Calcium Activated Chloride Channels

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structure summary. The Calcium-Dependent Chloride Channel (Ca-ClC) proteins (or calcium-activated chloride channels (CaCCs), are heterogeneous groups of ligand-gated ion channels for chloride that have been identified in many epithelial and endothelial cell types as well as in smooth muscle cells.

Calcium-dependent chloride channel - Wikipedia
Calcium required for gating of calcium activated chloride channels (CaCC) in dorsal root ganglion (DRG) neurons can be provided by different sources: activation of G-protein coupled receptors (GPCR) coupled to G q/11 G-proteins triggers phospholipase C (PLC) activity.

Calcium-activated chloride channels: Potential targets for ...
Abstract Calcium-activated chloride channels (CaCCs) play important roles in cellular physiology, including epithelial secretion of electrolytes and water, sensory transduction, regulation of neuronal and cardiac excitability, and regulation of vascular tone.This review discusses the physiological roles of these channels, their mechanisms of regulation and activation, and the mechanisms of ...

CALCIUM-ACTIVATED CHLORIDE CHANNELS | Annual Review of ...
Show »« Hide. Chloride channels activated by intracellular calcium (CaCC) are widely expressed in excitable and non-excitable cells where they perform diverse functions [8]. The molecular nature of CaCC has been uncertain with both CLCA, TWEETY and BEST genes having been considered as likely candidates [5,9,12].

Calcium activated chloride channel | Ion channels | IUPHAR ...
Calcium-activated Chloride Channels. Calcium-activated chloride channels (CaCC) are widely expressed in excitable and non-excitable cells. They are defined by anion selectivity, activated by intracellular calcium and modulated by CaMKII and calcineurin. CFTR.

Calcium-activated Chloride Channels - Tocris Bioscience
Calcium-activated chloride channel is used as a generic abbreviation referring to Ca 2+-activated Cl − channels in general. CLCA refers to a gene family containing several members (hCLCA1–4 in humans and mCLCA1–4 in mice) that have been proposed as molecular candidates for calcium-activated chloride channel (see text).

Calcium-activated Chloride Channels | (Un)known, (Un)loved ...
An aminothiophene that inhibits Calcium-activated Chloride Channel (CaCC) current influx induced by multiple calcium-elevating agonists (IC50 = 10 µM) without inhibiting calcium elevation, and CaMKII and CFTR activity. Inhibits CaCC chloride response following agonist stimulation in human bronchial and intestinal epithelial cells.

Calcium-activated Chloride Channel Inhibitor, CaCCinh-A01 ...
Abstract. The calcium-activated chloride channel TMEM16A is a ligand-gated anion channel that opens in response to an increase in intracellular Ca 2+ concentration 1,2,3. The protein is broadly expressed 4 and contributes to diverse physiological processes, including transepithelial chloride transport and the control of electrical signalling in...

Activation mechanism of the calcium-activated chloride ...
Calcium-Activated Chloride Channels. Calcium-activated chloride channels (CaCCs) also serve a broad range of physiological functions by regulating the electrical potential across the cell membrane and the flow of salt and water across epithelia.

Potassium Channels and Calcium-Activated Chloride Channels ...
Ca 2+ -activated Cl − channels at a glance. Cl − channels are membrane proteins that are responsible for the passive flow of Cl − into and out of the cell. The Ca 2+ -activated Cl − channels (CaCCs) are attracting a lot of attention lately. The molecular identity of these channels remained

elusive (for a review, see Hartzell et al.,...

Ca2+-activated Cl− channels at a glance
Calcium-activated chloride channels (CaCCs) are widely expressed in various tissues and implicated in physiological processes such as sensory transduction, epithelial secretion, and smooth muscle contraction. Transmembrane proteins with unknown function 16 (TMEM16A) has recently been identified as a major component of CaCCs.

International Union of Basic and Clinical Pharmacology ...
Supplementary video from the paper "Activation mechanism of the calcium-activated chloride channel TMEM16A revealed by cryo-EM," authored by Cristina Paulino, Valeria Kalienkova, Andy K. M. Lam ...

Calcium-activated chloride channel TMEM16A
From a functional viewpoint, several different types of chloride channels showing different electrophysiological and regulatory characteristics have been described. These can be loosely grouped into five categories: cAMP-, calcium-, volume- and voltage-activated chloride channels as well as ligand-gated chloride channels.

Chloride Channels | Sigma-Aldrich
Calcium-activated chloride channels (CaCCs) are widely expressed in various tissues and implicated in physiological processes such as sensory transduction, epithelial secretion, and smooth muscle contraction. Transmembrane proteins with unknown function 16 (TMEM16A) has recently been identified as a major component of CaCCs. Detailed molecular analysis of TMEM16A will be needed to understand ...

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