

PRODUCT INFORMATION

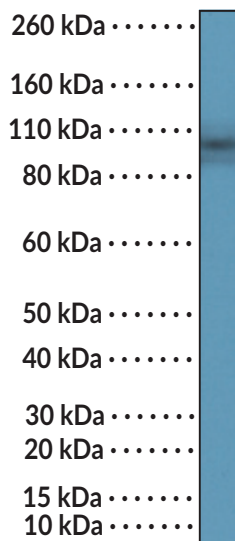
TMEM16A Rabbit Monoclonal Antibody (Clone RM440)

Item No. 35619

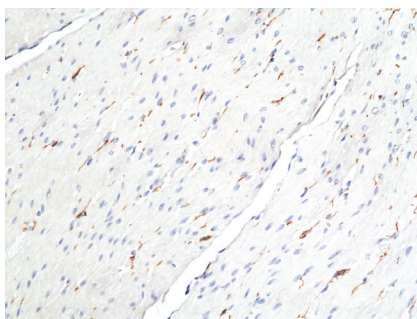
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonym:	Transmembrane Protein 16A
Immunogen:	Peptide corresponding to the internal region of TMEM16A
Cross Reactivity:	(+) TMEM16A
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM440
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC); the recommended starting dilution is 1:100–1:400. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

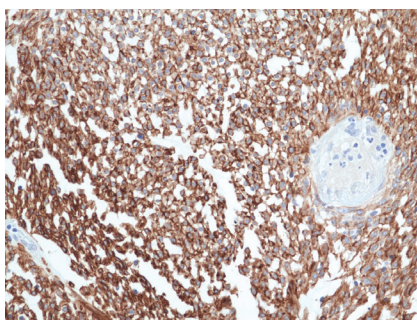
Images



WB of human small intestine lysate using TMEM16A Rabbit Monoclonal Antibody (Clone RM440) at a dilution of 1:200.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human colon tissue using TMEM16A Rabbit Monoclonal Antibody (Clone RM440) at a 1:100 dilution.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human gastrointestinal stroma tissue using TMEM16A Rabbit Monoclonal Antibody (Clone RM440) at a 1:100 dilution.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM

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Description

Transmembrane protein 16A (TMEM16A), also known as anoctamin-1 (ANO1) or discovered on gastrointestinal stromal tumors 1 (DOG1), is a calcium-activated chloride channel (CaCC) encoded by ANO1 that has roles in several cellular functions, including proliferation, survival, and migration, as well as cell secretion and airway and vascular smooth muscle contraction.¹ It exists as a homodimer where each monomer is composed of cytosolic N- and C-terminal domains and a transmembrane domain that has ten membrane-spanning segments, which contain the calcium-binding sites and form the ion channel pore.^{2,3} It is expressed by a variety of cells, including epithelial, vascular endothelial, neuronal, smooth muscle, and myocardial cells, and localizes to the plasma membrane.^{1,4} TMEM16A levels are increased by several stimuli, including IL-4, IL-6, and IL-13, as well as EGF, angiotensin II, and LPS, in a cell-dependent manner.¹ TMEM16A activation is induced by increased intracellular calcium levels, which occurs *via* calcium influx through calcium-permeable ion channels or calcium release from the endoplasmic reticulum.⁵ It induces chloride ion transport, the direction of which is dependent on the membrane potential and intracellular chloride concentration, which modulates numerous cellular processes, including membrane depolarization and EGFR, ERK1/2, and NF-κB signaling pathways.^{1,4} Intratumoral TMEM16A protein expression is increased relative to adjacent normal tissue and associated with lymph node metastasis and reduced overall survival in patients with gastric cancer.⁶ Cayman's TMEM16A Rabbit Monoclonal Antibody (Clone RM440) can be used for immunohistochemistry (IHC).

References

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2. Ji, Q., Guo, S., Wang, X., *et al.* Recent advances in TMEM16A: Structure, function, and disease. *J. Cell. Physiol.* **234**(6), 7856-7873 (2019).
3. Nowicka-Bauer, K. and Szymczak-Cendrak, M. Structure and function of ion channels regulating sperm motility—An overview. *Int. J. Mol. Sci.* **22**(6), 3259 (2021).
4. Bai, W., Liu, M., and Xiao, Q. The diverse roles of TMEM16A Ca²⁺-activated Cl⁻ channels in inflammation. *J. Adv. Res.* **33**, 53-68 (2021).
5. Wang, H., Zou, L., Ma, K., *et al.* Cell-specific mechanisms of TMEM16A Ca²⁺-activated chloride channel in cancer. *Mol. Cancer* **16**(1), 152 (2017).
6. Liu, F., Cao, Q.-H., Lu, D.-J., *et al.* TMEM16A overexpression contributes to tumor invasion and poor prognosis of human gastric cancer through TGF-β signaling. *Oncotarget.* **6**(13), 11585-11599 (2015).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
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FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM