NEWS & COMMENT

Can Carol Browner Reform EPA? 312
Strict Ethical Rules Confound EPA Science

Italy Throws EMBL Into Turmoil 315

Germany: Environmental R&D Shakeup
Rattles the National Labs 316

Easy-to-Alter Digital Images Raise
Fears of Tampering Technology for Turning
Seeing Into Believing 318

RESEARCH NEWS

How Cells Cycle Toward Cancer 319

Researchers Try to Build Time Machines
for Microwaves 321

In Ancient Climate, Orbital Chaos? 323

New Images Highlight Hubble Fix 323

Boning Up: Newly Isolated Proteins
Heal Bad Breaks 324

PERSPECTIVES

Lasers Without Inversion 337
M. O. Scully and M. Fleischhauer

Polyketide Biosynthesis: Molecular
Recognition or Genetic Programming? 338
D. E. Cane

ARTICLE

Detecting Climatic Change Signals:
Are There Any "Fingerprints"? 341
S. H. Schneider

Hin Recombinase Bound to DNA:
The Origin of Specificity in Major and
Minor Groove Interactions 348
J.-A. Feng, R. C. Johnson, R. E. Dickerson

EXPERIMENTAL

Cell cycle dereg- 
ment and cancer

319

A new way to lase

337

DEPARTMENTS

THIS WEEK IN SCIENCE
EDITORIAL
U.S. Petroleum: Past and Future 319
LETTERS
Italy's Role in EMBL: V. Sgaramella • Environmental Management: W. R. Jordan III • Michigan Support for Faculty Member: W. Harrison • Trot and Pace: R. Haas; Eds. • Not Huxley's Student: D. L. Hull • Good Songs: E. C. Scott; E. F. Hawkins

SCIENCESCOPE

311

RANDOM SAMPLES
Glitch in U.K. Tech Plan • Big Splash On Jupiter • Mismeasures of Productivity • Birth Control and High Blood Pressure • Designer Cattle With Ultrasound • At the Core of the Chromosome • Hiring Thaw at FDA

BOOK REVIEWS
The Clostridia and Biotechnology, reviewed by E. R. Kashket • Antarctic Microbiology, E. F. DeLong • Volcanoes, J. Fink • Beyond Southern Skies, R. D. Davies • Vignettes • Books Received

PRODUCTS & MATERIALS

301
303
305

400

407

Board of Reviewing Editors

John Abelson
Frederick W. Alt
Don L. Anderson
Michael Ashburner
Stephen J. Benkovic
David E. Bloom
Floyd E. Bloom
Pat Borst
Michael S. Brown
Henry R. Bourne
James J. Bull

Kathryn Calame
C. Thomas Caskey
Dennis W. Choi
John M. Collin
Paul J. Crutzen
Robert Desimone
Nicole Le Douarin
Bruce F. Eldridge
Paul T. Englund
Richard G. Fairbanks
Douglas T. Fearon
Harry A. Fozzard
K. Friedrich
Theodore H. Geballe
Margaret J. Geller
John C. Gerhart
Roger L. Glass
Stephen P. Gold
Peter N. Goodfellow
Corey S. Goodman
Stephen J. Gould
Ira Herskowitz
Eric F. Johnson
Stephen M. Kosenzon
Michael LaBarbera
Charles S. Levings III
Alexander Lovettz
Harvey F. Lodish
Richard Losick
Diane Mathis
Anthony R. Means
Shigetada Nakashizuka
Roger A. Nicoll
William H. Orme-Johnson III
Stuart L. Pimm
Yehayewu Pocken
Dennis A. Powers
Ralph S. Quatrano
V. Ramanathan
Douglas C. Rees
T. M. Rice
Eriku Ruoartzhi
David C. Rube

Gottfried Schatz
Josef Schett
Ronald H. Schwartz
Terrence J. Sejnowski
Ellen Solomon
Thomas A. Steitz
Michael P. Styrsky
Richard F. Thompson
Robert T. N. Tjian
Emil R. Urenue
Geerat J. Vermeij

Bert Vogelstein
Harold Weintraub
Zena Werb
George M. Whitesides
Owen N. Witte
William A. Wulf
Keith Yamamoto
Model of the catalytic domain of human fibroblast collagenase complexed with an inhibitor. The inhibitor (gold) binds to the catalytic zinc (lower light blue sphere) in the active site cleft of the enzyme. Collagenase activity has been associated with several diseases including arthritis and metastatic cancer. Knowing the structure of collagenase will facilitate the design of more potent inhibitors. See page 375. [Graphics: Brett Lovejoy, using Insight II software (Biosym)]

REPORTS

Crystal Structure of the High-Pressure Phase of Solid CO₂
K. Aoki, H. Yamawaki, M. Sakashita, Y. Gotoh, K. Takemura

Wind Streaks on Venus

500,000-Year Stable Carbon Isotopic Record from Devils Hole, Nevada
T. B. Coplen, I. J. Winograd, J. M. Landwehr, A. C. Rigg

Distinguishing the Direct and Indirect Products of a Gas-Surface Reaction C. T. Rettner and D. J. Auerbach


Built for Jumping: The Design of the Frog Muscular System G. J. Lutz and L. C. Rome

Benefit to Male Sailfin Mollies of Mating with Heterospecific Females I. Schlupp, C. Marler, M. J. Ryan


Regulation of MHC Class I Transport by the Molecular Chaperone, Calnexin (p88, IP90) M. R. Jackson, M. F. Cohen-Doyle, P. A. Peterson, D. B. Williams

Retention of Unassembled Components of Integral Membrane Proteins by Calnexin S. Rajagopalan, Y. Xu, M. B. Brenner

Cell Membrane Resealing by a Vesicular Mechanism Similar to Neurotransmitter Release R. A. Steinhardt, G. Bi, J. M. Alderton

Designing a protease inhibitor

370 Designed for jumping

AAAS Board of Directors

F. Sherwood Rowland
Retiring President, Chairman
Eloise E. Clark
President
Francisco J. Ayala
President-Elect
Robert A. Frosch
Florence P. Hassetine
William A. Lester, Jr.

ALAN SCHRIEHEIM
Jeanne M. Shreve
Chang-Lin Tien
Warren M. Washington
Nancy S. Wesler

William T. Golden
Richard S. Nicholson
Executive Officer

Indicates accompanying feature

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005. Second-class postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 1994 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): $92 ($50 allocated to subscription). Domestic institutional subscription (51 issues): $215. 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 #125488122. 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 2033, Marion, OH 43305-2033. 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, or the internal or personal use of specific clients, 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 $0.10 per page is paid directly to CCC, 27 Congress Street, Salem, MA 01970. The identification code for Science is 0036-8075/94 $1 + 10. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.