

General Physiology is the study of biological mechanisms through analytical investigations, which decipher the molecular and cellular mechanisms underlying biological function at all levels of organization.

The mission of the *Journal of General Physiology* is to publish articles that elucidate important biological, chemical, or physical mechanisms of broad physiological significance.

## ARTICLES

- 315 Divalent cations regulate connexin hemichannels by modulating intrinsic voltage-dependent gating.  
Vytas K. Verselis and Miduturu Srinivas
- 329 Glucose and GLP-1 stimulate cAMP production via distinct adenylyl cyclases in INS-1E insulinoma cells.  
Lavoisier S. Ramos, Jonathan Hale Zippin, Margarita Kamenetsky, Jochen Buck, and Lonny R. Levin
- 339 Nitric oxide-mediated modulation of synaptic activity by astrocytic P2Y receptors. Bhupesh Mehta, Gulnaz Begum, Nanda B. Joshi, and Preeti G. Joshi
- 351 Preventing voltage-dependent gating of anthrax toxin channels using engineered disulfides. Damon S. Anderson and Robert O. Blaustein
- 361 A carboxy-terminal inter-helix linker as the site of phosphatidylinositol 4,5-bisphosphate action on Kv7 (M-type) K<sup>+</sup> channels. Ciria C. Hernandez, Oleg Zaika, and Mark S. Shapiro
- 383 Mutations of nonconserved residues within the calcium channel  $\alpha_1$ -interaction domain inhibit  $\beta$ -subunit potentiation. Giovanni Gonzalez-Gutierrez, Erick Miranda-Laferte, David Naranjo, Patricia Hidalgo, and Alan Neely

**Cover picture:** Effects of site-directed mutagenesis of the carboxy-terminal A-B inter-helix linker of Kv7.2 channels on single-channel open probability correlate with docking simulations of a PIP<sub>2</sub> analog. Recordings of R463Q (top) or R463E (bottom) mutants at 0 mV in cell-attached mode (left) or inside-out mode in the presence of 25  $\mu$ M diC8-PIP<sub>2</sub> (right). The simulations below the traces predict a much more favorable interaction for the R463E mutant (see article by Hernandez et al., 361–381).