colocalizes with RAB5A at early endosome (PubMed:23529131). Heterotetramer with KCNQ5 is highly retained at the endoplasmic reticulum and is localized outside of lipid raft microdomains (PubMed:24855057). During the early stages of epithelial cell polarization induced by the calcium switch it removed from plasma membrane to the endoplasmic reticulum where it retained and it is redistributed to the basolateral cell surface in a PI3K-dependent manner at a later stage (PubMed:21228319).

**製品の状態**

There are 2 isoforms produced by alternative splicing. Isoform 2 also known as: TKvLQT1.

**画像**

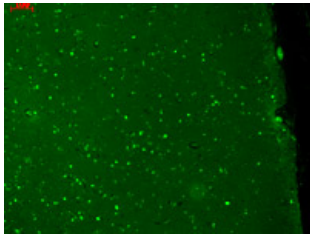


**All lanes :** Anti-KCNQ1 antibody [S37A-10]  
(ab84819) at 1 µg/ml

**Lane 1 :** Molecular weight marker

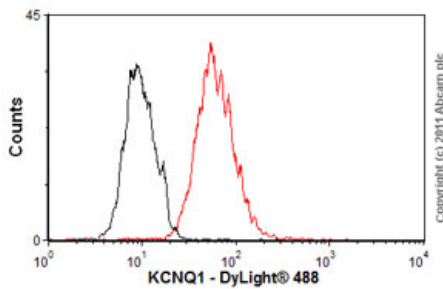
**Lane 2 :** Cell lysates prepared from CHO-T  
cells transfected with mink-KvLQT1

**Predicted band size :** 75 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - KCNQ1 antibody [S37A-10] (ab84819)

ab84819 staining KCNQ1 in human hippocampal tissue by IHC-P (Bouin's fixative fixed paraffin embedded). The sample was incubated with primary antibody at 100 and with a fluorophore conjugated anti mouse secondary at 1/50 dilution.



Flow Cytometry-Anti-KCNQ1 antibody [S37A-10] (ab84819)

Overlay histogram showing HEK293 cells stained with ab84819 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab84819, 1 $\mu$ g/1x10<sup>6</sup> cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2 $\mu$ g/1x10<sup>6</sup> cells) used under the same conditions. Acquisition of >5,000 events was performed.

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