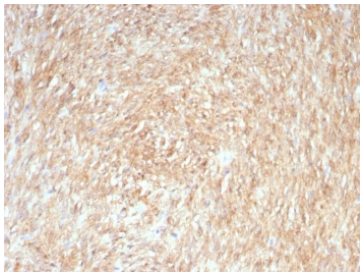
ANO1 Antibody / DOG1 / TMEM16A [clone rDG1/8750] (V5844)

Catalog No.	Formulation	Size
V5844-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V5844-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V5844SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

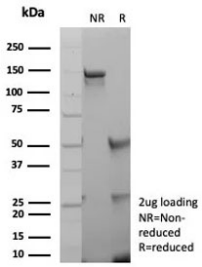
Recombinant MOUSE MONOCLONAL

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG2b, kappa
Clone Name	rDG1/8750
Purity	Protein G affinity chromatography
UniProt	Q5XXA6
Gene ID	55107
Localization	Cell Surface and Cytoplasmic
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This recombinant ANO1 antibody is available for research use only.



Immunohistochemistry analysis of ANO1 (TMEM16A) expression. ANO1 antibody (clone rDG1/8750) staining was performed on formalin-fixed, paraffin-embedded human gastrointestinal stromal tumor tissue, showing diffuse DAB-positive staining throughout tumor cells, consistent with ANO1 expression in GIST, with hematoxylin counterstaining. Heat-induced epitope retrieval was carried out by boiling tissue sections in Tris buffer (10 mM, pH 9.0) containing EDTA (1 mM) for 10-20 minutes, followed by cooling at room temperature for 20 minutes, and signal detection was achieved using an HRP-conjugated secondary antibody and DAB chromogen.



SDS-PAGE analysis of purified, BSA-free recombinant ANO1 antibody (clone rDG1/8750) as confirmation of integrity and purity.

Description

ANO1 antibody targets Anoctamin 1, also known as TMEM16A and widely referred to as DOG1, a calcium-activated chloride channel encoded by the ANO1 gene. TMEM16A is a multi-pass transmembrane protein predominantly localized to the plasma membrane, where it mediates chloride ion transport in response to intracellular calcium signals. ANO1 is highly expressed in epithelial cells, smooth muscle cells, and interstitial cells of Cajal, reflecting its important role in epithelial secretion, smooth muscle contraction, and gastrointestinal motility.

Functionally, Anoctamin 1 operates as a calcium-activated chloride channel that regulates membrane excitability, fluid secretion, and signal transduction. A short functional summary is that ANO1 converts calcium signaling into chloride flux, thereby influencing electrical activity and contractile behavior in diverse tissues. Through this mechanism, TMEM16A contributes to processes such as airway surface liquid regulation, vascular tone, and gastrointestinal pacing activity.

At the molecular level, ANO1 contains multiple transmembrane domains that form the ion conduction pathway and calcium-binding regions required for channel activation. Channel activity is tightly regulated by intracellular calcium concentration and membrane potential. ANO1 antibody reagents are therefore valuable tools for studying ion channel expression, membrane localization, and regulation in physiological and disease related contexts. Clone rDG1/8750 is designed to recognize TMEM16A and supports consistent detection of ANO1 expression in research applications.

From a biological and disease relevance perspective, ANO1 has gained particular importance as a diagnostic marker in gastrointestinal stromal tumors, where DOG1 expression is frequently used to aid tumor identification. Altered ANO1 activity or expression has also been implicated in cancer progression, airway disease, and smooth muscle dysfunction. Clone rDG1/8750 provides a reliable reagent for examining Anoctamin 1 expression in studies of cancer biology, epithelial physiology, and ion channel regulation.

Developmentally, TMEM16A expression is regulated in a tissue-specific manner and is required for normal development of excitable and secretory tissues. ANO1 antibodies from NSJ Bioreagents are supplied for research use to support investigations in ion channel biology, pathology, and translational research.

Application Notes

The concentration stated for each application is a general starting point. Variations in protocols, secondaries and substrates may require the recombinant ANO1 antibody to be titered up or down for optimal performance.

1. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

A recombinant human full length protein was used as the immunogen for this recombinant ANO1 antibody.

Storage

Store the recombinant ANO1 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

References (1)

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