

# CONTENTS · THE JOURNAL OF General Physiology

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VOLUME 117 · NUMBER 5 · MAY 2001

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- 373 JILL THOMPSON and TED BEGENISICH. Affinity and location of an internal K<sup>+</sup> ion binding site in *Shaker* K channels
- 385 BHAVNA TANNA, WILLIAM WELCH, LUC RUEST, JOHN L. SUTKO, and ALAN J. WILLIAMS. Ryanoid modification of the cardiac muscle ryanodine receptor channel results in relocation of the tetraethylammonium binding site
- 395 DONGLIN GUO and ZHE LU. Kinetics of inward-rectifier K<sup>+</sup> channel block by quaternary alkylammonium ions: Dimension and properties of the inner pore
- 407 MIA LÖFGREN, ULF MALMQVIST, and ANDERS ARNER. Substrate and product dependence of force and shortening in fast and slow smooth muscle
- 419 JENNIFER S. LANDRY and DAVID H. EIDELMAN. *Commentary: Airway surface liquid: End of the controversy?*
- 423 SUJATHA JAYARAMAN, YUANLIN SONG, and A.S. VERKMAN. Airway surface liquid osmolality measured using fluorophore-encapsulated liposomes
- 431 DAVID I. YULE. *Commentary: Subtype-specific regulation of inositol 1,4,5-trisphosphate receptors: Controlling calcium signals in time and space*
- 435 DON-ON DANIEL MAK, SEAN MCBRIDE, and J. KEVIN FOSKETT. Regulation by Ca<sup>2+</sup> and inositol 1,4,5-trisphosphate (InsP<sub>3</sub>) of single recombinant type 3 InsP<sub>3</sub> receptor channels: Ca<sup>2+</sup> activation uniquely distinguishes types 1 and 3 InsP<sub>3</sub> receptors
- 447 DON-ON DANIEL MAK, SEAN MCBRIDE, and J. KEVIN FOSKETT. ATP regulation of recombinant type 3 inositol 1,4,5-trisphosphate receptor gating
- 457 BRIAN BUTTON, LUIS REUSS, and GUILLERMO A. ALTENBERG. PKC-mediated stimulation of amphibian CFTR depends on a single phosphorylation consensus site. Insertion of this site confers PKC sensitivity to human CFTR
- 469 DORINE M. STARACE and FRANCISCO BEZANILLA. Histidine scanning mutagenesis of basic residues of the S4 segment of the *Shaker* K<sup>+</sup> channel
- 491 SHAN CHEN, JING WANG, and STEVEN A. SIEGELBAUM. Properties of hyperpolarization-activated pacemaker current defined by coassembly of HCN1 and HCN2 subunits and basal modulation by cyclic nucleotide

*Cover picture:* Airway surface liquid (ASL) osmolality measured in monolayer cultures of airway epithelial cells. (top) Cells grown on porous filters at an air-liquid interface are mounted in a perfusion chamber in a 100% humidity tent and stained with osmolality-sensitive fluorescent liposomes. (bottom) Liposome-stained ASL images obtained using calcein (green) and SR (red) filters, with pseudocolored ratio image and osmolality scale. See related article by Jayaraman, S., Y. Song, and A.S. Verkman in this issue, pp. 423–430.