

JB

VOLUME 128 NO.6 DEC 2000

THE JOURNAL OF BIOCHEMISTRY

RECEIVED

JAN 30 2001

BIOCHEMISTRY
MOLECULAR BIOLOGY
CELL
BIOTECHNOLOGY

The JB is available on the Web at: <http://JB.bcasj.or.jp/>

Published Monthly by THE JAPANESE BIOCHEMICAL SOCIETY

JOBIAO 128(6)891-1096(2000)

EDITORIAL BOARD

Editor-in-Chief

Koichi SUZUKI (Tokyo)

Editors

<i>Biochemistry (I)</i>	Toshisuke KAWASAKI (Kyoto)
<i>Biochemistry (II)</i>	Eiki KOMINAMI (Tokyo)
<i>Molecular Biology</i>	Yoshiaki FUJII-KURIYAMA (Sendai)
<i>Cell</i>	Toshiaki KATADA (Tokyo)
<i>Biotechnology</i>	Izumi KUMAGAI (Sendai)

Managing Editors

Toshiaki KATADA (Tokyo) Tadaomi TAKENAWA (Tokyo)

Associate Editors

<i>Biochemistry (I)</i>	Katsura IZUI (Kyoto)	Hideo KANO (Sapporo)
	Hisao KATO (Suita)	Tadaomi TAKENAWA (Tokyo)
	Shuichi TSUJI (Hadano)	Akihito YAMAGUCHI (Ibaraki)
<i>Biochemistry (II)</i>	Kuniyo INOUE (Kyoto)	Taiji KATO (Nagoya)
	Masaru TANOKURA (Tokyo)	Tomofusa TSUCHIYA (Okayama)
	Kenji YAMAMOTO (Fukuoka)	
<i>Molecular Biology</i>	Fumio HANAOKA (Suita)	Kenshi HAYASHI (Fukuoka)
	Motoya KATSUKI (Tokyo)	Kunihiro MATSUMOTO (Nagoya)
	Hiroyuki SASAKI (Mishima)	Masayuki YAMAMOTO (Tsukuba)
<i>Cell</i>	Tatsuya HAGA (Tokyo)	Atsushi MIYAJIMA (Tokyo)
	Akihiko NAKANO (Wako)	Shigeo OHNO (Yokohama)
	Kenji SOBUE (Suita)	
<i>Biotechnology</i>	Shinji IJIMA (Nagoya)	Masahiro IWAKURA (Tsukuba)
	Yasufumi KANEDA (Suita)	Eiichi TAMIYA (Ishikawa)

Advisory Board

Biochemistry (I)

Kurt DRICKAMER (Oxford)
Yoshimi HOMMA (Fukushima)
Kiyoshi KITA (Tokyo)
Masatomo MAEDA (Suita)
Takaaki NISHIOKA (Kyoto)
Yukio SUGIURA (Uji)
Tetsuro YAMAMOTO (Kumamoto)
Shinji YOKOYAMA (Nagoya)

Kiyoshi FURUKAWA (Tokyo)
Tatsuro IRIMURA (Tokyo)
Hisatake KONDO (Sendai)
Alfred H. MERRILL, Jr. (Atlanta)
Fumihiko SATO (Kyoto)
Koji SUZUKI (Tsu)
Hirohei YAMAMURA (Kobe)

Saburo HARA (Kyoto)
Makoto ITO (Fukuoka)
Ta-Hsiu LIAO (Taipei)
Taeko MIYAGI (Natori)
Kazuyuki SUGAHARA (Kobe)
Dennis E. VANCE (Edmonton)
Satoshi YAMASHITA (Maebashi)

Biochemistry (II)

Elinor T. ADMAN (Seattle)
Masaaki HIROSE (Uji)
Akio ITO (Fukuoka)
Ushio KIKKAWA (Kobe)
Kunihiro KUWAJIMA (Tokyo)
Norio MUTO (Shobara)
Noriaki TAKEGUCHI (Toyama)

Shoei FURUKAWA (Gifu)
Michio HOMMA (Nagoya)
Keiichi KAWANO (Toyama)
Takehiko KOIDE (Hyogo)
Peter MALONEY (Baltimore)
Hideaki NAGASE (London)
Koji YODA (Tokyo)

Seisuke HATTORI (Kodaira)
Tokuji IKEDA (Kyoto)
Seiichi KAWASHIMA (Tokyo)
Konosuke KUMAKURA (Tokyo)
Tomonari MURAMATSU (Tokyo)
Toru SHIMIZU (Sendai)
Tadashi YOSHIMOTO (Nagasaki)

Molecular Biology

Hiroyuki ARAKI (Mishima)
Akira HORII (Sendai)
Hidetoshi INOKO (Isehara)
Daisuke KITAMURA (Noda)
Ken-ichirou MOROHASHI (Okazaki)
Lorenz POELLINGER (Stockholm)
Takashi TODA (London)
Hideyo YASUDA (Hachioji)

James D. ENGEL (Evanston)
Nobumichi HOZUMI (Noda)
Tetsuro ISHII (Tsukuba)
Hisao MASAI (Tokyo)
Tsunehiro MUKAI (Saga)
Tomokazu SUZUKI (Itami)
Morimasa WADA (Fukuoka)
Yoshihiro YONEDA (Suita)

Akiyoshi FUKAMIZU (Tsukuba)
Toshinori IDE (Hiroshima)
Takeo KISHIMOTO (Yokohama)
Takeshi MIZUNO (Nagoya)
Yusaku NAKABEPPU (Fukuoka)
Shoji TAJIMA (Suita)
Masao YAMADA (Tokyo)

Cell

Toshiya ENDO (Nagoya)
Haruhiro HIGASHIDA (Kanazawa)
Kozo KAIBUCHI (Ikoma)
Eisuke MEKADA (Kurume)
Toru NAKANO (Suita)
Hiroshi OHNO (Kanazawa)
Mamoru SANO (Kyoto)
Mitsuo TAGAYA (Hachioji)

Yukio FUJIKI (Fukuoka)
Masaki INAGAKI (Nagoya)
Akira KIKUCHI (Hiroshima)
Takashi MURAMATSU (Nagoya)
Kazuhisa NAKAYAMA (Tsukuba)
Harumasa OKAMOTO (Tsukuba)
Hiroyuki SUGIYAMA (Fukuoka)
Takashi YOKOTA (Tokyo)

Yasuhisa FUKUI (Tokyo)
Makoto INUI (Ube)
Toshio KITAMURA (Tokyo)
Shigekazu NAGATA (Suita)
Masuo OBINATA (Sendai)
David SAFFEN (Tokyo)
Tetsuya TAGA (Tokyo)
Akihiko YOSHIMURA (Kurume)

Biotechnology

Yoshiharu DOI (Wako)
Patricia A. JENNINGS (San Diego)
Izumi KUBO (Hachioji)
Fumio MIZUTANI (Tsukuba)
Shigemi NORIOKA (Suita)
Kiyotaka SHIBA (Tokyo)
Toshifumi TAKEUCHI (Hiroshima)

Nobuyoshi ESAKI (Uji)
Makoto KIMURA (Fukuoka)
Isamu MATSUMOTO (Tokyo)
Teruyuki NAGAMUNE (Tokyo)
Takahiro OCHIYA (Tokyo)
Masayasu SUZUKI (Iizuka)
Norihiko TSUKAGOSHI (Nagoya)

Shigehisa HIROSE (Yokohama)
Kazukiyo KOBAYASHI (Nagoya)
Kohnosuke MITANI (Los Angeles)
Satoshi NISHIKAWA (Tsukuba)
Teruo OKANO (Tokyo)
Yoshinobu TAKAKURA (Kyoto)

This JOURNAL, devoted to publication of original papers in the fields of biochemistry, molecular biology, cell, and biotechnology, was founded in 1922.

The JOURNAL is published monthly, with two volumes per annum.

All correspondences concerning this JOURNAL should be addressed to: The Japanese Biochemical Society, Ishikawa Building-3f, 25-16, Hongo 5-chome, Bunkyo-ku, Tokyo 113-0033, Japan. Tel. +81-3-3815-1913, Fax. +81-3-3815-1934

Subscription

The price for a subscription per year (two volumes) is US \$250.00 (postal surcharge airmail only, US \$60). Remittance should be made preferably by check or draft payable to the Japanese Biochemical Society. Subscriptions from abroad should be paid to the agencies listed below.

Agencies

Japan Publications Trading Co., Ltd.
P.O. Box 5030, Tokyo International,
2-1, Sarugaku-cho 1-chome, Chiyoda-ku,
Tokyo 101-0064, Japan

Maruzen Co., Ltd.
P.O. Box 5050, Tokyo International,
100-3199, Japan

All back issues of the *Journal of Biochemistry* from Volume 1, 1922, are available from our agency: TOA BOOK EXPORTS, INC., Ikebukuro 4-13-4, Toshima-ku, Tokyo 171-0014, Japan. Tel. +81-3-3985-4701, Fax. +81-3-3985-4703

Copyright © 2000, by the Japanese Biochemical Society

Printed by Daishowa Printing Co., Ltd., Tokyo, Japan
under the supervision of
Center for Academic Publications Japan

Notice on photocopying With the exception of cases permitted by the Copyrights Law, such as the photocopying services provided by the libraries duly designated by government ordinance and photocopying for lectures by teachers at educational institutions, the photocopying of any part of this publication without explicit consent of the relevant author is a violation of the law. To legally photocopy any part of this publication, the person wishing to photocopy, or the corporation or organization employing such person, is recommended to enter into a comprehensive copyright approval agreement with the following trustee of copyrights from the authors:

(Except in the U.S.A.) The Copyright Council of the Academic Societies, 41-6, Akasaka 9-chome, Minato-ku, Tokyo 107-0052, Japan. Phone: 3-3475-4621, Fax: 3-3403-1738

(In the U.S.A.) Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, U.S.A. Phone: 508-750-8400, Fax: 508-750-4744

NOTES TO CONTRIBUTORS

The JOURNAL OF BIOCHEMISTRY publishes contributions, written in English, in the forms of (1) Regular paper and (2) Rapid communication, covering materials requiring prompt publication.

Submission of a paper implies that the work described has not been published previously, that it is not under consideration for publication elsewhere, and that if the paper is accepted for publication, the author(s) will transfer the copyright to the Japanese Biochemical Society.

Manuscripts should be written in succinct forms. No length-limit is set for a Regular paper, whereas a Rapid communication is not allowed to exceed 3.5 printed pages. Charges of ¥700 and ¥7,200 are made for every printed page of a Regular paper and a Rapid communication, respectively.

The manuscript should be typewritten in double-spacing and appropriately numbered. Submission of four copies of manuscript is requested. The manuscript should be sent to: The Japanese Biochemical Society, Ishikawa Building-3F, 25-16, Hongo 5-chome, Bunkyo-ku, Tokyo 113-0033, Japan.

Reprints can be purchased, in lots of 50 copies, at cost prices. The order for reprints should be made on returning the proof.

On submission of papers, authors are requested to select one of the following five fields and its topic, under which the submitted papers should be reviewed, and to indicate their selection on the title page of the manuscript. Authors may suggest a few names and addresses of potential reviewers, who are suitable for reviewing the submitted papers.

Fields and topics to be selected:

Fields	Topics
<i>Biochemistry (I):</i>	Biochemistry General Biomolecular Structures Glycobiology and Carbohydrate Biochemistry Lipid Biochemistry Biological Oxidation and Bioenergetics Reactive Oxygen and Nitrogen Species Biochemical Pharmacology Biochemistry in Diseases and Aging Cancer Biochemistry Analytical Biochemistry Nucleic Acids
<i>Biochemistry (II):</i>	Physiological Chemistry Protein and Peptide Chemistry Enzymology Biochemistry of Proteolysis Metabolism Biochemistry in Cell Membranes Neurochemistry
<i>Molecular Biology:</i>	Molecular Biology General Structure and Function of Genes and Other Genetic Materials Replication and Recombination Transcription Translation Regulation of Gene Expression DNA-Protein Interaction RNA Processing Recombinant DNA Technology Transgenic Animals and Plants Genome Analysis Genetic Diseases Molecular Genetics Molecular Evolution

Fields

Topics

Cell: Cell General

Differentiation, Development, and Aging
 Extracellular Matrices and Cell Adhesion Molecules
 Muscles, Cell Motility, and Cytoskeleton
 Stress Proteins and Molecular Chaperones
 Protein Targeting and Sorting
 Organelles and Biomembranes
 Neurobiology
 Receptors and Signal Transduction
 Cell Cycle Control
 Cell Death
 Tumor Cell Biology
 Molecular and Cellular Immunology

Biotechnology: Biotechnology General

Biomimetic Chemistry
 Biomaterials
 Bioactive Substances
 Gene and Protein Engineering
 RNA Technology
 Glycotechnology
 Immunological Engineering
 Cell and Tissue Engineering
 Transgenic Technology
 Drug Delivery Systems
 Biosensor and Bioelectronics
 New Devices in Biotechnology
 Environmental Technology

"Instructions to Authors" are printed in the January and July issues of this JOURNAL every year. Please conform to these instructions when submitting manuscripts. Reprint of "Instructions to Authors" is available.

New Announcement (Limited Publication)

JOURNAL OF BIOCHEMISTRY, GENERAL CONTENTS

Volume 37-66 (1950-1969) Cloth Bound
 700 page, including Author and Subject
 Index US \$90.00

Volume 67-98 (1970-1985) Cloth Bound
 1000 page, including Author and Subject
 Index US \$120.00

Now available through: TOA BOOK EXPORTS, INC.,
 Ikebukuro 4-13-4, Toshima-ku, Tokyo 171-0014, Japan.

CONTENTS Vol. 128, No. 6

Rapid Communications

- Single-Chain Fv with Fc Fragment of the Human IgG1 Tag: Construction, *Pichia pastoris* Expression and Antigen Binding Characterization E.V. Andrade, F.C. Albuquerque, L.M.P. Moraes, M.M. Brígido, and M.A. Santos-Silva 891
- Biochemical Identification of the Neutral Endopeptidase Family Member Responsible for the Catabolism of Amyloid β Peptide in the Brain Y. Takaki, N. Iwata, S. Tsubuki, S. Taniguchi, S. Toyoshima, B. Lu, N.P. Gerard, C. Gerard, H.-J. Lee, K. Shirotani, and T.C. Saido 897
- Myosin II Regulatory Light Chain as a Novel Substrate for AIM-1, an Aurora/Ipl1p-Related Kinase from Rat M. Murata-Hori, K. Fumoto, Y. Fukuta, T. Iwasaki, A. Kikuchi, M. Tatsuka, and H. Hosoya 903

Regular Papers

- Profile of a Nonylphenol-Degrading Microflora and Its Potential for Bioremedial Applications K. Fujii, N. Urano, H. Ushio, M. Satomi, H. Iida, N. Ushio-Sata, and S. Kimura 909
- Significance of Asn-77 and Trp-78 in the Catalytic Function of Undecaprenyl Diphosphate Synthase of *Micrococcus luteus* B-P 26 K. Fujikura, Y.-W. Zhang, H. Yoshizaki, T. Nishino, and T. Koyama 917
- Identification of a Novel WD Repeat-Containing Gene Predominantly Expressed in Developing and Regenerating Neurons H. Kato, S. Chen, H. Kiyama, K. Ikeda, N. Kimura, K. Nakashima, and T. Taga 923
- Zinc Induces Mixed Types of Cell Death, Necrosis, and Apoptosis, in Molt-4 Cells M. Hamatake, K. Iguchi, K. Hirano, and R. Ishida 933
- Endogenous Meltrin α Is Ubiquitously Expressed and Associated with the Plasma Membrane but Exogenous Meltrin α Is Retained in the Endoplasmic Reticulum N. Kadota, A. Suzuki, Y. Nakagami, T. Izumi, and T. Endo 941
- Renin Inhibits *N*-Acetyl-D-Glucosamine 2-Epimerase (Renin-Binding Protein) S. Takahashi, M. Kumagai, S. Shindo, K. Saito, and Y. Kawamura 951
- Production in Mammalian Cells of Chimeric Human/Sea Urchin Procollagen Molecules Displaying Distinct Versions of the Minor Triple Helix C. Cluzel, C. Lethias, R. Garrone, and J.-Y. Exposito 957
- X-Ray Crystal Structure and Catalytic Properties of Thr252Ile Mutant of Cytochrome P450cam: Roles of Thr252 and Water in the Active Center T. Hishiki, H. Shimada, S. Nagano, T. Egawa, Y. Kanamori, R. Makino, S.-Y. Park, S. Adachi, Y. Shiro, and Y. Ishimura 965
- Cloning and Characterization of *pcd* Encoding Δ' -Piperidine-6-Carboxylate Dehydrogenase from *Flavobacterium lutescens* IFO3084 T. Fujii, T. Narita, H. Agematu, N. Agata, and K. Isshiki 975
- Isolation of a cDNA Encoding the Motor Domain of Nonmuscle Myosin Which Is Specifically Expressed in the Mantle Pallial Cell Layer of Scallop (*Patinopecten yessoensis*) Y. Hasegawa 983
- Phorbol Ester-Potentiated Liposomal Transfection to Monocytic PLB-985 Cells L.J. Hao, D. Yang, Y. Fujii, A. Yamauchi, N. Suzuki, H. Kikuchi, Y. Kaneda, and M. Nakamura 989
- Sequence and Expression of Thai Rosewood β -Glucosidase/ β -Fucosidase, a Family 1 Glycosyl Hydrolase Glycoprotein J.R. Ketudat Cairns, V. Champattanachai, C. Srisomsap, B. Wittman-Liebold, B. Thiede, and J. Svasti 999
- Kinetic Analysis of Interaction of Different Types of Rheumatoid Factors with Immobilized IgG Using Surface Plasmon Resonance A. Matsumoto, N. Kojima, F. Takeuchi, and T. Mizuoichi 1009
- Highly Increased Plasma Concentrations of the Nicked Form of β_2 Glycoprotein I in Patients with Leukemia and with Lupus Anticoagulant: Measurement with a Monoclonal Antibody Specific for a Nicked Form of Domain V Y. Itoh, K. Inuzuka, I. Kohno, H. Wada, H. Shiku, N. Ohkura, and H. Kato 1017

Multiple Elements for Negative Regulation of the Rat Catalase Gene Expression in Dedifferentiated Hepatoma Cells	T. Takeuchi, S. Nakamura, A. Kayasuga, S. Isa, and K. Sato	1025
Genomic Organization and Transcriptional Regulation of the Mouse GD3 Synthase Gene (ST8Sia I): Comparison of Genomic Organization of the Mouse Sialyltransferase Genes	S. Takashima, M. Kono, N. Kurosawa, Y. Yoshida, Y. Tachida, M. Inoue, T. Kanematsu, and S. Tsuji	1033
Proteolysis of Acidic Calponin by μ -Calpain	R. Yoshimoto, M. Hori, H. Ozaki, and H. Karaki	1045
Characterizing and Optimizing Protease/Peptide Inhibitor Interactions, a New Application for Spot Synthesis	K. Hilpert, G. Hansen, H. Wessner, J. Schneider-Mergener, and W. Höhne	1051
Identification of a Cryptic N-Terminal Signal in <i>Saccharomyces cerevisiae</i> Peroxisomal Citrate Synthase That Functions in Both Peroxisomal and Mitochondrial Targeting	J.G. Lee, S.P. Cho, H.S. Lee, C.H. Lee, K.S. Bae, and P.J. Maeng	1059
Subcellular Fractionation of Polyprenyl Diphosphate Synthase Activities Responsible for the Syntheses of Polyprenols and Dolichols in Spinach Leaves	T. Sakaiharu, A. Honda, S. Tateyama, and H. Sagami	1073
Biochemical Characterization, Cloning, and Sequencing of ADP-Dependent (AMP-Forming) Glucokinase from Two Hyperthermophilic Archaea, <i>Pyrococcus furiosus</i> and <i>Thermococcus litoralis</i>	S. Koga, I. Yoshioka, H. Sakuraba, M. Takahashi, S. Sakasegawa, S. Shimizu, and T. Ohshima	1079
A Novel <i>Cis</i> -Acting Element Regulates <i>HES-1</i> Gene Expression in P19 Embryonal Carcinoma Cells Treated with Retinoic Acid	N. Wakabayashi, R. Kageyama, T. Habu, T. Doi, T. Morita, M. Nozaki, M. Yamamoto, and Y. Nishimune	1087

Author Index

- Adachi, S., 965
Agata, N., 975
Agematu, H., 975
Albuquerque, F.C., 891
Andrade, E.V., 891
- Bae, K.S., 1059
Brigido, M.M., 891
- Champattanachai, V., 999
Chen, S., 923
Cho, S.P., 1059
Cluzel, C., 957
- Doi, T., 1087
- Egawa, T., 965
Endo, T., 941
Exposito, J.-Y., 957
- Fujii, K., 909
Fujii, T., 975
Fujii, Y., 989
Fujikura, K., 917
Fukuta, Y., 903
Fumoto, K., 903
- Garrone, R., 957
Gerard, C., 897
Gerard, N.P., 897
- Höhne, W., 1051
Habu, T., 1087
Hamatake, M., 933
Hansen, G., 1051
Hao, L.J., 989
Hasegawa, Y., 983
Hilpert, K., 1051
Hirano, K., 933
Hishiki, T., 965
Honda, A., 1073
Hori, M., 1045
Hosoya, H., 903
- Iguchi, K., 933
Iida, H., 909
Ikeda, K., 923
Inoue, M., 1033
Inuzuka, K., 1017
Isa, S., 1025
Ishida, R., 933
Ishimura, Y., 965
Isshiki, K., 975
Itoh, Y., 1017
Iwasaki, T., 903
Iwata, N., 897
Izumi, T., 941
- Kadota, N., 941
Kageyama, R., 1087
Kanamori, Y., 965
Kaneda, Y., 989
Kanematsu, T., 1033
Karaki, H., 1045
Kato, Hiroaki, 923
Kato, Hisao, 1017
Kawamura, Y., 951
Kayasuga, A., 1025
Ketudat Cairns, J.R., 999
Kikuchi, A., 903
Kikuchi, H., 989
Kimura, N., 923
Kimura, S., 909
Kiyama, H., 923
Koga, S., 1079
Kohno, I., 1017
Kojima, N., 1009
Kono, M., 1033
Koyama, T., 917
Kumagai, M., 951
Kurosawa, N., 1033
- Lee, C.H., 1059
Lee, H.-J., 897
Lee, H.S., 1059
Lee, J.G., 1059
Lethias, C., 957
- Lu, B., 897
- Maeng, P.J., 1059
Makino, R., 965
Matsumoto, A., 1009
Mizuochi, T., 1009
Moraes, L.M.P., 891
Morita, T., 1087
Murata-Hori, M., 903
- Nagano, S., 965
Nakagami, Y., 941
Nakamura, M., 989
Nakamura, S., 1025
Nakashima, K., 923
Narita, T., 975
Nishimune, Y., 1087
Nishino, T., 917
Nozaki, M., 1087
- Ohkura, N., 1017
Ohshima, T., 1079
Ozaki, H., 1045
- Park, S.-Y., 965
- Sagami, H., 1073
Saido, T.C., 897
Saito, K., 951
Sakaihara, T., 1073
Sakasegawa, S., 1079
Sakuraba, H., 1079
Santos-Silva, M.A., 891
Sato, K., 1025
Satomi, M., 909
Schneider-Mergener, J., 1051
Shiku, H., 1017
Shimada, H., 965
Shimizu, S., 1079
Shindo, S., 951
Shiro, Y., 965
Shirotani, K., 897
- Srisomsap, C., 999
Suzuki, A., 941
Suzuki, N., 989
Svasti, J., 999
- Tachida, Y., 1033
Taga, T., 923
Takahashi, M., 1079
Takahashi, S., 951
Takaki, Y., 897
Takashima, S., 1033
Takeuchi, F., 1009
Takeuchi, T., 1025
Taniguchi, S., 897
Tateyama, S., 1073
Tatsuka, M., 903
Thiede, B., 999
Toyoshima, S., 897
Tsubuki, S., 897
Tsuji, S., 1033
- Urano, N., 909
Ushio, H., 909
Ushio-Sata, N., 909
- Wada, H., 1017
Wakabayashi, N., 1087
Wessner, H., 1051
Wittman-Liebold, B., 999
- Yamamoto, M., 1087
Yamauchi, A., 989
Yang, D., 989
Yoshida, Y., 1033
Yoshimoto, R., 1045
Yoshioka, I., 1079
Yoshizaki, H., 917
- Zhang, Y.-W., 917

The JB Prize

The Japanese Biochemical Society introduced the JB Prize in 1993. The prize is awarded to a deserving individual or individuals who have had a paper published in the Journal of Biochemistry in the preceding year. This prize was introduced to encourage people to submit more papers to the journal. The prize-winning papers are selected from candidate papers nominated by the Committee of the JB Editorial Board and applications of individual author(s), by the Award Committee, which is chosen by the Board of Trustees. The prize may be awarded to several papers, but the number will never exceed ten. A prize of ¥100,000 is given for each winning paper. The prize giving ceremony takes place at the Annual Meeting of the Japanese Biochemical Society.

The prize-winning papers for the current year are as follows:

Norihiko KAGEYAMA, Shunji NATSUKA, and Sumihiro HASE: Molecular Cloning and Characterization of Two Zebrafish $\alpha(1,3)$ Fucosyltransferase Genes Developmentally Regulated in Embryogenesis (Vol. 125, No. 4, pp. 838–845)

Hiroyuki ITABE, Ryuta HOSOYA, Ken KARASAWA, Shiro JIMI, Keiji SAKU, Shigeo TAKEBAYASHI, Tsuneo IMANAKA, and Tatsuya TAKANO: Metabolism of Oxidized Phosphatidylcholines Formed in Oxidized Low Density Lipoprotein by Lecithin-Cholesterol Acyltransferase (Vol. 126, No. 1, pp. 153–161)

Haruki YAMAGUCHI, Tomoko NISHIYAMA, and Makoto UCHIDA: Binding Affinity of *N*-Glycans for Aromatic Amino Acid Residues: Implications for Novel Interactions between *N*-Glycans and Proteins (Vol. 126, No. 2, pp. 261–265)

Takayuki KAWAKAMI, Toshiaki SUZUKI, Sung Hee BAEK, Chin Ha CHUNG, Hiroshi KAWASAKI, Hisashi HIRANO, Arata ICHIYAMA, Masao OMATA, and Keiji TANAKA: Isolation and Characterization of Cytosolic and Membrane-Bound Deubiquitinating Enzymes from Bovine Brain (Vol. 126, No. 3, pp. 612–623)

Jun HOSEKI, Takato YANO, Yoshinori KOYAMA, Seiki KURAMITSU, and Hiroyuki KAGAMIYAMA: Directed Evolution of Thermostable Kanamycin-Resistance Gene: A Convenient Selection Marker for *Thermus thermophilus* (Vol. 126, No. 5, pp. 951–956)

Noriko NAKAGAWA, Mitsuaki SUGAHARA, Ryoji MASUI, Ryuichi KATO, Keiichi FUKUYAMA, and Seiki KURAMITSU: Crystal Structure of *Thermus thermophilus* HB8 UvrB Protein, a Key Enzyme of Nucleotide Excision Repair (Vol. 126, No. 6, pp. 986–990)

Hiroaki KONISHI, Toshihide FUJIYOSHI, Yasuhisa FUKUI, Hidenori MATSUZAKI, Toshiyoshi YAMAMOTO, Yoshitaka ONO, Mirjana ANDJELKOVIC, Brian A. HEMMINGS, and Ushio KIKKAWA: Activation of Protein Kinase B Induced by H₂O₂ and Heat Shock through Distinct Mechanisms Dependent and Independent of Phosphatidylinositol 3-Kinase (Vol. 126, No. 6, pp. 1136–1143)

Hirokuni MIYAMOTO, Fumiko MITANI, Kuniaki MUKAI, Makoto SUEMATSU, and Yuzuru ISHIMURA: Studies on Cytogenesis in Adult Rat Adrenal Cortex: Circadian and Zonal Variations and Their Modulation by Adrenocorticotrophic Hormone (Vol. 126, No. 6, pp. 1175–1183)

The people who were concerned with the reviewing of manuscripts in 2000 were as follows:

ABE Teruo	HASE Toshiharu	INAGAKI Nobuya
AIBA Hiroji	HASHIMOTO Naohiro	INOUE Akio
AKAIKE Takaaki	HASUMI Hideyo	INOUE Hideshi
AKASAKA Kazuyuki	HATA Shingo	INOUE Masayasu
AKIRA Shizuo	HATA Yasuo	INOUE Yoshiharu
AKIYAMA Yoshinori	HATANAKA Hiroshi	INOUE Kuniyo
AKUTSU Hideo	HAYASHI Hideyuki	INUI Makoto
ARAI Hiroyuki	HAYASHI Jun-ichi	IRIMURA Tatsuro
ARAI Takao	HAYASHI Rikimaru	ISEMURA Mamoru
ARATA Yoji	HAYASHI Takahisa	ISHIDOH Kazumi
ARISAKA Fumio	HAYASHI Tetsuya	ISHIGURO Masatsune
BABA Tadashi	HAYASHI Toshihiko	ISHINO Fumitoshi
BANNAI Shiro	HENGSTENBERG Wolfgang	ISHIURA Shoichi
EJIRI Shinichiro	HIGUCHI Hiroshi	ISOBE Kimiyasu
EMORI Yasufumi	HIMENO Kunisuke	ITABE Hiroyuki
ENDO Takeshi	HIRABAYASHI Jun	ITO Akio
ENDO Tamao	HIRABAYASHI Yoshio	ITO Ken
ENDO Toshiya	HIRATA Dai	ITO Koreaki
ENDO Tsuyoshi	HIROCHIKA Hirohiko	ITO Makoto
ENDO Yaeta	HIROSE Masaaki	ITO Takashi
ENGEL James D.	HIROSE Shigehisa	ITOH Toshiki
ENOMOTO Takemi	HIROSE Susumu	IWAMORI Hiroyuki
FUJII Hirotada	HIROTSU Ken	IWAMORI Masao
FUJII Junichi	HISATAKE Koji	IWAMOTO Hiroyuki
FUJIKI Yukio	HIWADA Kunio	IWASA Tatsuo
FUJISAKI Shingo	HOMMA Yoshimi	JIMENEZ Antonio
FUJITA Yasutaro	HONDA Mitsuo	KADOMATSU Kenji
FUKADA Harumi	HONKE Koichi	KAGAMIYAMA Hiroyuki
FUKAMIZU Akiyoshi	HONMA Hiroshi	KAGEYAMA Ryoichiro
FUKUDA Ryuji	HONMA Michio	KAGEYAMA Takashi
FUKUI Kiyoshi	HORI Hiroyuki	KAKINUMA Yoshimi
FUKUMAKI Yasuyuki	HORI Kazuko	KAMIHIRA Masamichi
FUKUSHIMA Yoshihiro	HORIGOME Tsuneyoshi	KAMIRYO Tatsuyuki
FUKUYAMA Keiichi	HORII Toshihiro	KANAZAWA Hiroshi
FURUKAWA Kiyoshi	HORIIKE Kihachiro	KANEDA Yasufumi
FURUKAWA Koichi	HORIUCHI Seikoh	KANGAWA Kenji
FURUKAWA Shoei	HORIUCHI Takashi	KANNAGI Reiji
FUTAI Masamitsu	HOSHINO Takayuki	KANOH Hideo
GEKKO Kunihiko	HOSOI Kazuo	KASAHARA Michihiro
GOJOBORI Takashi	IBUKA Akiko	KASAHARA Tadashi
GONDO Yoichi	ICHIHARA Kosuke	KASHMIRI S. V. S.
GOTO Yuji	ICHLJYO Hidenori	KATADA Toshiaki
GOTOH Naomasa	ICHIKAWA Yoshiyuki	KATAKURA Yoshinori
GOTOH Osamu	IGARASHI Kazuei	KATAOKA Hiroshi
GOTOH Yukiko	IGARASHI Kazuhiko	KATAOKA Kazunori
HABUCHI Osami	IINO Masamitsu	KATAYAMA Eisaku
HAGA Tatsuya	IIZUKA Tetsutaro	KATO Hiroaki
HAGIWARA Masatoshi	IKAI Atsushi	KATO Hisao
HAKOSHIMA Toshio	IKEBE Mitsuo	KATO Koichi
HAMAMOTO Toshiro	IKEDA Hideo	KATO Shigeaki
HAMASAKI Naotaka	IKEDA Tokuji	KATO Takeshi
HANAI Nobuo	IMAGAWA Masayoshi	KATUNUMA Nobuhiko
HARA Saburo	IMAIZUMI Katsumi	KAWAI Gota
HARADA Bobuhiro	IMAJOH-OHMI Shinobu	KAWAMURA Fujio
HARASHIMA Satoshi	IMOTO Taiji	KAWAMURA Satoru
HASE Sumihiro	INAGAKI Fuyuhiko	KAWANO Keiichi

KAWASHIMA Seiichi
KIDO Hiroshi
KIKKAWA Ushio
KIKUCHI Akihiko
KIKUCHI Kunimi
KIKUCHI Masakazu
KIMURA Makoto
KIMURA Tomoatsu
KISO Yoshiaki
KITA Kiyoshi
KITAJIMA Ken
KITAMURA Naomi
KOBAYASHI Hiroshi
KOBAYASHI Tetsuo
KOBAYASHI Yuji
KODAIRA Kenichi
KOHAMA Kazuhiro
KOIDE Takehiko
KOIKE Tatsuro
KOJIMA Masaki
KUMAKURA Konosuke
KOJIMA Shuichi
KOKUBO Tetsuro
KOMINAMI Eiki
KOMINAMI Shiro
KONDO Hiroki
KONISHI Yasuko
KOSAKA Hiroaki
KUBO Izumi
KUBOTA Hiroshi
KUBOTA Shunichiro
KUDO Ichiro
KUDO Toshio
KUMAGAI Hidehiko
KUMAGAI Izumi
KUMAZAKI Takashi
KURAMITSU Seiki
KUROSAWA Yoshikazu
KUSUNOKI Susumu
KUSUNOSE Masamichi
KUWAJIMA Kunihiko
MABUCHI Issei
MAEDA Hiroshi
MAEDA Masatomo
MAEDA Tatsuya
MAKI Masatoshi
MARUYAMA Ikuro
MASAI Hisao
MATSUSHIMA Koji
MATSUURA Yoshiki
MEKADA Eisuke
MIHARA Katsuyoshi
MIKAMI Bunzo
MIKI Hiroaki
MIKI Kunio
MIKI Toshiaki
MIURA Kenji
MIURA Retsu
MIYAGI Taeko

MIYASAKA Masayuki
MIYATA Toshiyuki
MIYAZAKI Kaoru
MIZUNO Kensaku
MORI Hiroyuki
MORI Masataka
MORITA Takashi
MORITA Yasutaka
MORIYAMA Akihiko
MORIYAMA Yoshinori
MOROHASHI Ken-ichirou
MUKAI Tsunehiro
MUNEYUKI Eiro
MURAKAMI Yuji
MURAMATSU Takashi
MURAYAMA Kimie
MUTA Tatsushi
NADA Shigeyuki
NAGAI Sonoko
NAGAMUNE Teruyuki
NAGAOKA Isao
NAGASAWA Hiromichi
NAGATA Kazuhiro
NAKABEPPU Yusaku
NAKADA Hiroshi
NAKAFUKU Masato
NAKAGAWA Yasuhito
NAKAJIMA Tasuku
NAKAMURA Kenzo
NAKAMURA Kouji
NAKAMURA Michio
NAKAMURA Tatsunosuke
NAKAMURA Yoshikazu
NAKASHIMA Shigeru
NARIMATSU Hisashi
NEGISHI Kazuo
NEGISHI Manabu
NINOMIYA Yoshifumi
NISHI Yoshisuke
NISHIDA Eisuke
NISHIHARA Shoko
NISHIJIMA Masahiro
NISHIKAWA Satoshi
NISHIKAWA Shuichi
NISHIMURA Osamu
NISHIMURA Yasuharu
NISHIMURA Yoshifumi
NISHIMURA Yukio
NISHINA Hiroshi
NISHINA Yasuzo
NISHINO Takeshi
NISHIYAMA Kenichi
NISHIYAMA Makoto
NITTA Katsutoshi
NORIOKA Shigemi
NUREKI Osamu
OBINATA Takashi
ODA Kimimitsu
ODA Kohei

ODA Toshiaki
ODANI Shoji
OGAWA Kazuo
OGAWA Tomohisa
OGAWA Yasuo
OGURA Takashi
OHASHI Kazuyo
OHKUBO Iwao
OHKUMA Yoshiaki
OHMIYA Yoshihiro
OHNISHI Kohei
OHNO Hiroshi
OHNO Shigeo
OHSUMI Yoshinori
OHTA Akinori
OHTA Tsutomu
OHTA Yoshiji
OHTSUKI Iwao
OKA Toshihiko
OKA Yoshitomo
OKADA Norihiro
OKAMOTO Harumasa
OKAMOTO Mitsuhiro
OKAMOTO Yoh
OKANO Teruo
OKAYAMA Minoru
ONISHI Hirofumi
OSHIMURA Mitsuo
OSUMI Takashi
OYA Yoshikazu
RAZIN Samuel
SAFFEN David W.
SAGAMI Ikuko
SAHEKI Takeyori
SAIDO Takaomi
SAKAI Hideaki
SAKAI Hiroshi
SAKAI Hiroshi
SAKAKI Toshiyuki
SAKANO Yoshiyuki
SAKIYAMA Fumio
SAKU Keijiro
SAKURAI Hiroshi
SAMBONGI Yoshihiro
SANO Mamoru
SASAKI Makoto
SATO Ken
SATOH Ken
SATOW Yoshinori
SEIKI Motoharu
SEKIGUCHI Kiyotoshi
SHIBA Kiyotaka
SHIBAHARA Shigeaki
SHIBUYA Naoto
SHIGEKAWA Munekazu
SHIMADA Ichio
SHIMIZU Sakayu
SHINAGAWA Hideo
SHINOHARA Yasuo
SHINOZAKI Kazuo

SHIOTA Kunio
SHIRAKAWA Masahiro
SHIRO Yoshitsugu
SHIZUTA Yutaka
SHOUN Hirofumi
SOBUE Kenji
SODE Koji
SORIMACHI Hiroyuki
SUDA Takashi
SUEMATSU Makoto
SUGAHARA Kazuyuki
SUGITA Mutsumi
SUGIYAMA Hiroyuki
SUZUKI Keiichiro
SUZUKI Shinnichiro
SUZUKI Yasuo
TABATA Satoshi
TAGUCHI Hiroshi
TAI Tadashi
TAIRA Kazunari
TAIRA Masanori
TAJIMA Shoji
TAKABE Teruhiro
TAKAGAKI Keiichi
TAKAGI Hiroshi
TAKAGI Masahiro
TAKAGI Masamichi
TAKAHASHI Hiroki
TAKAHASHI Katsutada
TAKAHASHI Kenji
TAKAHASHI Masaaki
TAKAHASHI Masami
TAKAHASHI Naoyuki
TAKAHASHI Nobuyuki
TAKAHASHI Noriko
TAKAHASHI Takayuki
TAKAI Katsuji
TAKAI Toshiyuki
TAKANO Tatsuya
TAKASAKI Chikahisa
TAKEDA Atsushi
TAKEDA Shunichi
TAKEHARA Kazuhiko
TAKESHIGE Koichiro
TAKITA Teisuke
TAMIYA Eiichi

TANABE Tadashi
TANAKA Akiyoshi
TANAKA Isao
TANAKA Keiji
TANAKA Sakae
TANAKA Tatsuo
TANAKA Toshio
TANIGUCHI Naoyuki
TANIZAWA Katsuyuki
TANOKURA Masaru
TANUMA Sei-ichi
TOH-E Akio
TOIDA Toshihiko
TOKUMURA Akira
TOKUNAGA Fumio
TONOMURA Ben'ichiro
TSUBAKI Motonari
TSUCHIYA Eiko
TSUDA Hiroko
TSUDA Michio
TSUJI Shoji
TSUJI Shuichi
TSUJIMOTO Masafumi
TSUJIMOTO Yoshihide
TSUKAGOSHI Norihiro
TSUKUBA Takayuki
TSUMOTO Kouhei
TSURIMOTO Toshiki
TSURU Daisuke
TSUZUKI Teruhisa
UCHIJIMA Yasunobu
UCHIYAMA Hidefumi
UCHIYAMA Yasuo
UEDA Hiroshi
UEDA Hitoshi
UEDA Kunihiko
UMEBAYASHI Kyohei
UMEDA Masato
UNEMOTO Tsutomu
URABE Itaru
URADE Reiko
URANO Naoto
UTSUMI Hideo
WADA Ikuo
WADA Yoh
WAKAGI Takayoshi

WAKAMATSU Kaori
WAKASUGI Hiro
WATANABE Kimitsuna
WATANABE Toshio
WILDER Marcy N.
YAMADA Michiyuki
YAMAGISHI Akihiko
YAMAGUCHI Masayoshi
YAMAMOTO Akitsugu
YAMAMOTO Kenji
YAMAMOTO Kenji
YAMAMOTO Masayuki
YAMAMOTO Tokuo
YAMANAKA Tateo
YAMANE Kunio
YAMANE Takashi
YAMASHITA Katsuko
YANAGISHITA Masaki
YASUGI Etsuko
YASUMOTO Kenichi
YASUOKA Noritake
YAZAWA Michio
YAZAWA Shin
YOKOTA Etsuo
YOKOTA Jun
YOKOTA Takashi
YOKOTA Yoshifumi
YOKOYAMA Shigeyuki
YOKOYAMA Shinji
YONEZAWA Hiroo
YOSHIDA Hiroshi
YOSHIDA Tadashi
YOSHIDA Yuzo
YOSHIMORI Tamotsu
YOSHIMOTO Tadashi
YOSHIMURA Akihiko
YOSHINO Masataka
YOSHIOKA Katsuji
YOSHIOKA Yasushi
YUBISUI Toshitsugu
YUI Nobuhiko
YUMOTO Noboru
YUTANI Katsuhide
ZENNO Shuhei

Site-Directed Mutational Analysis of DnaA Protein, the Initiator of Chromosomal DNA Replication in *E. coli*

Tohru Mizushima

Faculty of Pharmaceutical Sciences, Okayama University, and PRESTO, Japan Science and Technology Corporation, Okayama 700-8530 (Vol. 127, No. 1, pp. 1–7)

Essential Roles of Carbohydrate Signals in Development, Immune Response and Tissue Functions, as Revealed by Gene Targeting

Takashi Muramatsu

Department of Biochemistry, Nagoya University School of Medicine, 65 Tsurumai-cho, Showa-ku, Nagoya 466-8550 (Vol. 127, No. 2, pp. 171–176)

Expression of Cytokines in Bacterial and Viral Infections and Their Biochemical Aspects

Jiro Imanishi

Department of Microbiology, Kyoto Prefectural University of Medicine, Kawaramachi-Hirokaji, Kamikyo-ku, Kyoto 602-8566 (Vol. 127, No. 4, pp. 525–530)

Functional Domain-Assembly in Hairpin Ribozymes

Yasuo Komatsu,* Ikuyo Kanzaki,* Miho Shirai,* Izumi Kumagai,* Shigeko Yamashita,* and Eiko Ohtsuka*[†]

**Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812; and [†]Present Address: Health Sciences University of Hokkaido, Tobetsu 061-0293 (Vol. 127, No. 4, pp. 531–536)*

Mechanisms of *Igf2/H19* Imprinting: DNA Methylation, Chromatin and Long-Distance Gene Regulation

Hiroyuki Sasaki, Ko Ishihara, and Reiko Kato

Division of Human Genetics, Department of Integrated Genetics, National Institute of Genetics & Department of Genetics, Graduate University for Advanced Studies, 1111 Yata, Mishima, Shizuoka 411-8540 (Vol. 127, No. 5, pp. 711–715)

The Function of Vitamin D Receptor in Vitamin D Action

Shigeaki Kato

Institute of Molecular and Cellular Biosciences, The University of Tokyo, Yayoi-cho, Bunkyo-ku, Tokyo, 113-0032; and CREST, Japan Science and Technology Corporation, 4-1-8 Honcho, Kawaguchi, Saitama 332 (Vol. 127, No. 5, pp. 717–722)

***Porphyromonas gingivalis* Proteinases as Virulence Determinants in Progression of Periodontal Diseases**

Tomoko Kadowaki,* Koji Nakayama,[†] Kuniaki Okamoto,* Naoko Abe,* Atsuyo Baba,* Yixin Shi,[†] Dinath B. Ratnayake,[†] and Kenji Yamamoto*

*Departments of *Pharmacology and [†]Microbiology, Kyushu University Faculty of Dentistry, Higashi-ku, Fukuoka 812-8582 (Vol. 128, No. 2, pp. 153–159)*