

New style, same substance

Mike Rossner

Executive Director, The Rockefeller University Press

Substance has always been paramount at The Rockefeller University Press, but that doesn't mean we can't also have style. We are thus delighted to unveil a new design for the websites of our three journals, *The Journal of Cell Biology*, *The Journal of Experimental Medicine*, and *The Journal of General Physiology*, and for the Press itself. The sites have an updated look and contain innovative functionality to present and highlight new and exciting science.

Since launching our online presence in 1997, we have made some adjustments to our home pages, but the design of our full-text article page—the showcase of our content—has barely changed. In our new design of this page, we have adopted a three-column format that enhances the experience of reading a scientific paper using the sophisticated tools that the modern internet has to offer.

Column 1: Navigation, sharing, and alerts

The left column provides navigation links for the various sections of the article, utilities for sharing the article through social networking and bookmarking sites, and links to alerting services. Much of this functionality will stay with readers as they scroll through the text of an article. This column also contains a link for article usage statistics, which have been provided to our subscribers since May 2007.

Column 2: The narrative

The center column contains the full text of the article. We have included some new functionality, such as hover boxes over citations and figure expansion within the page, but we have maintained the basic narrative structure of a scientific article. This reflects the linearity of the scientific method: one asks a question, conducts experiments to try to answer that question, and interprets the resulting data. This linearity is represented in the



"O.K. Will somebody please bring me up to date?"

Introduction–Results–Discussion structure of a scientific article, and we have left these sections in their traditional order where readers expect them to be.

Column 3: Widgets

The fact that the scientific narrative is linear does not prevent you from carrying useful information with you as you read. The right column of the new page contains expandable widgets, viewable from anywhere within the full text, which provide access to all figures and references in the article. If the Discussion section refers back to Fig. 2, for example, you don't have to scroll back or hit another tab to open it; it's right there in the third column. From within the figures widget, individual figure images can be opened at a larger size and moved anywhere within your browser for viewing as you scroll through the text.

In addition to the content of the article itself, it is also vital to have links to other relevant information at your fingertips. To facilitate this, we have created widgets that link to citation information, preprogrammed

©The New Yorker Collection 1996 Arnie Levin. All Rights Reserved.

Downloaded from https://academic.oup.com/jgp/article-abstract/135/3/393/1787348 by guest on 09 February 2020

Correspondence to Mike Rossner: rossner@rockefeller.edu

JGP

about JGP | meet our editors | alerts & feeds | permissions | contact us | subscribe | submit

HOME | CURRENT ISSUE | NEWEST ARTICLES | COMMENTARIES & PERSPECTIVES | ARCHIVE

Search JGP | SEARCH | Advanced Search

JGP Home > 2010 Archive > March > Tadross et al. 135 (3): 197

Published February 8, 2010 // JGP vol. 135 no. 3 197-215
 The Rockefeller University Press, doi: 10.1085/jgp.200910308
 © 2010 Tadross et al.

Article

Molecular endpoints of Ca^{2+} /calmodulin- and voltage-dependent inactivation of $\text{CaV}1.3$ channels

Michael R. Tadross², Manu Ben Johny², and David T. Yue^{1,2}

[Author Affiliations](#)

Correspondence to David T. Yue: dyue@jhmi.edu; or Michael R. Tadross: mtadross@gmail.com

Abstract

Abstract

Ca^{2+} /calmodulin- and voltage-dependent inactivation (CDI and VDI) comprise vital prototypes of Ca^{2+} channel modulation, rich with biological consequences. Although the events initiating CDI and VDI are known, their downstream mechanisms have eluded consensus. Competing proposals include hinged-lid occlusion of channels, selectivity filter collapse, and allosteric inhibition of the activation gate. Here, novel theory predicts that perturbations of channel activation should alter inactivation in distinctive ways, depending on which hypothesis holds true. Thus, we systematically mutate the activation gate, formed by all S6 segments within $\text{CaV}1.3$. These channels feature robust baseline CDI, and the resulting mutant library exhibits significant diversity of activation, CDI, and VDI. For CDI, a clear and previously unreported pattern emerges: activation-enhancing mutations proportionately weaken inactivation. This outcome substantiates an allosteric CDI mechanism. For VDI, the data implicate a "hinged lid-shield" mechanism, similar to a hinged-lid process, with a previously unrecognized feature. Namely, we detect a "shield" in $\text{CaV}1.3$ channels that is specialized to repel lid closure. These findings reveal long-sought downstream mechanisms of inactivation and may furnish a framework for the understanding of Ca^{2+} channelopathies involving S6 mutations.

INTRODUCTION

Ca^{2+} entry through high voltage-gated Ca^{2+} ($\text{CaV}1$ and $\text{CaV}2$) channels selectively triggers numerous neurobiological processes, including transmitter release, gene transcription, and memory formation (Berridge et al., 2000). Fitting with these vital roles, $\text{CaV}1/2$ channels are highly regulated through a variety of feedback mechanisms that inactivate channels in response to either intracellular Ca^{2+} elevations (e.g., Ca^{2+} -dependent inactivation [CDI]) or voltage-dependent conformational changes (e.g.,

Related Content in this Issue

Figures

1 2 3 4 5 6 7

View larger version:

References

Adams, P.J., E.Garcia, T.P.Schnitz, S.D.Spacey. 2007. Splice variant composition of P/Q-type calcium channels affects both biophysical properties and sensitivity to an FHM point mutation. *Biophys. J. Abstr* 2869:602A.

Agler, H.L., J.Evans, L.H.Tay, M.J.Anderson, H.M.Colecraft, D.T.Yue. 2005. G protein-gated inhibitory module of N-type ($\text{Ca}(\text{v})2.2$) Ca^{2+} channels. *Neuron*.

Supplemental Materials

Cited By

Similar Articles by Keyword

PubMed

An article in the new format with navigation, organization, and sharing utilities on the left and expandable widgets on the right.

PubMed searches, and databases containing information related to the paper.

Reading options

Anyone who does not like the three-column format can click on the expansion icon (left/right arrow) at the top right of the center column to return to the single-column format. One goal in designing the new sites was to provide the reader with a variety of choices for the format in which they read an article. PDF formats with traditional layout are still available, as are PDF files that incorporate supplemental material. And the three-column format is particularly well suited for viewing on the iPhone.

We are excited about this new functionality, and we hope our readers will find it useful for navigating through all of the information within an article and related material from other locations on the internet. We would be grateful for any feedback, which can be provided by clicking the feedback link at the bottom of each web page. We will update the existing features according to your suggestions, and we will continue to innovate.

Look for additional functionality and information to be added to the full-text article page soon, such as embedded videos. We may also incorporate commenting for individual articles, although it is unclear whether this functionality is a priority among the scientific community. In the longer term, we hope to provide additional layout options for viewing and printing articles.

For now, we invite you to take a tour of the new design at the Rockefeller University Press website (www.rupress.org) or at your favorite journal: www.jcb.org, www.jem.org, or www.jgp.org.

Acknowledgments

Special thanks to our Production Director, Rob O'Donnell, for his extraordinary efforts in coordinating the development of these new sites with our designers and our online service providers. Thanks also to Grace Baynes for her extremely helpful consultation, from early discussions about our redesign through the construction of the new templates.