H. Sawada, H. Yokosawa, C.C. Lambert (Eds.)

The Biology of Ascidians

With 147 Figures, Including 13 in Color

Springer
Front cover: The spawning of the Japanese solitary ascidian *Halocynthia roretzi*. Although ascidians are hermaphrodites, several species, including *H. roretzi*, are strictly self-sterile.

Back cover: The colonial ascidian *Botryllus schlosseri* (upper) and the solitary ascidian *Ciona intestinalis* (lower), both of which are cosmopolitan.
Preface

The First International Symposium on the Biology of Ascidians was held on the campus of Hokkaido University in Sapporo, Japan, June 26-30, 2000. From many countries, including Australia, Canada, France, India, Israel, Italy, Japan, Korea, South Africa, Switzerland, the United Kingdom, and the United States, 110 ascidiologists attended this meeting and 90 papers, including oral and poster presentations, were presented. This book contains 69 papers presented at the meeting.

Ascidians are dominant members of the fouling community in many parts of the world and are coming under increasing scrutiny because of their importance in all marine habitats. They share traits with other marine invertebrates and also with vertebrates. All aspects of the lives of these important marine invertebrates were discussed.

The meeting began with a consideration of fertilization and egg activation followed by a deliberation on the role of hormones in reproduction. Because of their invariant cleavage and other specific traits, ascidians have long been favored by developmental biologists. Many papers were presented ranging from morphological studies to genetic studies including the activity of genes in development and how the respective genes and related organisms evolved.

Ascidians include solitary and colonial species. In the meeting, various aspects of the systematics, reproduction, and development of compound ascidians were discussed. Both compound and solitary ascidians sequester a variety of metals, the function of which has long been enigmatic. Several of the presentations discuss various aspects of the influx and role of metals in the life of the organism. Although they are the most primitive of the chordates, both colonial and solitary ascidians have evolved the means to distinguish between self and foreign colonies and between self and foreign materials. The molecular bases of these phenomena were discussed in the meeting.

The symposium was supported by the following organizations: HOKTAC (Hokkaido Technology Advancement Center), The Inoue Foundation for Science, The Akiyama Foundation, The Itoh Foundation for the Promotion of Medical Sciences, Notsuke Fisheries Corporation, and many companies including Hands & Mind Co.

Mr. Haruhisa Shionoya, the president of Hands & Mind Co., who is developing a market for Halocynthia aurantium, the ice floe ascidian, hosted a wonderful banquet for all participants that included lyophilized powder of H. aurantium in all courses. We deeply appreciate Mr. Shionoya's contribution to this symposium. We are also very grateful to the Organizing Committee (Chairperson, Hitoshi Sawada) of this symposium for their effort in organizing the meeting. This meeting also acknowledged the many contributions of Dr. Takaharu Numakunai, who recently retired from Tohoku University, to all aspects of the study of ascidians in Japan. The next International Symposium on the Biology of Ascidians is to be held in the United States. We extend our best wishes for the success of the next meeting.

Hitoshi Sawada, Ph.D.
Hideyoshi Yokosawa, Ph.D.
Charles C. Lambert, Ph.D.
Participants in The First International Symposium on the Biology of Ascidians (ISOBA)
June 26-30, 2000, Sapporo, Japan


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ABE, Takeyuki, Department of Biology, Nihon University School of Medicine, Oyaguchi, Kamicho, Itabashi-ku, Tokyo 173-8610, Japan

ALBRIEUX, Mireille, Laboratoire Canaux Ioniques et Signalisation, DBMS / CEA-UJF-INSERM, 17 rue des Martyrs, F-38054 Grenoble, France

ALLEN, Kathleen, Department of Biological Science, California State University, Fullerton, P.O. Box 6850, Fullerton, CA 92834-6850, USA

ARAII, Makoto, Department of Biological Science and Technology, Science University of Tokyo, 2641 Yamazaki, Noda, Chiba 278-8510, Japan

ARIZZA, Vincenzo, Dipartimento di Biologia Animale, Università di Palermo, via Archirafi, 18 Palermo 90123, Italy

ARNOULT, Christophe, Laboratoire Canaux Ioniques et Signalisation, DBMS / CEA-UJF-INSERM, 17 rue des Martyrs F-38054 Grenoble, France

AZUMI, Kaoru, Department of Biochemistry, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan

BABA, Tadashi, Institute of Applied Biochemistry and Tsukuba Advanced Research Alliance, University of Tsukuba, Tsukuba Science City, Ibaraki 305-8572, Japan

BALLARIN, Loriano, Dipartimento di Biologia, Università di Padova, via U. Bassi 58/B, Padova 35100, Italy

BATES, William R., Department of Biology, Okanagan University College, North Kelowna Campus, 3333 College Way, Kelowna, BC, Canada V1V 1V7

BEN-SHLOMO, Rachel, Minerva Center for Marine Invertebrates Immunology and Developmental Biology, Israel Oceanographic and Limnological Research, National Institute of Oceanography, P.O. Box 8030, Haifa 31080, Israel
BISHOP, John D.D., Marine Biological Association of the United Kingdom, The Laboratory, Citadel Hill, Plymouth PL1 2PB, UK
jbis@mba.ac.uk 305

BOLDRIN, Francesco, Dipartimento di Biologia, Università di Padova, via U. Bassi 58/B, 35121 Padova, Italy 102

BURIGHEL, Paolo, Dipartimento di Biologia, Università di Padova, via U. Bassi 58/B, 35121 Padova, Italy burighel@civ.bio.unipd.it 102, 142

CAMMARATA, Matteo, Dipartimento di Biologia Animale, Università di Palermo, via Archirafi, 18 Palermo 90123, Italy 392, 402

CARBALLO, J. L., Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México. Av. Joel Montes Camarena s/n, Apdo. 811, 82000-Mezatlán, México 355

CERVELLO, Melchiorre, Instituto di Biologia dello Sviluppo, CNR, via Ugo la Malfa 153, 90146 Palermo, Italy 402

CHIBA, Joe, Department of Biological Science and Technology, Science University of Tokyo, 2641 Yamazaki, Noda, Chiba 278-8510, Japan chibaj@rs.noda.sut.ac.jp 419, 445

CHIJI, Hideyuki, Department of Food Science and Human Nutrition, Faculty of Human Life Science, Fuji Women's College, Ishikari 061-3204, Hokkaido, Japan hchiji@fujijoshi.ac.jp 462

CHINNICI, Cinzia, Dipartimento di Biologia Animale, Università di Palermo, via Archirafi, 18 Palermo 90123, Italy 402

CHITHRA LEKHA DEVI, S. K., Department of Chemistry, University of Kerala, Trivandrum, India 341

CIMA, Francesca, Dipartimento di Biologia, Università di Padova, via U. Bassi 58/B, Padova 35100, Italy 374

COHEN, Sarah, Department of Organismic and Evolutionary Biology, Harvard University, Cambridge, MA 02138, USA 315

COLE, Alison G., Life Sciences Centre, Dalhousie University, Halifax Nova Scotia, Canada B3H 4J1 137

COOPER, Edwin L., Laboratory of Comparative Immunology, Department of Neurobiology, School of Medicine, University of California, Los Angeles, CA 90095-1763, USA cooper@ucla.edu 380, 392

DATE, Tatsuya, Department of Aquaculture, Kochi University, Kochi 783-8502, Japan 436

DEGNAN, Bernard M., Department of Zoology and Entomology, University of Queensland, Brisbane, Queensland 4072, Australia bdegnan@zoology.uq.edu.au 258

DE SANTIS, Rosaria, Laboratory of Cell Biology, Stazione Zoologica "A. Dohrn", Villa Comunale 80121, Napoli, Italy desantis@alpha.szn.it 14
DI GREGORIO, Anna, Division of Genetics and Development, Department of Molecular and Cell Biology, University of California, 401 Barker Hall, Berkeley, CA 94720-3204, USA
annadg@uclink4.berkeley.edu

DOUEK, Jacob, Minerva Center for Marine Invertebrates Immunology and Developmental Biology, Israel Oceanographic and Limnological Research, National Institute of Oceanography, P.O. Box 8030, Haifa 31080, Israel

EISENHUT, Markus, Department of Zoology, University of Zürich, Winterthurerstr. 190, CH-8057 Zürich, Switzerland

ERIVES, Albert, Division of Biology, California Institute of Technology, Pasadena, CA 91125, USA
aerives@its.caltech.edu

FÜGLISTER Monika, Department of Zoology, University of Zürich, Winterthurerstr. 190, CH-8057 Zurich, Switzerland

FUJISAWA, Shigeld, Department of Biology, Faculty of Science, Kochi University, Kochi 780-8520, Japan
tataaa@cc.kochi-u.ac.jp

FUKUMOTO, Makoto, Division of Cell Function, Graduate School of Integrative Science, Institute of Natural Sciences, Nagoya City University, Mizuho-ku, Nagoya 467-8501, Japan
fukumoto@nsc.nagoya-cu.ac.jp

FUSETANI, Nobuhiro, Fusetani Biofouling Project. Exploratory Research for Advanced Technology (ERATO), Research Development Corporation of Japan (JRDC), c/o Niigata Engineering Co., Ltd., Isogo-ku, Yokohama 235-0017, Japan; Laboratory of Aquatic Natural Products Chemistry, Graduate School of Agricultural and Life Sciences, The University of Tokyo, Bunkyo-ku, Tokyo 113-8657, Japan

GAMBINO, Roberto, Instituto di Biologia dello Sviluppo, CNR, via Ugo la Malfa 153, 90146 Palermo, Italy

GOUDA, Muneki, Department of Life Science, Himeji Institute of Technology, Harima Science Garden City, Akoh-gun, Hyogo 678-1279, Japan

GRUNWALD, Didier, Laboratoire Canaux Ioniques et Signalisation, DBMS / CEA-UJF-INSERM, 17 rue des Martyrs F-38054 Grenoble, France

HAYASHI, Chizuko, Department of Food Science and Human Nutrition, Faculty of Human Life Science, Fuji Women's College, Ishikari 061-3204, Japan

HIGA, Tatsuo, Department of Chemistry, Biology and Marine Sciences, University of Ryukyus, Okinawa, Japan

HIROTA, Hiroshi, Fusetani Biofouling Project. Exploratory Research for Advanced Technology (ERATO), Research Development Corporation of Japan (JRDC), c/o Niigata Engineering Co., Ltd., Isogo-ku, Yokohama 235-0017, Japan (Present address: Genomic Sciences Center, The Institute of Physical and Chemical Research (RIKEN), Wako 351-0198, Japan)
KATAGIRI, Yasuo, Section of Basic Science, Tokyo Women’s Medical University, School of Nursing, Daito-cho, Ogasa-gun, Shizuoka 437-1434, Japan

KATO, Haruko, Fusetani Biofouling Project. Exploratory Research for Advanced Technology (ERATO), Research Development Corporation of Japan (JRDC), c/o Niigata Engineering Co., Ltd., Isogo-ku, Yokohama 235-0017, Japan

KATSUYAMA, You, Division of Neuroscience Children’s Hospital, Harvard Medical School, 61 Binney Street, Boston, MA 02115, USA

KAWAKAMI, Isao, Department of Life Science, Himeji Institute of Technology, Harima Science Garden City, Ako-gun, Hyogo 678-1279, Japan

KAWAMURA, Hiroshi, Department of Biology, Faculty of Science, Konan University, Higashinada-ku, Kobe 658-8501, Japan
kokko@devl.bio.konan-u.ac.jp

KAWAMURA, Kazuo, Laboratory of Molecular and Cellular Biotechnology, Department of Biology, Faculty of Science, 2-5-1 Akebono-cho, Kochi University, Kochi 780-8520, Japan
kazuk@cc.kochi-u.ac.jp

KAWASHIMA, Shulichi, Institute of Chemical Research, Kyoto University, Uji 611-0011, Japan

KAWASHIMA, Takeshi, Department of Zoology, Graduate School of Science, Kyoto University, Sakyo-ku, Kyoto 606-8502, Japan
kawashima@develop.zool.kyoto-u.ac.jp

KIM, Ju, Department of Biological Science, California State University, Fullerton, P.O. Box 6850, Fullerton, CA 92834-6850, USA

KIMURA, Yukiko, Misaki Marine Biological Station, Graduate School of Science, University of Tokyo, 1024 Koajiro, Misaki, Miura, Kanagawa 238-0225, Japan
yukiko@mmbs.s.u-tokyo.ac.jp

KOCH, Robert A., Department of Biological Science, California State University, Fullerton, P.O. Box 6850, Fullerton, CA 92834-6850, USA
rkoch@fullerton.edu

KODAMA, Eri, Department of Biochemistry, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan

KOYAMA, Hiromichi, College of Nursing, Yokohama City University, 3-9 Fukuura, Kanazawa-ku, Yokohama 236-0004, Japan
hkoyama@med.yokohama-cu.ac.jp

KUKURTÇU, H. B., PHARMA MAR S.A., La Calera 3, Tres Cantos, 28760-Madrid, Spain

KUSAKABE, Takehiro, Division of Biological Science, Graduate School of Science, Hokkaido University, Sapporo 060-0812, Japan
(Present address: Department of Life Science, Himeji Institute of Technology, Harima Science Garden City, Akoh-gun, Hyogo 678-1279, Japan)
tgk@sci.himeji-tech.ac.jp
KUWABARA, Mikinori, Laboratory of Radiation Biology, Graduate School of Veterinary Medicine, Hokkaido University, Kita-ku, Sapporo 060-0818, Japan 456

LAMBERT, Charles C., Department of Biological Science, California State University Fullerton
(Home) 12001 11th Ave. NW, Seattle, WA 98177, USA 24

clambert@fullerton.edu

LAMBERT, Gretchen, Department of Biological Science, California State University Fullerton, Fullerton CA92834, USA
(Home) 12001 11th Ave. NW, Seattle, WA 98177, USA 249

glambert@fullerton.edu

LEVINE, Michael, Department of Molecular Cell Biology, Division of Genetics and Development, 401 Barker Hall, University of California Berkeley, CA 94720, USA mlevine@uclink4.berkeley.edu 193, 202

LOTFIZADEH, Ali, Department of Biological Science, California State University, Fullerton, P.O. Box 6850, Fullerton, CA 92834-6850, USA 30

MAKABE, Kazuhirou W., Department of Zoology, Graduate School of Science, Kyoto University, Sakyō-ku, Kyoto 606-8502, Japan 165

kwmakabe@ascidian.zool.kyoto-u.ac.jp

MANNI, Lucia, Dipartimento di Biologia, Università di Padova, via U. Bassi 58/B, 35121 Padova, Italy 142

lmanni@civ.bio.unipd.it

MARINO, Rita, Laboratory of Cell Biology, Stazione Zoologica "A. Dohrn", Villa Comunale 80121, Napoli, Italy 14

MARTIN, S., PHARMA MAR S.A., La Calera 3, Tres Cantos, 28760-Madrid, Spain 355

MARTINUCCI, GianBruno, Dipartimento di Biologia, Università di Padova, via U. Bassi 58/B, 35121 Padova, Italy 102

martingb@civ.bio.unipd.it

MATSUMOTO, Jun, National Institute of Bioscience and Human Technology, AIST, Higashi 1-1, Tsukuba, Ibaraki 305-8566, Japan 158

jmatsumo@nibh.go.jp

MATSUMOTO, Megumi, Department of Bioscience and Chemistry, Faculty of Agriculture, Hokkaido University, Sapporo 060, Japan 462

McDOUGALL, Alex, Department of Physiological Sciences, Medical School, Framlington Place, University of Newcastle upon Tyne, Newcastle upon Tyne, NE2 4HH, UK 36

a.d.mcdougall@ncl.ac.uk

MEINERTZMAGEN, Ian A., Life Sciences Centre, Dalhousie University, Halifax Nova Scotia, Canada B3H 4J1 137

iain@is.dal.ca

MICHIBATA, Hitoishi, Mukaishima Marine Biological Laboratory, Graduate School of Science, Hiroshima University, 2445 Mukaishima-cho, Hiroshima 722-0073, Japan 363

hmichi@sci.hiroshima-u.ac.jp
MIYAMOTO, Takayuki, Department of Life Science, Himeji Institute of Technology, Harima Science Garden City, Akoh-gun, Hyogo 678-1279, Japan 153

MIYAZAWA, Seita, Department of Biological Sciences, Graduate School of Science, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan seita@biol.s.u-tokyo.ac.jp 408

MORENO, Tatiane R., Zoology Graduate Program, Universidade Federal do Paraná, 81531-990, CP 19020, Paraná, Brazil tatiane@bio.ufpr.br 271

MORISAWA, Masaaki, Misaki Marine Biological Station, Graduate School of Science, University of Tokyo, 1024 Koajiro, Misaki, Mirura, Kanagawa 238-0225, Japan morisawa@nmbs.s.u-tokyo.ac.jp 81, 86, 92, 241

MOUTIN, Marie-Jo, Laboratoire Canaux Ioniques et Signalisation, DBMS / CEA-UJF-INSERM, 17 rue des Martyrs, F-38054 Grenoble, France 47

MURABE, Naoyuki, Department of Bioscience, Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8501, Japan nmurabe@bio.titech.ac.jp 9

NAKAGAWA, Masashi, Department of Life Science, Himeji Institute of Technology, Harima Science Garden City, Ako-gun, Hyogo 678-1279, Japan 131, 147, 153

NARANJO, Santiago A., PHARMA MAR S.A., La Calera 3, Tres Cantos, 28760-Madrid, Spain snaranjo@pharmamar.com 355

NISHIDA, Hiroki, Department of Life Science, Tokyo Institute of Technology, 4259, Nagatsuta, Yokohama 226-8501, Japan hnishida@bio.titech.ac.jp 165

NISHIKATA, Takahito, Department of Biology, Faculty of Science, Konan University, and High Technology Research Center, Konan University, Higashinada-ku, Kobe 658-8501, Japan nisikata@base2.ipc.konan-u.ac.jp 165, 178, 186

NONAKA, Masaru, Department of Biological Sciences, Graduate School of Science, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan mnnonaka@biol.s.u-tokyo.ac.jp 408

NUMAKUNAI, Takaharu, Department of Bioscience and Biotechnology, Faculty of Engineering, Aomori University, Kohbata 2-3-1, Aomori 030-0943, Japan tnuna@aomori-u.ac.jp 117

ODA, Izumi, Department of Biological Sciences, Graduate School of Science, Tokyo Metropolitan University, 1-1 Minamiosawa, Hachioji, Tokyo 192-0397, Japan paulklee@comp.metro-u.ac.jp 211

OH, Myung-Joo, Department of Fish Pathology, Yosu University, Kukdong 195, Yosu, Chunnam 550-747, Korea 436

OHASHI, Mitsuko, Department of Biology, Faculty of Science, Kochi University, Kochi 780-8520, Japan (Present address: Nagoya University, Nagoya 464-8602, Japan) 300
OHBA, Hiroyoshi, Department of Biological Science and Technology, Science University of Tokyo, 2641 Yamazaki, Noda, Chiba 278-8510, Japan
ohba@rs.noda.sut.ac.jp 419

OHKUMA, Mahito, Department of Life Science, Himeji Institute of Technology, Harima Science Garden City, Ako-gun, Hyogo 678-1279, Japan
(Present address: School of Medicine, Fujita Health University, Kutukake-cho, Toyoake, Aichi 470-1192, Japan) 131, 147

OHTAKE, Shin-ichi, Department of Biology, Nihon University School of Medicine, Oyaguchi, Kami, Itabashi-ku, Tokyo 173-8610, Japan
otakes@med.nihon-u.ac.jp 419, 445, 450

OKA, Yoshitaka, Misaki Marine Biological Station, Graduate School of Science, University of Tokyo, 1024 Koajiro, Misaki, Miura, Kanagawa 238-0225, Japan 86

OKAMURA, Yasushi, National Institute of Bioscience and Human Technology, AIST, Higashi 1-1, Tsukuba, Ibaraki 305-8566, Japan 158

OKUYAMA, Makiko, Shimoda Marine Research Center, University of Tsukuba, Shimoda 5-10-1, Shizuoka 415-0025, Japan 315

PADMAKUMAR, K., Department of Aquatic Biology and Fisheries, University of Kerala, Trivandrum, India 341

PARKER-NANCE, Shirley, Zoology Department, University of Port Elizabeth, P.O. Box 1600, Port Elizabeth, 6000, South Africa
Shirley@JustBlue.co.za 278

PARRINELLO, Niccolò, Dipartimento di Biologia Animale, Università di Palermo, via Archirafi, 18 Palermo 90123, Italy
nicpar@unipa.it 380, 392, 402

PATRICOLO, Eleonora, Dipartimento di Biologia Animale, Università di Palermo, via Archirafi, 18 Palermo 90123, Italy 67, 402

PAZ, Guy, Minerva Center for Marine Invertebrates Immunology and Developmental Biology, Israel Oceanographic and Limnological Research, National Institute of Oceanography, P.O. Box 8030, Haifa 31080, Israel 426

PEMBERTON, Andrew J., Marine Biological Association of the United Kingdom, The Laboratory, Citadel Hill, Plymouth PL1 2PB, UK; Department of Zoology, University of Aberdeen, Tillydrone Avenue, Aberdeen AB24 2TZ, UK
anp@wpo.nerc.ac.uk 305

PINTO, Maria Rosaria, Laboratory of Cell Biology, Stazione Zoologica "A. Dohrn", Villa Comunale 80121, Napoli, Italy; Institute of Protein Biochemistry and Enzymology, CNR, via Marconi 10, 80125 Napoli, Italy 14

RAJASEKHARAN, K. N., Department of Chemistry, University of Kerala, Trivandrum, India 341

RINKEVICH, Baruch, Minerva Center for Marine Invertebrates Immunology and Developmental Biology, Israel Oceanographic and Limnological Research, National Institute of Oceanography, P.O. Box 8030, Haifa 31080, Israel
buki@ocean.org.il 426
SUZUKI, Satoru, Center for Marine Environmental Studies, Ehime University, Bunkyo-3, Matsuyama 790-8577, Japan ssuzuki@agr.ehime-u.ac.jp 436

SWALLA, Billie J., Zoology Department and Friday Harbor Laboratories, Box 351800, University of Washington, Seattle, WA 98195-1800, USA bjswalla@u.washington.edu 219

TAKAMURA, Katsumi, Department of Marine Biotechnology, Faculty of Engineering, Fukuyama University, Gakuen-cho 1-banchi, Fukuyama 729-0292, Japan ktakamur@ma.fuma.fukuyama-u.ac.jp 109

TANAKA, Jun'ichi, Department of Chemistry, Biology and Marine Sciences, University of Ryukyus, Okinawa, Japan 341

TANAKA, Kimio J., Department of Biology, Faculty of Science, Konan University, Higashinada-ku, Kobe 658-8501, Japan kimio@devl.bio.konan-u.ac.jp 178, 186

TANAKA, Kunio, Department of Biology, Nihon University School of Medicine, Oyaguchi, Kamicho, Itabashi-ku, Tokyo 173-8610, Japan 419, 445

TERAKADO, Kiyoshi, Department of Regulation-Biology, Faculty of Science, Saitama University, 255 Shimo-Okubo, Urawa 338-8570, Japan 125

TSUDA, Motoyuki, Department of Life Science, Himeji Institute of Technology, Harima Science Graden City, Akoh-gun, Hyogo 678-1279, Japan mtsuda@sci.himeji-tech.ac.jp 131, 147, 153

TSUKAMOTO, Sachiko, Fusetani Biofouling Project. Exploratory Research for Advanced Technology (ERATO), Research Development Corporation of Japan (JRDC), c/o Niigata Engineering Co., Ltd., Isogo-ku, Yokohama 235-0017, Japan (Present address: Faculty of Pharmaceutical Sciences, Kanazawa University, Takara-machi, Kanazawa 920-0934, Japan) sachiko@dbs.p.kanazawa-u.ac.jp 335

UEKI, Tatsuya, Mukaishima Marine Biological Laboratory, Graduate School of Science, Hiroshima University, 2445 Mukaishima-cho, Hiroshima 722-0073, Japan ueki@sci.hiroshima-u.ac.jp 363

UTSUMI, Nanami, Department of Biological Sciences, Graduate School of Science, Tokyo Metropolitan University, 1-1 Minamiohsawa, Hachiohji, Tokyo 192-0397, Japan utumina@comp.metro-u.ac.jp 215

UYAMA, Tarro, Mukaishima Marine Biological Laboratory, Graduate School of Science, Hiroshima University, 2445 Mukaishima-cho, Hiroshima 722-0073, Japan tayama@hiroshima-u.ac.jp 363

VAZZANA, Mirella, Dipartimento di Biologia Animale, Università di Palermo, via Archirafi, 18 Palermo 90123, Italy 392

VILLA, Luisanna, Department of Animal Biology, University of Palermo, via Archirafi 18, Palermo 90123, Italy 67

VILLAZ, Michel, Laboratoire Canaux Ioniques et Signalisation, DBMS / CEA-UJF-INSERM, 17 rue des Martyrs, F-38054 Grenoble, France mvillaz@cea.fr 47
VIZZINI, Aiti, Dipartimento di Biologia Animale, Università di Palermo, 
via Archirafi, 18 Palermo 90123, Italy 
camat@unipa.it 392, 402

WADA, Hirosbi, Seto Marine Biological Laboratory, Kyoto University, 
459 Shirahama, Nishimuro-gun, Wakayama 649-2211, Japan 
hwada@seto.kyoto-u.ac.jp 235

WADA, Michiko R., Department of Biology, Faculty of Science, Konan University 
Higashinada-ku, Kobe 658-8501, Japan (Present address: Mitsubishi-Kagaku Institute of 
Life Sciences, Minami-Ooya 11, Machida, Tokyo 194-8511, Japan) 
wadarin@libra.ls.m-kagaku.co.jp 178

WADA Shuichi, Department of Biological Sciences, Graduate School of Science, 
Tokyo Metropolitan University, 1-1 Minamiohsawa, Hachiohji, Tokyo 192-0397, Japan 
wadashu@comp.metro-u.ac.jp 206

WATARI, Ayako, Department of Life Science, Himeji Institute of Technology, 
Kouto 3-2-1, Kamigohri-cho, Ako-gun, Hyogo 678-1279, Japan 147

WOOD, Christine A., Marine Biological Association of the United Kingdom, 
The Laboratory, Citadel Hill, Plymouth PL1 2PB, UK 305

YAMAMORI, Tohru, Laboratory of Radiation Biology, Graduate School of 
Veterinary Medicine, Hokkaido University, Kita-ku, Sapporo 060-0818, Japan 456

YOKOSAWA, Hideyoshi, Department of Biochemistry, Graduate School of 
Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan 
yoko@pharm.hokudai.ac.jp 18, 54, 414

YOSHIDA, Manabu, Misaki Marine Biological Station, Graduate School of Science, 
University of Tokyo, 1024 Koajiro, Misaki, Miura, Kanagawa 238-0225, Japan 
yoshida@mmbs.s.u-tokyo.ac.jp 81, 86, 92, 241

YUND, Philip O., School of Marine Sciences, Darling Maine Center, University of 
Maine, Walpole, ME 04573, USA 311

ZANIOLO, Giovanna, Dipartimento di Biologia, Università di Padova, 
Via U. Bassi 58/B, 35121 Padova, Italy 
zaniolo@civ.bio.unipd.it 142, 442