NEWS & COMMENT

CERN: Alone on the Frontier
A Leader by Consensus 1808

Hubble Telescope: Repairs Rekindle 1810
3-Year-Old Dreams

DOE Lifts the Veil of Secrecy From Laser Fusion
An 'Openness Initiative'

Research Ethics: Scandal Scars 1812
Minnesota Medical School

RESEARCH NEWS

A Big Step for Superconductivity? 1816

New Bind for Ulcer Bacterium 1817

'Bubble Boy' Paradox Resolved 1818

Ancient Climate Coolings Are on Thin Ice 1818

Is the Future Here for Gallium Arsenide? 1819

AIDS Vaccine Research: A New Goal: Preventing Disease, Not Infection 1820

PERSPECTIVES

Transition States of Chemical Reactions 1828
G. C. Schatz

Two Jobs for the Origin Replication Complex 1830
C. S. Newton

ARTICLE

Distributions of Phytoplankton Blooms in the Southern Ocean 1832

RESEARCH ARTICLES

Origin Recognition Complex (ORC) in Transcriptional Silencing and DNA Replication in S. cerevisiae 1838
M. Foss, F. J. McNally, P. Laurenson, J. Rine

Yeast Origin Recognition Complex Functions in Transcription Silencing and DNA Replication 1844
S. P. Bell, R. Kobayashi, B. Stillman

DEPARTMENTS

THESE WEEK IN SCIENCE 1797

EDITORIAL 1799
The Lessons of the Super Collider

LETTERS 1801

SCIENCESCOPE 1807

RANDOM SAMPLES 1814
New Start for Behavioral Researchers • Study Sections Not Kosher?, etc.

BOOK REVIEWS 1906
In the Name of Science; Targeted; The Hijacking of the Humane Movement; Monkey Business, reviewed by H. Hersog • Beyond the Wall, K. Macrakis • Symmetry in Chaos, J. D. Crawford • Thermodynamics in Geochemistry, J. Walther • Vignettes: Books Received

PRODUCTS & MATERIALS 1914

Board of Reviewing Editors

John Abelson
Frederick W. Alt
Don L. Anderson
Michael Ashburner
Stephen J. Benkovic
David E. Bloom
Troy Bloom
Piet Borst
Michael S. Brown
Henry R. Bourque
James J. Bull
Kathryn Calame
C. Thomas Caskey
Dennis W. Choi
John M. Coffin
Paul J. Crutzen
Robert Desmonde
Nicole Le Douarin
Bruce F. Eldridge
Paul T. Englund
Richard G. Fairbank
Douglas T. Farrow
Harry A. Fozzard
K. Friedrich
Theodore H. Geballe
Margaret J. Geller
John G. Gerhart
Roger I. M. Glass
Stephen P. Golf
Peter N. Goodfellow
Corey S. Goodman
Stephen J. Gould
Ira Herskowitz
Eric F. Johnson
Stephan M. Koselyn
Michael LaBarbera
Charles S. Levings III
Alexander Levitski
Harvey F. Lodish
Richard Losick
Diane Mathis
Anthony R. Means
Shigetada Nakashima
Roger A. Nicoll
William H. Orme-Johnson III
Stuart L. Pimm
Yoshinori Pocker
Dennis A. Powers
Ralph S. Quinlan
V. Ramanathan
Douglas S. Rees
T. M. Rice
Erik Ruoslahti
David C. Ruben
Gottfried Schatz
Jozef Schell
Ronald H. Schwartz
Terrence J. Sejnowski
Ellen Solomon
Thomas A. Steitz
Michael P. Strayer
Richard F. Thompson
Robert T. N. Yuen
Emil R. Uhr
Geert J. Vermeij
Bert Vogelstein
Harold Wortman
Zena Werb
George M. Whitesides
Owen N. Witte
William A. Wulf
Keith Yamamoto
Model of the protein lysin superimposed on the shells of a red abalone. To fertilize the egg, the abalone spermatozoon must disrupt the protective vitelline envelope. Lysin binds to the filamentous glycoproteins that form the envelope and creates a hole by means of a nonenzymatic process. The lysin-glycoprotein association also contributes to the species recognition between sperm and egg. See page 1864. [Cover design: Peggy Myer. Digital photography: Bob Turner. Molecular model: Mike Pique]

RESEARCH

Evidence Suggesting Superconductivity at 250 K in a Sequentially Deposited Cuprate Film

The Transition State of the F + H₂ Reaction

Nitrogen-15 and Oxygen-18 Characteristics of Nitrous Oxide: A Global Perspective
K.-R. Kim and H. Craig

Superheating Effects on Metal-Silicate Partitioning of Siderophile Elements
D. Walker, L. Norby, J. H. Jones

Orphan Strontium-87 in Abyssal Peridittes: Daddy Was a Granite
J. E. Snow, S. R. Hart, H. J. B. Dick

The Crystal Structure of Lysin, a Fertilization Protein
A. Shaw, D. E. McRee, V. D. Vacquier, C. D. Stout

A Functional Recombinant Myosin II Lacking a Regulatory Light Chain–Binding Site
T. Q. P. Uyeda and J. A. Spudich

Isolation of ORC6, a Component of the Yeast Origin Recognition Complex by a One-Hybrid System
J.-J. Li and J. Herskowitz

Sharing of the Interleukin-2 (IL-2) Receptor γ Chain Between Receptors for IL-2 and IL-4
M. Kondo, T. Takeshita, N. Ishii, M. Nakamura, S. Watanabe, K.-t. Arai, K. Sugamura

Interleukin-2 Receptor γ Chain: A Functional Component of the Interleukin-7 Receptor

Interleukin-2 Receptor γ Chain: A Functional Component of the Interleukin-4 Receptor

Active Oxygen Species in the Induction of Plant Systemic Acquired Resistance by Salicylic Acid
Z. Chen, H. Silva, D. F. Klessig

Functional Requirement of a Site-Specific Ribose Methylation in Ribosomal RNA Functional Component
K. Sirum-Connolly and T. L. Mason

Inhibition of Transcriptional Regulator Yin-Yang-1 by Association with c-Myc
A. Shrivastava, S. Saleque, G. V. Kalpana, S. Artandi, S. P. Goff, K. Calame

Attachment of Helicobacter pylori to Human Gastric Epithelium Mediated by Blood Group Antigens
T. Borén, P. Falk, K. A. Rorh, G. Larson, S. Normark

Separate GTP Binding and GTPase Activating Domains of a Gs Subunit
D. W. Markby, R. Omrast, H. R. Bourne

Linearity of Summation of Synaptic Potentials Underlying Direction Selectivity in Simple Cells of the Cat Visual Cortex
B. Jagadeesh, H. S. Wheat, D. Ferster

AAAS Board of Directors

F. Sherwood Rowland
Retiring President, Chairman
Elise E. Clark
President
Francisco J. Ayala
President-elect
Robert A. Frosch
Treasurer
Florence P. Haselton
William A. Lester, Jr.

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Second-class postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 1993 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): $87 ($47 allocated to subscription), Domestic institutional subscription (51 issues): $205. Foreign postage extra: Mexico, Caribbean (surface mail) $50; other countries (air assist delivery) $95. First class, airmail, student and emeritus rates on request. Canadian rates with GST available upon request. GST #125484125. Change of address: allow 6 weeks, giving old and new addresses and 11-digit account number. Postmaster: Send change of address to Science, P.O. Box 2003, Marion, OH 43305-2003. Single copy sales: $6.00 per issue prepaid includes surface postage. Guide to Biotechnology Products and Instruments, $20. Bulk rates on request. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of $1 per copy plus $.10 per page is paid directly to CCC, 222 Rose Street, Salem, MA 01970. The identification code for Science is 0036-8075/83 $1 - 10. Science is indexed in the Reader’s Guide to Periodical Literature and in several specialized indexes.

1818, 1874, 1877 & 1880
Common subunit for interleukin receptors