

## New style, same substance

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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 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 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

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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 so-

phisticated tools that the modern internet has to offer.

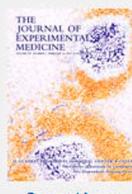
### Column 1: Navigation, sharing, and alerts

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

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## Views

## Abstract

» Full Text (HTML)

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## Abstract

## RESULTS AND DISCUSSION

## MATERIALS AND METHODS

## Acknowledgments

## Footnotes

## References

## Full Text (PDF)

PDF + Supp Data

Supplemental Material

Figures Only

PPT Slides of All Figures

## Article Usage Stats

## Organize &amp; Share

## Email

## ShareThis

## Add to Citation Manager

## Get Alerts

## Alert Me When Cited

## Alert Me If a Correction Is Made

## Alert Me to New Content in JEM

JEM Home &gt; 2010 Archive &gt; 15 February &gt; Rayamajhi et al. 207 (2): 327

Published February 1, 2010 // JEM vol. 207 no. 2 327-337  
The Rockefeller University Press, doi: 10.1084/jem.20091746  
© 2010 Rayamajhi et al.

## Brief Definitive Report

Induction of IFN- $\alpha\beta$  enables *Listeria monocytogenes* to suppress macrophage activation by IFN- $\gamma$ Manira Rayamajhi<sup>1,2</sup>, Jessica Humann<sup>1,2</sup>, Kristi Penheiter<sup>1</sup>, Karl Andreasen<sup>1</sup>, and Laurel L. Lenz<sup>1,2</sup>

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## Abstract

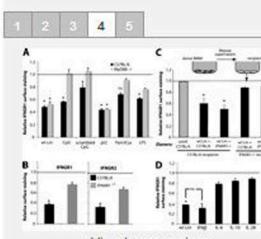
Back to Top

Production of type I interferon (IFN; IFN- $\alpha\beta$ ) increases host susceptibility to *Listeria monocytogenes*, whereas type II IFN (IFN- $\gamma$ ) activates macrophages to resist infection. We show that these opposing immunological effects of IFN- $\alpha\beta$  and IFN- $\gamma$  occur because of cross talk between the respective signaling pathways. We found that cultured macrophages infected with *L. monocytogenes* were refractory to IFN- $\gamma$  treatment as a result of down-regulation of the IFN- $\gamma$  receptor (IFN $\gamma$ R). The soluble factor responsible for these effects was identified as host IFN- $\alpha\beta$ . Accordingly, macrophages and dendritic cells (DCs) showed reduced IFN $\gamma$ R expression and reduced responsiveness to IFN- $\gamma$  during systemic infection of IFN- $\alpha\beta$ -responsive mice. Furthermore, the increased resistance of mice lacking the IFN- $\alpha\beta$  receptor (IFN $\alpha\beta$ R $^{-/-}$ ) to *L. monocytogenes* correlated with increased expression of IFN- $\gamma$ -dependent activation markers by macrophages and DCs and was reversed by depletion of IFN- $\gamma$ . Thus, IFN- $\alpha\beta$  produced in response to bacterial infection and other stimuli antagonizes the host response to IFN- $\gamma$  by down-regulating the IFN $\gamma$ R. Such cross talk permits prioritization of IFN- $\alpha\beta$ -type immune responses and may contribute to the beneficial effects of IFN- $\beta$  in treatment of inflammatory diseases such as multiple sclerosis.

The innate immune system is the first line of defense against pathogenic microbes. Phagocytic cells of the innate immune system, including macrophages, DCs, and neutrophils, patrol host tissues and rapidly engulf any bacteria or particulate microbes they encounter. Once engulfed, most organisms are killed. However, several pathogens,

## Related Content in this Issue

## Figures



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## Figure 4.

Type I IFN mediates IFN $\gamma$ R down-regulation. (A) C57BL/6 (black) or MyD88 $^{-/-}$  (gray) BMMs were infected with wt Lm at MOI = 5 or treated with the indicated TLR agonists as described in Materials and methods. After 8 h of infection or treatment, BMMs were lifted and surface IFN $\gamma$ R

## References

Auerbuch, V., D.G. Brockstedt, N.Meyer-Morse, M.O'Riordan, D.A. Portnoy. 2004. Mice lacking the type I interferon receptor are resistant to *Listeria monocytogenes*. *J. Exp. Med.* 200:527-533. doi:10.1084/jem.20040976

## » Abstract/FREE Full Text

Belland, R.J., D.E. Nelson, D.Virok, D.D. Crane, D.Hogan, D.Sturdevant, W.L. Beatty, H.D. Caldwell. 2003. Transcriptome analysis of chlamydial

## Supplemental Materials

## Cited By

## Similar Articles by Keyword

## PubMed

## PubMed/NCBI Databases

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

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](http://www.rupress.org)) or at your favorite journal: [www.jcb.org](http://www.jcb.org), [www.jem.org](http://www.jem.org), or [www.jgp.org](http://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.