

## INDEX TO AUTHORS

### A

Abe-Yoshizumi, R. See *Terashima, Kojima, and Homma*, 635

Abe, Yoshito. See *Goto, Ohkuri, Shioi, Imoto, and Ueda*, 619

Abe, Yu, Kuroda, Y., Kuboki, N., Matsushita, M., Yokoyama, N., and Kojima, N. Contribution of Complement Component C3 and Complement Receptor Type 3 to Carbohydrate-dependent Uptake of Oligomannose-coated Liposomes by Peritoneal Macrophages, 563

Adachi, E. See *Kihara, Imamura, Takemura, Mizuno, and Hayashi*, 625

Agarwal, S., Kumar, R., Gupta, P., and Dixit, A. Identification and Characterization of a Positive Regulatory *cis*-element Within the Upstream Region of *c-jun*, 741

Alexson, S.E.H. See *Reilly, Tillander, Ofman, and Hunt*, 655

Ando, C., and Ichikawa, N. Glutamic Acid in the Inhibitory Site of Mitochondrial ATPase Inhibitor, IF<sub>1</sub>, Participates in pH Sensing in Both Mammals and Yeast, 547

Ando, S. See *Gohara, Nishikawa, and Takasaki*, 675

Aoki, G., Yamada, T.K., Arii, M., Kojima, S., and Mizoguchi, T. Requirement of Ala Residues at g Position in Heptad Sequence of  $\alpha$ -Helix-forming Peptide for Formation of Fibrous Structure, 15

Aonuma, H. See *Iwaoka, Kumakura, Yoneda, Nakahara, Henmi, Nakatani, and Tomoda*, 121

Aoyama, T. See *Kyogashima, Tadano-Aritomi, Yusa, Goto, Tamiya-Koizumi, Ito, Murate, Kannagi, and Hara*, 95

Araújo, J.R., Gonçalves, P., and Martel, F. Modulation of Glucose Uptake in a Human Choriocarcinoma Cell Line (BeWo) by Dietary Bioactive Compounds and Drugs of Abuse, 177

Arakawa, T. See *Hirano, and Shiraki*, 363

Arii, M. See *Aoki, Yamada, Kojima, and Mizoguchi*, 15

Asahi, S. See *Wada, Mitsuda, Ishihara, Watanabe, and Iwasaki*, 323

Asai, R., Nishino, T., Matsumura, T., Okamoto, K., Igarashi, K., Pai, E.F., and Nishino, T. Two Mutations Convert Mammalian Xanthine Oxidoreductase to Highly Superoxide-productive Xanthine Oxidase, 691

Asamitsu, K., Yamaguchi, T., Nakata, K., Hibi, Y., Victoriano, A.-F.B., Imai, K., Onozaki, K., Kitade, Y., and Okamoto, T. Inhibition of Human Immunodeficiency Virus Type 1 Replication by

Blocking IkB Kinase with Noraristeromycin, 581

### B

Baanante, I.V. See *Mediavilla, and Metón*, 235

Baghel, A.S. See *Gupta, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Saluja, Patkar, Parmar, and Raj*, 709

Baier, C. See *Rigden, Ramirez-Arcos, Liao, Wang, and Dillon*, 63

Bakhti, M. See *Khazaei, Habibi-Rezaei, Karimzadeh, Moosavi-Movahedi, Sarrafnejhad, and Sabouni*, 197

Bansal, S. See *Gupta, Baghel, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Saluja, Patkar, Parmar, and Raj*, 709

Barr, M.L. See *Wu, Wang, Zhu, He, and Klein*, 571

Bhakuni, V. See *Bhatt*, 295

Bhatt, A.N., and Bhakuni, V. Characterization of Pyridoxal 5'-Phosphate-Binding Domain and Folding Intermediate of *Bacillus subtilis* Serine Hydroxymethyltransferase: an Autonomous Folding Domain, 295

Biswas, A., Lewis, S., Wang, B., Miyagi, M., Santoshkumar, P., Gangadhariah, M.H., and Nagaraj, R.H. Chemical Modulation of the Chaperone Function of Human  $\alpha$ -Crystallin, 21

Bose, M. See *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Saluja, Patkar, Parmar, and Raj*, 709

### C

Cao, J. See *Tan, Yang, Feng, Liu, Mu, and Wang*, 207

Capobianco, L. See *Carrisi, Madeo, Morciano, Dolce, Cenci, Cappello, Mazzeo, and Iacopetta*, 389

Cappello, A.R. See *Carrisi, Madeo, Morciano, Dolce, Cenci, Mazzeo, Iacopetta, and Capobianco*, 389

Carrisi, C., Madeo, M., Morciano, P., Dolce, V., Cenci, G., Cappello, A.R., Mazzeo, G., Iacopetta, D., and Capobianco, L. Identification of the *Drosophila melanogaster* Mitochondrial Citrate Carrier: Bacterial Expression, Reconstitution, Functional Characterization and Developmental Distribution, 389

Cenci, G. See *Carrisi, Madeo, Morciano, Dolce, Cappello, Mazzeo, Iacopetta, and Capobianco*, 389

Cha, H.J. See *Lee, Jang, Moon, Hong, Choi, and Lee*, 215

—. See *Lee, Yoon, Jang, Kim, Hong, Choi, and Lee*, 159

Chen, H. See *Wei, Liu, Ge, Zhou, Xu, Gu, and Jiang*, 539

Choi, J.-D. See *Yoon, Park, Kim, Shin, and Chong*, 507

Choi, K.Y. See *Lee, Jang, Cha, Moon, Hong, and Lee*, 215

—. See *Lee, Yoon, Jang, Kim, Cha, Hong, and Lee*, 159

Chong, C.-K. See *Yoon, Park, Kim, Shin, and Choi*, 507

Cooksey, R.C. See *Ruddock, Stein, Landaker, Park, McClain, and Patti*, 599

### D

Daiyasu, H., Saino, H., Tomoto, H., Mizutani, M., Sakata, K., and Toh, H. Computational and Experimental Analyses of Furcatin Hydrolase for Substrate Specificity Studies of Disaccharide-specific Glycosidases, 467

Davis, J. See *Sharp, and Forsythe*, 87

Denman, R.B. Protein Methyltransferase Activities in Commercial *In vitro* Translation Systems, 223

Dillon, J.-A.R. See *Rigden, Baier, Ramirez-Arcos, Liao, and Wang*, 63

Dixit, A. See *Agarwal, Kumar, and Gupta*, 741

Dolce, V. See *Carrisi, Madeo, Morciano, Cenci, Cappello, Mazzeo, Iacopetta, and Capobianco*, 389

### E

Endo, Y. See *Gantulga, Tuвшинтугс, Такино, Сато, Мураками, and Yoshioka*, 693

### F

Feng, Y. See *Tan, Yang, Liu, Cao, Mu, and Wang*, 207

Forsythe, S. See *Sharp, and Davis*, 87

Fujimoto, T. See *Ohtsuki, Kamimukai, Kumano, Kitamatsu, and Sisido*, 415

Fujita, M. See *Kinoshita, and Maeda*, 287

Fujiwara, F. See *Kimura, Horibe, Sakamoto, Shitara, Komiya, Yamamoto, Hayano, Takahashi, and Kikuchi*, 187

Fukuda, H. See *Kurata, Shishido, Murakami, Tanaka, Ogino, and Kondo*, 701

Fukunaga, K. See *Sasaya, Utsumi, Shimoke, Nakayama, Matsumura, and Ikeuchi*, 251

Fukunaga, Y., Nishimoto, E., Otosu, T., Murakami, Y., and Yamashita, S. The Unfolding of  $\alpha$ -Momorcharin Proceeds Through the Compact Folded Intermediate, 457

Fukushima, H., Mizutani, M., Imamura, K., Morino, K., Kobayashi, J., Okumura, K., Tsumoto, K., and Yoshimura, T. Development of a Novel Preparation

- Method of Recombinant Proteoliposomes Using Baculovirus Gene Expression Systems, 763
- Furukawa, H. See Nakayama-Hamada, Suzuki, Yamada, and Yamamoto, 393
- Futami, J. See Murata, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, and Yamada, 447
- G
- Gangadhariah, M.H. See Biswas, Lewis, Wang, Miyagi, Santoshkumar, and Nagaraj, 21
- Gantulga, D., Tuвшинтугс, Б., Эндо, Я., Такино, Т., Сато, Х., Мураками, С., и Yoshioka, K. The Scaffold Protein c-Jun NH<sub>2</sub>-Terminal Kinase-associated Leucine Zipper Protein Regulates Cell Migration through Interaction with the G Protein G<sub>α13</sub>, 693
- Ge, Y. See Wei, Liu, Zhou, Xu, Chen, Gu, and Jiang, 539
- Gohara, R., Nishikawa, S., Takasaki, Y., and Ando, S. Role of the Aromatic Residues in the Near-amino Terminal Motif of Vimentin in Intermediate Filament Assembly *In Vitro*, 675
- Gohda, K. See Tada, Tsutsumi, Ishihara, Suzuki, and Teno, 499
- Gonçalves, P. See Araújo, and Martel, 177
- Goto, T., Ohkuri, T., Shioi, S., Abe, Y., Imoto, T., and Ueda, T. Crystal Structures of K33 Mutant Hen Lysozymes with Enhanced Activities, 619
- Goto, Y. See Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Tamiya-Koizumi, Ito, Murate, Kannagi, and Hara, 95
- Grabowska, J. See Miltýk, Surázynski, and Pałka, 409
- Green, J.A. See Telugu, 725
- Gu, J. See Wei, Liu, Ge, Zhou, Xu, Chen, and Jiang, 539
- Guo, Y. See Hou, Li, Wang, Qian, Zhang, Hong, and Wang, 115
- Gupta, G., Baghel, A.S., Bansal, S., Tyagi, T.K., Kumari, R., Saini, N.K., Ponnan, P., Kumar, A., Bose, M., Saluja, D., Patkar, S.A., Parmar, V.S., and Raj, H.G. Establishment of Glutamine Synthetase of *Mycobacterium smegmatis* as a Protein Acetyltransferase utilizing Polyphenolic Acetates as the Acetyl Group Donors, 709
- Gupta, P. See Agarwal, Kumar, and Dixit, 741
- H
- Höti, N. See Sami, Xu, Shen, and Huang, 357
- Habibi-Rezaei, M. See Khazaei, Karimzadeh, Moosavi-Movahedi, Sarrafnejhad, Sabouni, and Bakhti, 197
- Hachimori, A. See Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, and Uchiumi, 665
- Halim, A.A.A., Kadir, H.A., and Tayyab, S. Bromophenol Blue Binding as a Probe to Study Urea and Guanidine Hydrochloride Denaturation of Bovine Serum Albumin, 33
- Han, B. See Zhang, Lin, Wu, and Yan, 781
- Han, M. See Wang, Zhao, and Wen, 313
- , Yan, W., Huang, Y., Yao, H., Wang, Z., Xi, D., Li, W., Zhou, Y., Hou, J., Luo, X., and Ning, Q. The Nucleocapsid Protein of SARS-CoV Induces Transcription of hfgl2 Prothrombinase Gene Dependent on C/EBP Alpha, 51
- Hara, A. See Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Ito, Murate, and Kannagi, 95
- Harada, H. See Xu, and Taniguchi, 531
- Harashima, H. See Kamiya, Uchiyama, Nakatsu, and Tsuzuki, 431
- Hashimoto, S., Okada, K., and Imaoka, S. Interaction between Bisphenol Derivatives and Protein Disulphide Isomerase (PDI) and Inhibition of PDI Functions: Requirement of Chemical Structure for Binding to PDI, 335
- Hashimoto, T. See Horikawa, Nomura, and Sakamoto, 149
- Hata, K. See Miyagi, Wada, Yamaguchi, and Shiozaki, 279
- Hayano, T. See Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Takahashi, and Kikuchi, 187
- Hayashi, T. See Kihara, Imamura, Takemura, Mizuno, and Adachi, 625
- He, Y. See Wu, Wang, Zhu, Barr, and Klein, 571
- Henmi, K. See Iwaoka, Kumakura, Yoneda, Nakahara, Aonuma, Nakatani, and Tomoda, 121
- Hibi, Y. See Asamitsu, Yamaguchi, Nakata, Victoriano, Imai, Onozaki, Kitade, and Okamoto, 581
- Hieda, N. See Toraya, Tamura, Watanabe, Yamanishi, and Mori, 437
- Higashi, N., Tanimoto, K., Nishioka, M., Ishikawa, K., and Taya, M. Investigating a Catalytic Mechanism of Hyperthermophilic L-Threonine Dehydrogenase from *Pyrococcus horikoshii*, 77
- Hirabayashi, J. Concept, Strategy and Realization of Lectin-based Glycan Profiling, 139
- Hirakawa, H., Ochi, A., Kawahara, Y., Kawamura, S., Torikata, T., and Kuhara, S. Catalytic Reaction Mechanism of Goose Egg-white Lysozyme by Molecular Modelling of Enzyme-Substrate Complex, 753
- Hirano, A., Arakawa, T., and Shiraki, K. Arginine Increases the Solubility of Coumarin: Comparison with Salting-in and Salting-out Additives, 363
- Hirasaka, K. See Nishimura, Mikura, Okumura, Nikawa, Kawano, Nakayama, and Ikeda, 717
- Homma, M. See Terashima, Abe-Yoshizumi, and Kojima, 635
- Hong, B.H. See Lee, Yoon, Jang, Kim, Cha, Choi, and Lee, 159
- . See Lee, Jang, Cha, Moon, Choi, and Lee, 215
- Hong, X. See Hou, Li, Wang, Qian, Zhang, Wang, and Guo, 115
- Horibe, T. See Kimura, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, Takahashi, and Kikuchi, 187
- Horikawa, M., Nomura, T., Hashimoto, T., and Sakamoto, K. Elongation and Desaturation of Fatty Acids are Critical in Growth, Lipid Metabolism and Ontogeny of *Caenorhabditis elegans*, 149
- Hou, J. See Han, Yan, Huang, Yao, Wang, Xi, Li, Zhou, Luo, and Ning, 51
- Hou, S., Li, B., Wang, L., Qian, W., Zhang, D., Hong, X., Wang, H., and Guo, Y. Humanization of an Anti-CD34 Monoclonal Antibody by Complementarity-determining Region Grafting Based on Computer-assisted Molecular Modelling, 115
- Huang, H.-L. See Yin, Ren, Zhu, Wang, Zhang, and Yan, 591
- Huang, X. See Sami, Höti, Xu, and Shen, 357
- Huang, Y. See Han, Yan, Yao, Wang, Xi, Li, Zhou, Hou, Luo, and Ning, 51
- Huh, N.-h. See Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, and Yamada, 447
- Hunt, M.C. See Reilly, Tillander, Ofman, and Alexson, 655
- I
- Iacopetta, D. See Carrisi, Madeo, Morciano, Dolce, Cenci, Cappello, Mazzeo, and Capobianco, 389
- Ichikawa, N. See Ando, 547
- Ichimura, T. See Moro, Yoshitake, and Ogawa, 733
- Igarashi, K. See Asai, Nishino, Matsumura, Okamoto, Pai, and Nishino, 691
- Ikeda, M. See Nishimura, Mikura, Hirasaka, Okumura, Nikawa, Kawano, and Nakayama, 717
- Ikeuchi, T. See Sasaya, Utsumi, Shimoke, Nakayama, Matsumura, and Fukunaga, 251
- Imai, K. See Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Onozaki, Kitade, and Okamoto, 581
- Imamura, K. See Fukushima, Mizutani, Morino, Kobayashi, Okumura, Tsumoto, and Yoshimura, 763
- Imamura, Y. See Kihara, Takemura, Mizuno, Adachi, and Hayashi, 625

- Imaoka, S. See *Hashimoto, and Okada*, 335  
 Imoto, T. See *Goto, Ohkuri, Shioi, Abe, and Ueda*, 619  
 Ishida, N. See *Ohsaki, Oishi, Kozono, Nakayama, and Nakayama*, 609  
 Ishihara, H. See *Tada, Tsutsumi, Suzuki, Gohda, and Teno*, 499  
 Ishihara, Y. See *Wada, Mitsuda, Watanabe, Iwasaki, and Asahi*, 323  
 Ishikawa, K. See *Higashi, Tanimoto, Nishioka, and Taya*, 77  
 Itano, N. Simple Primary Structure, Complex Turnover Regulation and Multiple Roles of Hyaluronan, 131  
 Ito, H. See *Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Murate, Kannagi, and Hara*, 95  
 Ito, S. See *Suzuki, Shimizu-Ibuka, and Sakai*, 305  
 Iwaoka, M., Kumakura, F., Yoneda, M., Nakahara, T., Henmi, K., Aonuma, H., Nakatani, H., and Tomoda, S. Direct Observation of Conformational Folding Coupled with Disulphide Rearrangement by Using a Water-soluble Selenoxide Reagent—A Case of Oxidative Regeneration of Ribonuclease A under Weakly Basic Conditions, 121  
 Iwasaki, M. See *Wada, Mitsuda, Ishihara, Watanabe, and Asahi*, 323
- J**
- Jang, D.S. See *Lee, Cha, Moon, Hong, Choi, and Lee*, 215  
 —. See *Lee, Yoon, Kim, Cha, Hong, Choi, and Lee*, 159  
 Jiang, J. See *Wei, Liu, Ge, Zhou, Xu, Chen, and Gu*, 539
- K**
- Kadir, H.A. See *Halim, and Tayyab*, 33  
 Kakehi, Y. See *Wang, Zhao, Uyama, Tsuboi, Wu, and Ueda*, 685  
 Kamimukai, M. See *Ohtsuki, Fujimoto, Kumano, Kitamatsu, and Sisido*, 415  
 Kaminishi, T. See *Nomura, Nakatsuchi, Sugita, Nomura, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, and Uchiumi*, 665  
 Kamiya, H., Uchiyama, M., Nakatsu, Y., Tsuzuki, T., and Harashima, H. Effects of Target Sequence and Sense versus Anti-sense Strands on Gene Correction with Single-stranded DNA Fragments, 431  
 Kandeel, M., and Kitade, Y. Molecular Characterization, Heterologous Expression and Kinetic Analysis of Recombinant *Plasmodium falciparum* Thymidylate Kinase, 245  
 Kannagi, R. See *Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Ito, Murate, and Hara*, 95  
 Karimzadeh, F. See *Khazaei, Habibi-Rezaei, Moosavi-Movahedi, Sarrafnejhad, Sabouni, and Bakhti*, 197  
 Katafuchi, T. See *Osaki, and Minamino*, 419  
 Kaufman, R.J. See *Yamamoto, Suzuki, Wada, Okada, Yoshida, and Mori*, 477  
 Kawahara, Y. See *Hirakawa, Ochi, Kawamura, Torikata, and Kuhara*, 753  
 Kawamura, S. See *Hirakawa, Ochi, Kawahara, Torikata, and Kuhara*, 753  
 Kawano, Y. See *Nishimura, Mikura, Hirasaka, Okumura, Nikawa, Nakayama, and Ikeda*, 717  
 Khazaei, M.R., Habibi-Rezaei, M., Karimzadeh, F., Moosavi-Movahedi, A.A., Sarrafnejhad, A.A., Sabouni, F., and Bakhti, M. Microglial Cell Death Induced by Glycated Bovine Serum Albumin: Nitric Oxide Involvement, 197  
 Kihara, T., Imamura, Y., Takemura, Y., Mizuno, K., Adachi, E., and Hayashi, T. Intercellular Accumulation of Type V Collagen Fibrils in Accordance with Cell Aggregation, 625  
 Kikuchi, M. See *Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, and Takahashi*, 187  
 Kikuchi, Y., Saika, H., Yuasa, K., Nagahama, M., and Tsuji, A. Isolation and Biochemical Characterization of Two Forms of RD21 from Cotyledons of Daikon Radish (*Raphanus sativus*), 789  
 Kim, C. See *Lee, Yoon, Jang, Cha, Hong, Choi, and Lee*, 159  
 Kim, S. See *Lim, Lee, Lee, and Oh*, 523  
 Kim, Y.M. See *Lee, and Ro*, 107  
 Kim, Y.-C. See *Yoon, Park, Shin, Chong, and Choi*, 507  
 Kimura, S. See *Li, Takasaki, Satoh, Yasumoto, and Sogawa*, 555  
 Kimura, T., Horibe, T., Sakamoto, C., Shitara, Y., Fujiwara, F., Komiya, T., Yamamoto, A., Hayano, T., Takahashi, N., and Kikuchi, M. Evidence for Mitochondrial Localization of P5, a Member of the Protein Disulphide Isomerase Family, 187  
 Kinoshita, K. See *Shimizu, Yamagishi, Shida, and Oshima*, 383  
 Kinoshita, T., Fujita, M., and Maeda, Y. Biosynthesis, Remodelling and Functions of Mammalian GPI-anchored Proteins: Recent Progress, 287  
 Kitade, Y. See *Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Imai, Onozaki, and Okamoto*, 581  
 —. See *Kandeel*, 245  
 Kitagawa, H. See *Nadanaka*, 7  
 Kitamatsu, M. See *Ohtsuki, Fujimoto, Kamimukai, Kumano, and Sisido*, 415  
 Kitazoe, M. See *Murata, Futami, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, and Yamada*, 447  
 Klein, A.S. See *Wu, Wang, Zhu, He, and Barr*, 571  
 Klumpp, S. See *Rose, Pallast, and Kriegstein*, 343  
 Knipscheer, P. See *Schwamborn, van Dijk, van Dijk, Sixma, Meloen, and Langedijk*, 39  
 Kobayashi, J. See *Fukushima, Mizutani, Imamura, Morino, Okumura, Tsumoto, and Yoshimura*, 763  
 Kojima, N. See *Abe, Kuroda, Kuboki, Matsushita, and Yokoyama*, 563  
 Kojima, Seiji. See *Terashima, Abe-Yoshizumi, and Homma*, 635  
 Kojima, Shuichi. See *Aoki, Yamada, Arii, and Mizoguchi*, 15  
 Komiya, T. See *Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Yamamoto, Hayano, Takahashi, and Kikuchi*, 187  
 Kondo, A. See *Kurata, Shishido, Muraoka, Tanaka, Ogino, and Fukuda*, 701  
 Kosaka, M. See *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Tada, Sakaguchi, Yagi, Seno, Huh, and Yamada*, 447  
 Kozono, Y. See *Ohsaki, Oishi, Nakayama, Nakayama, and Ishida*, 609  
 Kriegstein, J. See *Rose, Pallast, and Klumpp*, 343  
 Kubo, Y., Ohba, T., and Takahashi, N. Proteins in Human Myeloid Leukemia Cell Line HL60 Reacting with Retinoic Acid Monoclonal Antibodies, 349  
 Kuboki, N. See *Abe, Kuroda, Matsushita, Yokoyama, and Kojima*, 563  
 Kuhara, S. See *Hirakawa, Ochi, Kawahara, Kawamura, and Torikata*, 753  
 Kumakura, F. See *Iwaoka, Yoneda, Nakahara, Henmi, Aonuma, Nakatani, and Tomoda*, 121  
 Kumano, C. See *Ohtsuki, Fujimoto, Kamimukai, Kitamatsu, and Sisido*, 415  
 Kumar, A. See *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Bose, Saluja, Patkar, Parmar, and Guru Raj*, 709  
 Kumar, R. See *Agarwal, Gupta, and Dixit*, 741  
 Kumari, R. See *Gupta, Baghel, Bansal, Tyagi, Saini, Ponnan, Kumar, Bose, Saluja, Patkar, Parmar, and Guru Raj*, 709  
 Kuramitsu, S. See *Morita, Nakagawa, and Masui*, 267  
 Kurata, N., Shishido, T., Muraoka, M., Tanaka, T., Ogino, C., Fukuda, H., and Kondo, A. Specific Protein Delivery to Target Cells by Antibody-displaying Bionanocapsules, 701  
 Kuroda, Y. See *Abe, Kuboki, Matsushita, Yokoyama, and Kojima*, 563

- Kyogashima, M., Tadano-Aritomi, K., Aoyama, T., Yusa, A., Goto, Y., Tamiya-Koizumi, K., Ito, H., Murate, T., Kannagi, R., and Hara, A. Chemical and Apoptotic Properties of Hydroxy-Ceramides Containing Long-Chain Bases with Unusual Alkyl Chain Lengths, 95
- L
- Landaker, E. See Ruddock, Stein, Park, Cooksey, McClain, and Patti, 599
- Langedijk, J.P.M. See Schwamborn, Knipscheer, van Dijk, van Dijk, Sixma, and Meloen, 39
- Lee, E. See Lim, Lee, Oh, and Kim, 523
- Lee, H.C. See Lee, Jang, Cha, Moon, Hong, and Choi, 215
- . See Lee, Yoon, Jang, Kim, Cha, Hong, and Choi, 159
- Lee, H.J., Jang, D.S., Cha, H.J., Moon, H.S., Hong, B.H., Choi, K.Y., and Lee, H.C. NMR Studies on the Equilibrium Unfolding of Ketosteroid Isomerase by Urea, 215
- . Yoon, Y.J., Jang, D.S., Kim, C., Cha, H.J., Hong, B.H., Choi, K.Y., and Lee, H.C.  $^{15}\text{N}$  NMR Relaxation Studies of Y14F Mutant of Ketosteroid Isomerase: The Influence of Mutation on Backbone Mobility, 159
- Lee, H.-I., Kim, Y.M., and Ro, Y.T. Purification and Characterization of a Copper-Containing Amine Oxidase from *Mycobacterium* Sp. Strain JC1 DSM 3803 Grown on Benzylamine, 107
- Lee, J. See Lim, Lee, Oh, and Kim, 523
- Lewis, S. See Biswas, Wang, Miyagi, Santoshkumar, Gangadhariah, and Nagaraj, 21
- Li, Bin, Takeda, K., Yokoyama, S., and Shibahara, S. A Prolyl-hydroxylase Inhibitor, Ethyl-3,4-dihydroxybenzoate, Induces Haem Oxygenase-1 Expression in Human Cells Through a Mechanism Independent of Hypoxia-inducible Factor-1 $\alpha$ , 643
- Li, B. See Hou, Wang, Qian, Zhang, Hong, Wang, and Guo, 115
- Li, W. See Han, Yan, Huang, Yao, Wang, Xi, Zhou, Hou, Luo, and Ning, 51
- Li, X.Y., Takasaki, C., Satoh, Y., Kimura, S., Yasumoto, K.-i., and Sogawa, K. Expression, Purification and Characterization of Human PHD1 in *Escherichia coli*, 555
- Li, Y. See Oda, Tokita, Ota, Taniguchi, Nishino, Takagi, Yamamoto, and Nishiura, 371
- Liao, M. See Rigden, Baier, Ramirez-Arcos, Wang, and Dillon, 63
- Lim, Y., Lee, E., Lee, J., Oh, S., and Kim, S. Down-regulation of Asymmetric Arginine Methylation During Replicative and  $\text{H}_2\text{O}_2$ -induced Premature Senescence in WI-38 Human Diploid Fibroblasts, 523
- Lin, X. See Zhang, Han, Wu, and Yan, 781
- Liu, C. See Tan, Yang, Feng, Cao, Mu, and Wang, 207
- Liu, D. See Wei, Ge, Zhou, Xu, Chen, Gu, and Jiang, 539
- Luo, X. See Han, Yan, Huang, Yao, Wang, Xi, Li, Zhou, Hou, and Ning, 51
- M
- Madeo, M. See Carrisi, Morciano, Dolce, Cenci, Cappello, Mazzeo, Iacopetta, and Capobianco, 389
- Maeda, Y. See Kinoshita, and Fujita, 287
- Maeshima, M. See Nagasaki-Takeuchi, and Miyano, 487
- Martel, F. See Araújo, and Gonçalves, 177
- Masui, R. See Morita, Nakagawa, and Kuramitsu, 267
- Matsuda, T. See Okajima, and Matsuura, 1
- Matsumura, T. See Asai, Nishino, Okamoto, Igarashi, Pai, and Nishino, 691
- Matsumura, Y. See Sasaya, Utsumi, Shimoke, Nakayama, Fukunaga, and Ikeuchi, 251
- Matsushita, M. See Abe, Kuroda, Kuboki, Yokoyama, and Kojima, 563
- Matsuura, A. See Okajima, and Matsuda, 1
- Mazzeo, G. See Carrisi, Madeo, Morciano, Dolce, Cenci, Cappello, Iacopetta, and Capobianco, 389
- McClain, D. See Ruddock, Stein, Landaker, Park, Cooksey, and Patti, 599
- Mediavilla, D., Metón, I., and Baanante, I.V. Purification and Kinetic Characterization of 6-Phosphofructo-1-kinase from the Liver of Gilthead Sea Bream (*Sparus Aurata*), 235
- Meloen, R.H. See Schwamborn, Knipscheer, van Dijk, van Dijk, Sixma, and Langedijk, 39
- Metón, I. See Mediavilla, and Baanante, 235
- Mikura, M. See Nishimura, Hirasaka, Okumura, Nikawa, Kawano, Nakayama, and Ikeda, 717
- Miltýk, W., Surażyński, A., Grabowska, J., and Palka, J.A. Prolidase Dependent Inhibition of Collagen Biosynthesis in Chinese Hamster Ovary Cells, 409
- Minamino, N. See Osaki, and Katafuchi, 419
- Mita, T. See Yoshida, and Onda, 167
- Mitsuda, M. See Wada, Ishihara, Watanabe, Iwasaki, and Asahi, 323
- Miyagi, M. See Biswas, Lewis, Wang, Santoshkumar, Gangadhariah, and Nagaraj, 21
- Miyagi, T., Wada, T., Yamaguchi, K., Hata, K., and Shiozaki, K. Plasma Membrane-associated Sialidase as a Crucial Regulator of Transmembrane Signalling, 279
- Miyano, M. See Nagasaki-Takeuchi, and Maeshima, 487
- Miyoshi, T. See Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Yokoyama, Hachimori, and Uchiumi, 665
- Mizoguchi, T. See Aoki, Yamada, Arii, and Kojima, 15
- Mizuno, K. See Kihara, Imamura, Takemura, Adachi, and Hayashi, 625
- Mizutani, Masaharu See Daiyasu, Saino, Tomoto, Sakata, and Toh, 467
- Mizutani, Masashi See Fukushima, Imamura, Morino, Kobayashi, Okumura, Tsumoto, and Yoshimura, 763
- Moon, H.S. See Lee, Jang, Cha, Hong, Choi, and Lee, 215
- Moosavi-Movahedi, A.A. See Khazaei, Habibi-Rezaei, Karimzadeh, Sarrafnejhad, Sabouni, and Bakhti, 197
- Morciano, P. See Carrisi, Madeo, Dolce, Cenci, Cappello, Mazzeo, Iacopetta, and Capobianco, 389
- Mori, Kazutoshi See Yamamoto, Suzuki, Wada, Okada, Yoshida, and Kaufman, 477
- Mori, Koichi See Toraya, Tamura, Watanabe, Yamanishi, and Hieda, 437
- Morino, K. See Fukushima, Mizutani, Imamura, Kobayashi, Okumura, Tsumoto, and Yoshimura, 763
- Morita, R., Nakagawa, N., Kuramitsu, S., and Masui, R. An  $O^6$ -methylguanine-DNA Methyltransferase-like Protein from *Thermus thermophilus* Interacts with a Nucleotide Excision Repair Protein, 267
- Moro, A., Yoshitake, T., Ogawa, T., and Ichimura, T. Single-step Purification of Pepsin-derived Monoclonal Antibody Fragments from Crude Murine Ascitic Fluids by Ceramic Hydroxyapatite High-performance Liquid Chromatography, 733
- Mu, G. See Tan, Yang, Feng, Liu, Cao, and Wang, 207
- Murakami, S. See Gantulga, Tuвшинтугас, Endo, Takino, Sato, and Yoshioka, 693
- Murakami, Y. See Fukunaga, Nishimoto, Otosu, and Yamashita, 457
- Muraoka, M. See Kurata, Shishido, Tanaka, Ogino, Fukuda, and Kondo, 701
- Murata, H., Futami, J., Kitazoe, M., Yonehara, T., Nakanishi, H., Kosaka, M., Tada, H., Sakaguchi, M., Yagi, Y., Seno, M., Huh, N.-h., and Yamada, H. Intracellular Delivery of Glutathione S-transferase-fused Proteins into Mammalian Cells by Polyethylenimine-Glutathione Conjugates, 447
- Murate, T. See Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Ito, Kannagi, and Hara, 95
- N
- Nadanaka, S., and Kitagawa, H. Heparan Sulphate Biosynthesis and Disease, 7

- Nagahama, M. See *Kikuchi, Saika, Yuasa, and Tsuji*, 789
- Nagao, T. See *Tanabe, Sato, Suzuki, Suzuki, and Yamaguchi*, 399
- Nagaraj, R.H. See *Biswas, Lewis, Wang, Miyagi, Santoshkumar, and Gangadhariah*, 21
- Nagasaki-Takeuchi, N., Miyano, M., and Maeshima, M. A Plasma Membrane-associated Protein of *Arabidopsis thaliana* AtPCaP1 Binds Copper Ions and Changes Its Higher Order Structure, 487
- Nagata, T. See *Tsuji, and Yanagawa*, 513
- Nakagawa, N. See *Morita, Kuramitsu, and Masui*, 267
- Nakahara, T. See *Iwaoka, Kumakura, Yoneda, Henmi, Aonuma, Nakatani, and Tomoda*, 121
- Nakanishi, H. See *Murata, Futami, Kitazoe, Yonehara, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, and Yamada*, 447
- Nakata, K. See *Asamitsu, Yamaguchi, Hibi, Victoriano, Imai, Onozaki, Kitade, and Okamoto*, 581
- Nakatani, H. See *Iwaoka, Kumakura, Yoneda, Nakahara, Henmi, Aonuma, and Tomoda*, 121
- Nakatsu, Y. See *Kamiya, Uchiyama, Tsuzuki, and Harashima*, 431
- Nakatsuchi, M. See *Nomura, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, and Uchiumi*, 665
- Nakayama-Hamada, M., Suzuki, A., Furukawa, H., Yamada, R., and Yamamoto, K. Citrullinated Fibrinogen Inhibits Thrombin-catalysed Fibrin Polymerization, 393
- Nakayama, H. See *Sasaya, Utsumi, Shimoke, Matsumura, Fukunaga, and Ikeuchi*, 251
- Nakayama, K. See *Ohsaki, Oishi, Kozono, Nakayama, and Ishida*, 609
- Nakayama, K.I. See *Ohsaki, Oishi, Kozono, Nakayama, and Ishida*, 609
- Nakayama, M. See *Nishimura, Mikura, Hirasaka, Okumura, Nikawa, Kawano, and Ikeda*, 717
- Nikawa, T. See *Nishimura, Mikura, Hirasaka, Okumura, Kawano, Nakayama, and Ikeda*, 717
- Ning, Q. See *Han, Yan, Huang, Yao, Wang, Xi, Li, Zhou, Hou, and Luo*, 51
- Nishikawa, S. See *Gohara, Takasaki, and Ando*, 675
- Nishimoto, E. See *Fukunaga, Otosu, Murakami, and Yamashita*, 457
- Nishimura, M., Mikura, M., Hirasaka, K., Okumura, Y., Nikawa, T., Kawano, Y., Nakayama, M., and Ikeda, M. Effects of Dimethyl Sulphoxide and Dexamethasone on mRNA Expression of Myogenesis- and Muscle Proteolytic System-related Genes in Mouse Myoblastic C2C12 Cells, 717
- Nishino, N. See *Oda, Tokita, Ota, Li, Taniguchi, Takagi, Yamamoto, and Nishiura*, 371
- Nishino, Takeshi See *Asai, Nishino, Matsumura, Okamoto, Igarashi, and Pai*, 691
- Nishino, Tomoko See *Asai, Matsumura, Okamoto, Igarashi, Pai, and Nishino*, 691
- Nishioka, M. See *Higashi, Tanimoto, Ishikawa, and Taya*, 77
- Nishiura, H. See *Oda, Tokita, Ota, Li, Taniguchi, Nishino, Takagi, and Yamamoto*, 371
- Noda, M. See *Shintani*, 259
- Nomura, M. See *Nomura, Nakatsuchi, Sugita, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, and Uchiumi*, 665
- Nomura, Takaomi, Nakatsuchi, M., Sugita, D., Nomura, M., Kaminishi, T., Takemoto, C., Shirouzu, M., Miyoshi, T., Yokoyama, S., Hachimori, A., and Uchiumi, T. Biochemical Evidence for the Heptameric Complex L10(L12)<sub>6</sub> in the *Thermus thermophilus* Ribosome: *In Vitro* Analysis of its Molecular Assembly and Functional Properties, 665
- Nomura, Toshihisa See *Horikawa, Hashimoto, and Sakamoto*, 149
- O
- Ochi, A. See *Hirakawa, Kawahara, Kawamura, Torikata, and Kuhara*, 753
- Oda, Y., Tokita, K., Ota, Y., Li, Y., Taniguchi, K., Nishino, N., Takagi, K., Yamamoto, T., and Nishiura, H. Agonistic and Antagonistic Effects of C5a-Chimera Bearing S19 Ribosomal Protein Tail Portion on the C5a Receptor of Monocytes and Neutrophils, Respectively, 371
- Ofman, R. See *Reilly, Tillander, Alexson, and Hunt*, 655
- Ogawa, T. See *Moro, Yoshitake, and Ichimura*, 733
- Ogino, C. See *Kurata, Shishido, Muraoka, Tanaka, Fukuda, and Kondo*, 701
- Oh, S. See *Lim, Lee, Lee, and Kim*, 523
- Ohba, T. See *Kubo, and Takahashi*, 349
- Ohkuri, T. See *Goto, Shioi, Abe, Imoto, and Ueda*, 619
- Ohsaki, K., Oishi, K., Kozono, Y., Nakayama, K., Nakayama, K.I., and Ishida, N. The Role of  $\beta$ -TrCP1 and  $\beta$ -TrCP2 in Circadian Rhythm Generation by Mediating Degradation of Clock Protein PER2, 609
- Ohtsuki, T., Fujimoto, T., Kamimukai, M., Kumano, C., Kitamatsu, M., and Sisido, M. Isolation of Small RNAs using Biotinylated PNAs, 415
- Oishi, K. See *Ohsaki, Kozono, Nakayama, Nakayama, and Ishida*, 609
- Okada, K. See *Hashimoto, and Imaoka*, 335
- Okada, T. See *Yamamoto, Suzuki, Wada, Yoshida, Kaufman, and Mori*, 477
- Okajima, T., Matsuura, A., and Matsuda, T. Biological Functions of Glycosyltransferase Genes Involved in O-fucose Glycan Synthesis, 1
- Okamoto, K. See *Asai, Nishino, Matsumura, Igarashi, Pai, and Nishino*, 691
- Okamoto, T. See *Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Imai, Onozaki, and Kitade*, 581
- Okumura, K. See *Fukushima, Mizutani, Imamura, Morino, Kobayashi, Tsumoto, and Yoshimura*, 763
- Okumura, Y. See *Nishimura, Mikura, Hirasaka, Nikawa, Kawano, Nakayama, and Ikeda*, 717
- Onda, M. See *Yoshida, and Mita*, 167
- Onozaki, K. See *Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Imai, Kitade, and Okamoto*, 581
- Osaki, T., Katafuchi, T., and Minamino, N. Genomic and Expression Analysis of Canine Calcitonin Receptor-stimulating Peptides and Calcitonin/Calcitonin Gene-related Peptide, 419
- Oshima, T. See *Shimizu, Yamagishi, Kinoshita, and Shida*, 383
- Ota, Y. See *Oda, Tokita, Li, Taniguchi, Nishino, Takagi, Yamamoto, and Nishiura*, 371
- Otosu, T. See *Fukunaga, Nishimoto, Murakami, and Yamashita*, 457
- P
- Palka, J.A. See *Mil'tyk, Surażyński, and Grabowska*, 409
- Pai, E.F. See *Asai, Nishino, Matsumura, Okamoto, Igarashi, and Nishino*, 691
- Pallast, S. See *Rose, Klumpp, and Kriegstein*, 343
- Park, J. See *Ruddock, Stein, Landaker, Cooksey, McClain, and Patti*, 599
- Park, S.-H. See *Yoon, Kim, Shin, Chong, and Choi*, 507
- Parmar, V.S. See *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Saluja, Patkar, and Guru Raj*, 709
- Patkar, S.A. See *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Saluja, Parmar, and Guru Raj*, 709
- Patti, M.-E. See *Ruddock, Stein, Landaker, Park, Cooksey, and McClain*, 599
- Ponnan, P. See *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Kumar, Bose, Saluja, Patkar, Parmar, and Raj*, 709
- Q
- Qian, W. See *Hou, Li, Wang, Zhang, Hong, Wang, and Guo*, 115

## R

Raj, H.G. See *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Saluja, Patkar, and Parmar*, 709

Ramirez-Arcos, S. See *Rigden, Baier, Liao, Wang, and Dillon*, 63

Reilly, S.-J., Tillander, V., Ofman, R., Alexson, S.E.H., and Hunt, M.C. The Nudix Hydrolase 7 is an Acyl-CoA Diphosphatase Involved in Regulating Peroxisomal Coenzyme A Homeostasis, 655

Ren, L.-L. See *Yin, Zhu, Wang, Zhang, Huang, and Yan*, 591

Rigden, M.D., Baier, C., Ramirez-Arcos, S., Liao, M., Wang, M., and Dillon, J.-A.R. Identification of the Coiled-coil Domains of *Enterococcus faecalis* DivIVA that Mediate Oligomerization and their Importance for Biological Function, 63

Ro, Y.T. See *Lee, and Kim*, 107

Rose, K., Pallast, S., Klumpp, S., and Kriegstein, J. ATP-binding on Fibroblast Growth Factor 2 Partially Overlaps with the Heparin-binding Domain, 343

Ruddock, M.W., Stein, A., Landaker, E., Park, J., Cooksey, R.C., McClain, D., and Patti, M.-E. Saturated Fatty Acids Inhibit Hepatic Insulin Action by Modulating Insulin Receptor Expression and Post-receptor Signaling, 599

## S

Sabouni, F. See *Khazaei, Habibi-Rezaei, Karimzadeh, Moosavi-Movahedi, Sarrafnejhad, and Bakhti*, 197

Saika, H. See *Kikuchi, Yuasa, Nagahama, and Tsuji*, 789

Saini, N.K. See *Gupta, Baghel, Bansal, Tyagi, Kumari, Ponnan, Kumar, Bose, Saluja, Patkar, Parmar, and Guru Raj*, 709

Saino, H. See *Daiyasu, Tomoto, Mizutani, Sakata, and Toh*, 467

Sakaguchi, M. See *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Huh, and Yamada*, 447

Sakai, H. See *Suzuki, Ito, and Shimizu-Ibuka*, 305

Sakamoto, C. See *Kimura, Horibe, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, Takahashi, and Kikuchi*, 187

Sakamoto, K. See *Horikawa, Nomura, and Hashimoto*, 149

Sakata, K. See *Daiyasu, Saino, Tomoto, Mizutani, and Toh*, 467

Saluja, D. See *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Patkar, Parmar, and Raj*, 709

Sami, S., Höti, N., Xu, H.-M., Shen, Z., and Huang, X. Valproic Acid Inhibits the Growth of Cervical Cancer both *In Vitro* and *In Vivo*, 357

Santoshkumar, P. See *Biswas, Lewis, Wang, Miyagi, Gangadhariah, and Nagaraj*, 21

Sarrafnejhad, A.A. See *Khazaei, Habibi-Rezaei, Karimzadeh, Moosavi-Movahedi, Sabouni, and Bakhti*, 197

Sasaya, H., Utsumi, T., Shimoke, K., Nakayama, H., Matsumura, Y., Fukunaga, K., and Ikeuchi, T. Nicotine Suppresses Tunicamycin-Induced, But Not Thapsigargin-Induced, Expression of GRP78 during ER Stress-Mediated Apoptosis in PC12 Cells, 251

Sato, H. See *Gantulga, Tuвшнтугс, Endo, Takino, Murakami, and Yoshioka*, 693

Sato, Y. See *Tanabe, Suzuki, Suzuki, Nagao, and Yamaguchi*, 399

Satoh, Y. See *Li, Takasaki, Kimura, Yasumoto, and Sogawa*, 555

Schwamborn, K., Knipscheer, P., van Dijk, E., van Dijk, W.J., Sixma, T.K., Meloen, R.H., and Langedijk, J.P.M. SUMO Assay with Peptide Arrays on Solid Support: Insights into SUMO Target Sites, 39

Seno, M. See *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Huh, and Yamada*, 447

Sharp, D., Forsythe, S., and Davis, J. Carbon Fibre Composites: Integrated Electrochemical Sensors for Wound Management, 87

Shen, Z. See *Sami, Höti, Xu, and Huang*, 357

Shibahara, S. See *Li, Takeda, and Yokoyama*, 643

Shida, Y. See *Shimizu, Yamagishi, Kinoshita, and Oshima*, 383

Shimizu-Ibuka, A. See *Suzuki, Ito, and Sakai*, 305

Shimizu, M., Yamagishi, A., Kinoshita, K., Shida, Y., and Oshima, T. Prebiotic Origin of Glycolytic Metabolism: Histidine and Cysteine can Produce Acetyl CoA from Glucose via Reactions Homologous to Non-phosphorylated Entner-Doudoroff Pathway, 383

Shimoke, K. See *Sasaya, Utsumi, Nakayama, Matsumura, Fukunaga, and Ikeuchi*, 251

Shin, M. See *Yoon, Park, Kim, Chong, and Choi*, 507

Shintani, T., and Noda, M. Protein Tyrosine Phosphatase Receptor Type Z Dephosphorylates TrkB Receptors and Attenuates NGF-dependent Neurite Outgrowth of PC12 Cells, 259

Shioi, S. See *Goto, Ohkuri, Abe, Imoto, and Ueda*, 619

Shiozaki, K. See *Miyagi, Wada, Yamaguchi, and Hata*, 279

Shiraki, K. See *Hirano, and Arakawa*, 363

Shirozu, M. See *Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Miyoshi, Yokoyama, Hachimori, and Uchiumi*, 665

Shishido, T. See *Kurata, Muraoka, Tanaka, Ogino, Fukuda, and Kondo*, 701

Shitara, Y. See *Kimura, Horibe, Sakamoto, Fujiwara, Komiya, Yamamoto, Hayano, Takahashi, and Kikuchi*, 187

Sisido, M. See *Ohtsuki, Fujimoto, Kaminukai, Kumano, and Kitamatsu*, 415

Sixma, T.K. See *Schwamborn, Knipscheer, van Dijk, van Dijk, Meloen, and Langedijk*, 39

Sogawa, K. See *Li, Takasaki, Satoh, Kimura, and Yasumoto*, 555

Someya, Y., Takeda, N., and Wakita, T. Saturation Mutagenesis reveals that GLU54 of Norovirus 3C-like Protease is not Essential for the Proteolytic Activity, 771

Stein, A. See *Ruddock, Landaker, Park, Cooksey, McClain, and Patti*, 599

Sugita, D. See *Nomura, Nakatsuchi, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, and Uchiumi*, 665

Surażyński, A. See *Miltyk, Grabowska, and Palka*, 409

Suzuki, A. See *Nakayama-Hamada, Furukawa, Yamada, and Yamamoto*, 393

Suzuki, Kazuhiro See *Tanabe, Sato, Suzuki, Nagao, and Yamaguchi*, 399

Suzuki, Kenichiro, Ito, S., Shimizu-Ibuka, A., and Sakai, H. Crystal Structure of Pyruvate Kinase from *Geobacillus stearothermophilus*, 305

Suzuki, K. See *Tada, Tsutsumi, Ishihara, Gohda, and Teno*, 499

Suzuki, N. See *Yamamoto, Wada, Okada, Yoshida, Kaufman, and Mori*, 477

Suzuki, T. See *Tanabe, Sato, Suzuki, Nagao, and Yamaguchi*, 399

## T

Tada, H. See *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Sakaguchi, Yagi, Seno, Huh, and Yamada*, 447

Tada, S., Tsutsumi, K., Ishihara, H., Suzuki, K., Gohda, K., and Teno, N. Species Differences Between Human and Rat in the Substrate Specificity of Cathepsin K, 499

Tadano-Aritomi, K. See *Kyogashima, Aoyama, Yusa, Goto, Tamai-Koizumi, Ito, Murate, Kannagi, and Hara*, 95

Takagi, K. See *Oda, Tokita, Ota, Li, Taniguchi, Nishino, Yamamoto, and Nishiura*, 371

Takahashi, Nobuhiro. See *Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, and Kikuchi*, 187

- Takahashi, Noriko. See *Kubo, and Ohba*, 349
- Takasaki, C. See *Li, Satoh, Kimura, Yasumoto, and Sogawa*, 555
- Takasaki, Y. See *Gohara, Nishikawa, and Ando*, 675
- Takeda, K. See *Li, Yokoyama, and Shibahara*, 643
- Takeda, N. See *Someya, and Wakita*, 771
- Takemoto, C. See *Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Shirouzu, Miyoshi, Yokoyama, Hachimori, and Uchiumi*, 665
- Takemura, Y. See *Kihara, Imamura, Mizuno, Adachi, and Hayashi*, 625
- Takino, T. See *Gantulga, Tuvshintugs, Endo, Sato, Murakami, and Yoshioka*, 693
- Tamiya-Koizumi, K. See *Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Ito, Murate, Kannagi, and Hara*, 95
- Tamura, N. See *Toraya, Watanabe, Yamanishi, Hieda, and Mori*, 437
- Tan, H., Yang, S., Feng, Y., Liu, C., Cao, J., Mu, G., and Wang, F. Characterization and Secondary Structure Analysis of Endostatin Covalently Modified by Polyethylene Glycol and Low Molecular Weight Heparin, 207
- Tanabe, S., Sato, Y., Suzuki, T., Suzuki, K., Nagao, T., and Yamaguchi, T. Gene Expression Profiling of Human Mesenchymal Stem Cells for Identification of Novel Markers in Early- and Late-Stage Cell Culture, 399
- Tanaka, T. See *Kurata, Shishido, Muraoka, Ogino, Fukuda, and Kondo*, 701
- Taniguchi, A. See *Xu, and Harada*, 531
- Taniguchi, K. See *Oda, Tokita, Ota, Li, Nishino, Takagi, Yamamoto, and Nishiura*, 371
- Tanimoto, K. See *Higashi, Nishioka, Ishikawa, and Taya*, 77
- Taya, M. See *Higashi, Tanimoto, Nishioka, and Ishikawa*, 77
- Tayyab, S. See *Halim, and Kadir*, 33
- Telugu, B.P.V.L., and Green, J.A. Characterization of the Peptidase Activity of Recombinant Porcine Pregnancy-associated Glycoprotein-2, 725
- Teno, N. See *Tada, Tsutsumi, Ishihara, Suzuki, and Gohda*, 499
- Terashima, H., Abe-Yoshizumi, R., Kojima, S., and Homma, M. Cell-free Synthesis of the Torque-Generating Membrane Proteins, PomA and PomB, of the Na<sup>+</sup>-driven Flagellar Motor in *Vibrio alginolyticus*, 635
- Tillander, V. See *Reilly, Ofman, Alexson, and Hunt*, 655
- Toh, H. See *Daiyasu, Saino, Tomoto, Mizutani, and Sakata*, 467
- Tokita, K. See *Oda, Ota, Li, Taniguchi, Nishino, Takagi, Yamamoto, and Nishiura*, 371
- Tomoda, S. See *Iwaoka, Kumakura, Yoneda, Nakahara, Henmi, Aonuma, and Nakatani*, 121
- Tomoto, H. See *Daiyasu, Saino, Mizutani, Sakata, and Toh*, 467
- Toraya, T., Tamura, N., Watanabe, T., Yamanishi, M., Hieda, N., and Mori, K. Mechanism-based Inactivation of Coenzyme B<sub>12</sub>-dependent Diol Dehydratase by 3-Unsaturated 1,2-Diols and Thioglycerol, 437
- Torikata, T. See *Hirakawa, Ochi, Kawahara, Kawamura, and Kuhara*, 753
- Tsuboi, K. See *Wang, Zhao, Uyama, Wu, Kakehi, and Ueda*, 685
- Tsuji, A. See *Kikuchi, Saika, Yuasa, and Nagahama*, 789
- Tsuji, T., Nagata, T., and Yanagawa, H. N- and C-terminal Fragments of a Globular Protein Constructed by Elongation of Modules as a Units Associated for Functional Complementation, 513
- Tsumoto, K. See *Fukushima, Mizutani, Imamura, Morino, Kobayashi, Okumura, and Yoshimura*, 763
- Tsutsumi, K. See *Tada, Ishihara, Suzuki, Gohda, and Teno*, 499
- Tsuzuki, T. See *Kamiya, Uchiyama, Nakatsu, and Harashima*, 431
- Tuvshintugs, B. See *Gantulga, Endo, Takino, Sato, Murakami, and Yoshioka*, 693
- Tyagi, T.K. See *Gupta, Baghel, Bansal, Kumari, Saini, Ponnai, Kumar, Bose, Saluja, Patkar, Parmar, and Guru Raj*, 709
- U
- Uchiumi, T. See *Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, and Hachimori*, 665
- Uchiyama, M. See *Kamiya, Nakatsu, Suzuki, and Harashima*, 431
- Ueda, N. See *Wang, Zhao, Uyama, Tsuboi, Wu, and Kakehi*, 685
- Ueda, T. See *Goto, Ohkuri, Shioi, Abe, and Imoto*, 619
- Utsumi, T. See *Sasaya, Shimoke, Nakayama, Matsumura, Fukunaga, and Ikeuchi*, 251
- Uyama, T. See *Wang, Zhao, Tsuboi, Wu, Kakehi, and Ueda*, 685
- V
- van Dijk, E. See *Schwamborn, Knipscheer, van Dijk, Sixma, Meloen, and Lagedijk*, 39
- van Dijk, W.J. See *Schwamborn, Knipscheer, van Dijk, Sixma, Meloen, and Lagedijk*, 39
- Victoriano, A.-F.B. See *Asamitsu, Yamaguchi, Nakata, Hibi, Imai, Onozaki, Kitade, and Okamoto*, 581
- W
- Wada, T. See *Miyagi, Yamaguchi, Hata, and Shiozaki*, 279
- . See *Yamamoto, Suzuki, Okada, Yoshida, Kaufman, and Mori*, 477
- Wada, Y., Mitsuda, M., Ishihara, Y., Watanabe, M., Iwasaki, M., and Asahi, S. Important Amino Acid Residues that Confer CYP2C19 Selective Activity to CYP2C9, 323
- Wakita, T. See *Someya, and Takeda*, 771
- Wang, B. See *Biswas, Lewis, Miyagi, Santoshkumar, Gangadhariah, and Nagaraj*, 21
- Wang, C., Han, M., Zhao, X.-M., and Wen, J.-K. Krüppel-like Factor 4 is Required for the Expression of Vascular Smooth Muscle Cell Differentiation Marker Genes Induced by All-Trans Retinoic Acid, 313
- Wang, F. See *Tan, Yang, Feng, Liu, Cao, and Mu*, 207
- Wang, Hao. See *Hou, Li, Wang, Qian, Zhang, Hong, and Guo*, 115
- Wang, Hong. See *Wu, Zhu, He, Barr, and Klein*, 571
- Wang, J., Zhao, L.-Y., Uyama, T., Tsuboi, K., Wu, X.-X., Kakehi, Y., and Ueda, N. Expression and Secretion of N-acylethanolamine-hydrolysing Acid Amidase in Human Prostate Cancer Cells, 685
- Wang, L. See *Hou, Li, Qian, Zhang, Hong, Wang, and Guo*, 115
- Wang, M. See *Rigden, Baier, Ramirez-Arcos, Liao, and Dillon*, 63
- Wang, X.-B. See *Yin, Ren, Zhu, Zhang, Huang, and Yan*, 591
- Wang, Z. See *Han, Yan, Huang, Yao, Xi, Li, Zhou, Hou, Luo, and Ning*, 51
- Watanabe, M. See *Wada, Mitsuda, Ishihara, Iwasaki, and Asahi*, 323
- Watanabe, T. See *Toraya, Tamura, Yamanishi, Hieda, and Mori*, 437
- Wei, Y., Liu, D., Ge, Y., Zhou, F., Xu, J., Chen, H., Gu, J., and Jiang, J. Identification of E1AF as a Target Gene of E2F1-induced Apoptosis in Response to DNA Damage, 539
- Wen, J.-K. See *Wang, Han, and Zhao*, 313
- Wu, G.D., Wang, H., Zhu, H., He, Y., Barr, M.L., and Klein, A.S. Genetic Modulation of CD44 Expression by Intragraft Fibroblasts, 571
- Wu, X. See *Zhang, Han, Lin, and Yan*, 781
- Wu, X.-X. See *Wang, Zhao, Uyama, Tsuboi, Kakehi, and Ueda*, 685
- X
- Xi, D. See *Han, Yan, Huang, Yao, Wang, Li, Zhou, Hou, Luo, and Ning*, 51
- Xu, H.-M. See *Sami, Höti, Shen, and Huang*, 357
- Xu, J. See *Wei, Liu, Ge, Zhou, Chen, Gu, and Jiang*, 539

- Xu, L., Harada, H., and Taniguchi, A. The Effects of LAMP1 and LAMP3 on M180 Amelogenin Uptake, Localization and Amelogenin mRNA Induction by Amelogenin Protein, 531
- Y
- Yagi, Y. See *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Seno, Huh, and Yamada*, 447
- Yamada, H. See *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, and Huh*, 447
- Yamada, R. See *Nakayama-Hamada, Suzuki, Furukawa, and Yamamoto*, 393
- Yamada, T.K. See *Aoki, Arii, Kojima, and Mizoguchi*, 15
- Yamagishi, A. See *Shimizu, Kinoshita, Shida, and Oshima*, 383
- Yamaguchi, K. See *Miyagi, Wada, Hata, and Shiozaki*, 279
- Yamaguchi, Teruhide. See *Tanabe, Sato, Suzuki, Suzuki, and Nagao*, 399
- Yamaguchi, Tsuyoshi. See *Asamitsu, Nakata, Hibi, Victoriano, Imai, Onozaki, Kitade, and Okamoto*, 581
- Yamamoto, A. See *Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Hayano, Takahashi, and Kikuchi*, 187
- Yamamoto, Kazuhiko. See *Nakayama-Hamada, Suzuki, Furukawa, and Yamada*, 393
- Yamamoto, Keisuke, Suzuki, N., Wada, T., Okada, T., Yoshida, H., Kaufman, R.J., and Mori, K. Human HRD1 Promoter Carries a Functional Unfolded Protein Response Element to Which XBP1 but not ATF6 Directly Binds, 477
- Yamamoto, T. See *Oda, Tokita, Ota, Li, Taniguchi, Nishino, Takagi, and Nishiura*, 371
- Yamanishi, M. See *Toraya, Tamura, Watanabe, Hieda, and Mori*, 437
- Yamashita, S. See *Fukunaga, Nishimoto, Otosu, and Murakami*, 457
- Yan, H. See *Zhang, Han, Lin, and Wu*, 781
- Yan, W. See *Han, Huang, Yao, Wang, Xi, Li, Zhou, Hou, Luo, and Ning*, 51
- Yan, X.-Y. See *Yin, Ren, Zhu, Wang, Zhang, and Huang*, 591
- Yanagawa, H. See *Tsuji, and Nagata*, 513
- Yang, S. See *Tan, Feng, Liu, Cao, Mu, and Wang*, 207
- Yao, H. See *Han, Yan, Huang, Wang, Xi, Li, Zhou, Hou, Luo, and Ning*, 51
- Yasumoto, K.-i. See *Li, Takasaki, Satoh, Kimura, and Sogawa*, 555
- Yin, C.-C., Ren, L.-L., Zhu, L.-L., Wang, X.-B., Zhang, Z., Huang, H.-L., and Yan, X.-Y. Construction of a Fully Synthetic Human scFv Antibody Library with CDR3 Regions Randomized by a Split-Mix-Split Method and Its Application, 591
- Yokoyama, N. See *Abe, Kuroda, Kuboki, Matsushita, and Kojima*, 563
- Yokoyama, Satoru. See *Li, Takeda, and Shibahara*, 643
- Yokoyama, Shigeyuki. See *Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Hachimori, and Uchiumi*, 665
- Yoneda, M. See *Iwaoka, Kumakura, Nakahara, Henmi, Aonuma, Nakatani, and Tomoda*, 121
- Yonehara, T. See *Murata, Futami, Kitazoe, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, and Yamada*, 447
- Yoon, S.-S., Park, S.-H., Kim, Y.-C., Shin, M., Chong, C.-K., and Choi, J.-D. Cloning and Characterization of Phosphoglucomutase and Phosphomannomutase Derived from *Sphingomonas chungbukensis* DJ77, 507
- Yoon, Y.J. See *Lee, Jang, Kim, Cha, Hong, Choi, and Lee*, 159
- Yoshida, H. See *Yamamoto, Suzuki, Wada, Okada, Kaufman, and Mori*, 477
- Yoshida, N., Mita, T., and Onda, M. Susceptibilities of Phospholipid Membranes Containing Cholesterol or Ergosterol to Gramicidin and its Derivative Incorporated in Lysophospholipid Micelles, 167
- Yoshimura, T. See *Fukushima, Mizutani, Imamura, Morino, Kobayashi, Okumura, and Tsumoto*, 763
- Yoshioka, K. See *Gantulga, Tuvshintugs, Endo, Takino, Sato, and Murakami*, 693
- Yoshitake, T. See *Moro, Ogawa, and Ichimura*, 733
- Yuasa, K. See *Kikuchi, Saika, Nagahama, and Tsuji*, 789
- Yusa, A. See *Kyogashima, Tadano-Aritomi, Aoyama, Goto, Tamiya-Koizumi, Ito, Murate, Kannagi, and Hara*, 95
- Z
- Zhang, D. See *Hou, Li, Wang, Qian, Hong, Wang, and Guo*, 115
- Zhang, G., Han, B., Lin, X., Wu, X., and Yan, H. Modification of Antimicrobial Peptide with Low Molar Mass Poly(ethylene glycol), 781
- Zhang, Z. See *Yin, Ren, Zhu, Wang, Huang, and Yan*, 591
- Zhao, L.-Y. See *Wang, Uyama, Tsuboi, Wu, Kakehi, and Ueda*, 685
- Zhao, X.-M. See *Wang, Han, and Wen*, 313
- Zhou, F. See *Wei, Liu, Ge, Xu, Chen, Gu, and Jiang*, 539
- Zhou, Y. See *Han, Yan, Huang, Yao, Wang, Xi, Li, Hou, Luo, and Ning*, 51
- Zhu, H. See *Wu, Wang, He, Barr, and Klein*, 571
- Zhu, L.-L. See *Yin, Ren, Wang, Zhang, Huang, and Yan*, 591

## INDEX TO KEY WORDS

### A

- $\alpha$ -actinin, HL60 cells, retinoic acid, retinylated protein, retinoylation, Kubo, Ohba, Takahashi, 349
- $\alpha$ -helix, atomic force microscopy, circular dichroism spectra, fibre formation, heptad sequence, Aoki, Yamada, Arii, Kojima, Mizoguchi, 15
- $\alpha$ -momorcharin, fluorescence energy transfer, molten globule, protein folding/unfolding, time-resolved fluorescence depolarization, Fukunaga, Nishimoto, Otosu, Murakami, Yamashita, 457
- $\alpha$ A-crystallin, chaperone, homoarginine, homoargpyrimidine, homohydroimidazolone, Biswas, Lewis, Wang, Miyagi, Santoshkumar, Gangadhariah, Nagaraj, 21
- $\beta$ -glucosidase, disaccharide glycoside, furcatin hydrolase, homology modelling, mutagenesis, Daiyasu, Saino, Tomoto, Mizutani, Sakata, Toh, 467
- $\beta$ -oxidation, insulin signalling, insulin resistance, liver, palmitate, Ruddock, Stein, Landaker, Park, Cooksey, McClain, Patti, 599
- $\beta$ -TrCP, circadian rhythm, F-box protein, knockout mouse, ubiquitin E3 ligase, Ohsaki, Oishi, Kozono, Nakayama, Nakayama, Ishida, 609
- 3C-like protease, catalytic triad, norovirus, serine-like cysteine protease, serine protease, Someya, Takeda, Wakita, 771
- 6-phosphofructo-1-kinase, glycolysis, kinetics, liver, Sparus aurata, Mediavilla, Metón, Baanante, 235
- accumulation of collagen fibrils, cell cementing, cell–collagen interaction, clump formation, type V collagen fibrils, Kihara, Imamura, Takemura, Mizuno, Adachi, Hayashi, 625
- activity-enhanced mutant, archaea, enzymatic kinetics, proton relay mechanism, site-directed mutagenesis, Higashi, Tanimoto, Nishioka, Ishikawa, Taya, 77
- acyl-CoA thioesterase, peroxisomes, peroxisome proliferator-activated receptor- $\alpha$ , nudix hydrolase, coenzyme A, Reilly, Tillander, Ofman, Alexson, Hunt, 655
- adenosylcobalamin, coenzyme B<sub>12</sub>, diol dehydratase, mechanism-based inactivation, radical enzyme, Toraya, Tamura, Watanabe, Yamanishi, Hieda, Mori, 437
- advanced glycation end products, apoptosis, glycation, microglia, nitric oxide, Khazaei, Habibi-Rezaei, Karimzadeh, Moosavi-Movahedi, Sarrafnejhad, Sabouni, Bakhti, 197
- , ceramides, hydroxy-ceramides, long-chain bases, mass spectrometry, Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Ito, Murate, Kannagi, Hara, 95
- , DNA damage, E1AF, E2F1, H1299 cells, Wei, Liu, Ge, Zhou, Xu, Chen, Gu, Jiang, 539
- , ER stress, glucose-regulated protein 78, nicotine, PC12 cell, Sasaya, Utsumi, Shimoke, Nakayama, Matsumura, Fukunaga, Ikeuchi, 251
- archaea, activity-enhanced mutant, enzymatic kinetics, proton relay

allosteric, AMP, crystal structure, pyruvate kinase, ribose 5-phosphate, Suzuki, Ito, Shimizu-Ibuka, Sakai, 305

ameloblast, amelogenin, LAMP1, LAMP3, tooth development, Xu, Harada, Taniguchi, 531

amelogenin, LAMP1, LAMP3, ameloblast, tooth development, Xu, Harada, Taniguchi, 531

amine oxidase, benzylamine, copper-containing, growth substrate, semicarbazide-sensitive, Lee, Kim, Ro, 107

amino acid catalysts, energy acquiring central pathway, origins of life, primitive metabolism, thermophiles, Shimizu, Yamagishi, Kinoshita, Shida, Oshima, 383

AMP, allosteric, crystal structure, pyruvate kinase, ribose 5-phosphate, Suzuki, Ito, Shimizu-Ibuka, Sakai, 305

anandamide, N-acylethanolamine, endocannabinoid, LNCaP cell, lysosomal enzyme, Wang, Zhao, Uyama, Tsuboi, Wu, Kakehi, Ueda, 685

angiogenesis, cervical cancer, p21, p53, valproic acid, Sami, Höti, Xu, Shen, Huang, 357

antibody fragment, ceramic hydroxyapatite, high-performance liquid chromatography, monoclonal antibody, purification, Moro, Yoshitake, Ogawa, Ichimura, 733

antibody library, biopanning, phagedisplay, randomization, single-chain antibody, Yin, Ren, Zhu, Wang, Zhang, Huang, Yan, 591

antibody-mediated targeting, bionanocapsule, insect cell expression system, protein delivery, ZZ domain, Kurata, Shishido, Muraoka, Tanaka, Ogino, Fukuda, Kondo, 701

antimicrobial peptides, micelles, PEGylation, peptides, self-assembly, Zhang, Han, Lin, Wu, Yan, 781

apoptosis, advanced glycation end products, glycation, microglia, nitric oxide, Khazaei, Habibi-Rezaei, Karimzadeh, Moosavi-Movahedi, Sarrafnejhad, Sabouni, Bakhti, 197

—, ceramides, hydroxy-ceramides, long-chain bases, mass spectrometry, Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Ito, Murate, Kannagi, Hara, 95

—, DNA damage, E1AF, E2F1, H1299 cells, Wei, Liu, Ge, Zhou, Xu, Chen, Gu, Jiang, 539

—, ER stress, glucose-regulated protein 78, nicotine, PC12 cell, Sasaya, Utsumi, Shimoke, Nakayama, Matsumura, Fukunaga, Ikeuchi, 251

archaea, activity-enhanced mutant, enzymatic kinetics, proton relay

mechanism, site-directed mutagenesis, Higashi, Tanimoto, Nishioka, Ishikawa, Taya, 77

arginine, caffeine, coumarin, solubility, surface tension, Hirano, Arakawa, Shiraki, 363

artificial evolution, exon shuffling, functional complementation, module, protein folding, Tsuji, Nagata, Yanagawa, 513

aspartic peptidases, placenta, porcine, pregnancy, trophoblast, Telugu, Green, 725

assay, E3 ligase, peptide library, pepscan, SUMO (small ubiquitin-like modifier), Schwamborn, Knipscheer, van Dijk, van Dijk, Sixma, Meloen, Langedijk, 39

atomic force microscopy,  $\alpha$ -helix, circular dichroism spectra, fibre formation, heptad sequence, Aoki, Yamada, Arii, Kojima, Mizoguchi, 15

ATP synthase (F<sub>1</sub>F<sub>0</sub>-ATPase), IF<sub>1</sub> (ATPase inhibitor), mitochondria, pH sensing, regulation, Ando, Ichikawa, 547

ATP, bFGF, complex, FGF2, heparin, heparin-binding domain, Rose, Pallast, Klumpp, Kriegstein, 343

autoantigen, citrullination, fibrinogen, fibrin formation, thrombin, Nakayama-Hamada, Suzuki, Furukawa, Yamada, Yamamoto, 393

autonomous folding domain, conserved domain, PLP-binding domain, refolding and serine hydroxymethyltransferase, Bhatt, Bhakuni, 295

### B

backbone dynamics, ketosteroid isomerase, mutant, NMR, relaxation, Lee, Yoon, Jang, Kim, Cha, Hong, Choi, Lee, 159

bacterial flagellum, *in vitro* protein synthesis, ion-driven motor, membrane protein, stator, Asai, Nishino, Matsumura, Okamoto, Igarashi, Pai, Nishino, 691

bacterial flagellum, *in vitro* protein synthesis, ion-driven motor, membrane protein, stator, Terashima, Abe-Yoshizumi, Kojima, Homma, 635

baculovirus, gene expression, membrane fusion, membrane receptor, proteoliposome, Fukushima, Mizutani, Imamura, Morino, Kobayashi, Okumura, Tsumoto, Yoshimura, 763

benzylamine, amine oxidase, copper-containing, growth substrate, semicarbazide-sensitive, Lee, Kim, Ro, 107

BeWo cells, drugs of abuse, glucose uptake, methylxanthines, polyphenols, Araújo, Gonçalves, Martel, 177

bFGF, ATP, complex, FGF2, heparin, heparin-binding domain, Rose, Pallast, Klumpp, Kriegstein, 343

## INDEX TO KEY WORDS

- binding simulation, goose-type lysozyme, inverting enzyme, molecular dynamics simulation, systematic conformational search, *Hirakawa, Ochi, Kawahara, Kawamura, Torikata, Kuhara*, 753
- biomarker, chromatography, frontal affinity, glycan profiling, glycomics, lectin microarray, *Hirabayashi*, 139
- bionanocapsule, antibody-mediated targeting, insect cell expression system, protein delivery, ZZ domain, *Kurata, Shishido, Muraoka, Tanaka, Ogino, Fukuda, Kondo*, 701
- biopanning, antibody library, phage display, randomization, single-chain antibody, *Yin, Ren, Zhu, Wang, Zhang, Huang, Yan*, 591
- biosynthesis, cancer progression, cardiovascular disease, extracellular matrix, hyaluronan, *Itano*, 131
- bisphenol A, protein disulphide isomerase (PDI), dimethyl bisphenol A, chaperone activity, protein folding, *Hashimoto, Okada, Imaoka*, 335
- bovine serum albumin, bromophenol blue, denaturation, guanidine hydrochloride, urea, *Halim, Kadir, Tayyab*, 33
- bromophenol blue, bovine serum albumin, denaturation, guanidine hydrochloride, urea, *Halim, Kadir, Tayyab*, 33
- C
- c-jun*, cis-acting element, EMSA, positive regulatory factor, transcriptional regulation, *Agarwal, Kumar, Gupta, Dixit*, 741
- C-type lectin, complement C3, CR3, macrophage, oligomannose, *Abe, Kuroda, Kuboki, Matsushita, Yokoyama, Kojima*, 563
- C2C12 myotubes, dexamethasone, dimethyl sulphoxide, muscle proteolytic system-related genes, myogenesis-related genes, *Nishimura, Mikura, Hirasaka, Okumura, Nikawa, Kawano, Nakayama, Ikeda*, 717
- C5a, C5a receptor, monocytes, neutrophils, S19 ribosomal protein, *Oda, Tokita, Ota, Li, Taniguchi, Nishino, Takagi, Yamamoto, Nishiura*, 371
- C5a receptor, C5a, monocytes, neutrophils, S19 ribosomal protein, *Oda, Tokita, Ota, Li, Taniguchi, Nishino, Takagi, Yamamoto, Nishiura*, 371
- caffeine, arginine, coumarin, solubility, surface tension, *Hirano, Arakawa, Shiraki*, 363
- calcitonin, calcitonin gene-related peptide, calcitonin receptor, calcitonin receptor-stimulating peptide, genomic organization, *Osaki, Katafuchi, Minamino*, 419
- calcitonin gene-related peptide, calcitonin, calcitonin receptor, calcitonin receptor-stimulating peptide, genomic organization, *Osaki, Katafuchi, Minamino*, 419
- organization, *Osaki, Katafuchi, Minamino*, 419
- calcitonin receptor-stimulating peptide, calcitonin, calcitonin gene-related peptide, calcitonin receptor, genomic organization, *Osaki, Katafuchi, Minamino*, 419
- calcitonin receptor, calcitonin, calcitonin gene-related peptide, calcitonin receptor-stimulating peptide, genomic organization, *Osaki, Katafuchi, Minamino*, 419
- cancer progression, biosynthesis, cardiovascular disease, extracellular matrix, hyaluronan, *Itano*, 131
- cancer, diabetes, gangliosides, sialidase, transmembrane signalling, *Miyagi, Wada, Yamaguchi, Hata, Shiozaki*, 279
- carbon fibre, smart bandage, urate, uric acid, wound infection, *Sharp, Forsythe, Davis*, 87
- cardiovascular disease, biosynthesis, cancer progression, extracellular matrix, hyaluronan, *Itano*, 131
- catalytic triad, 3C-like protease, norovirus, serine-like cysteine protease, serine protease, *Someya, Takeda, Wakita*, 771
- cathepsin K, hydroxyproline, S2-P2 interaction, species difference, substrate specificity, *Tada, Tsutsumi, Ishihara, Suzuki, Gohda, Teno*, 499
- cation-binding protein, circular dichroism, copper, fluorescence, plant, *Nagasaki-Takeuchi, Miyano, Maeshima*, 487
- cationization, glutathione, glutathione S-transferase, polyethylenimine, protein transduction, *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, Yamada*, 447
- CD, disulphide, protein folding, selenium, UV, *Iwaoka, Kumakura, Yoneda, Nakahara, Henmi, Aonuma, Nakatani, Tomoda*, 121
- CD34, hematopoietic stem cells, humanization, immunogenicity, monoclonal antibody, *Hou, Li, Wang, Qian, Zhang, Hong, Wang, Guo*, 115
- CD44, gene expression, HA, intragraft fibroblast, rat, *Wu, Wang, Zhu, He, Barr, Klein*, 571
- cell cementing, accumulation of collagen fibrils, cell–collagen interaction, clump formation, type V collagen fibrils, *Kihara, Imamura, Takemura, Mizuno, Adachi, Hayashi*, 625
- cell division, DivIVA, *Enterococcus faecalis*, mutagenesis, protein interactions, *Rigden, Baier, Ramirez-Arcos, Liao, Wang, Dillon*, 63
- cell migration, MAP kinase, p38, RNA interference, scaffold protein, *Gantulga, Tuvshintugs, Endo, Takino, Sato, Murakami, Yoshioka*, 693
- cell–collagen interaction, accumulation of collagen fibrils, cell cementing, clump formation, type V collagen fibrils, *Kihara, Imamura, Takemura, Mizuno, Adachi, Hayashi*, 625
- ceramic hydroxyapatite, antibody fragment, high-performance liquid chromatography, monoclonal antibody, purification, *Moro, Yoshitake, Ogawa, Ichimura*, 733
- ceramides, apoptosis, hydroxy-ceramides, long-chain bases, mass spectrometry, *Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamaiya-Koizumi, Ito, Murate, Kannagi, Hara*, 95
- cervical cancer, angiogenesis, p21, p53, valproic acid, *Sami, Hötö, Xu, Shen, Huang*, 357
- chaperone,  $\alpha$ -crystallin, homoarginine, homoargpyrimidine, homohydroimidazolone, *Biswas, Lewis, Wang, Miyagi, Santoshkumar, Gangadhariah, Nagaraj*, 21
- chaperone activity, bisphenol A, protein disulphide isomerase (PDI), dimethyl bisphenol A, protein folding, *Hashimoto, Okada, Imaoka*, 335
- chemical modification, endostatin, low molecular weight heparin, polyethylene glycol, stability, structure, *Tan, Yang, Feng, Liu, Cao, Mu, Wang*, 207
- chromatography, biomarker, frontal affinity, glycan profiling, glycomics, lectin microarray, *Hirabayashi*, 139
- circadian rhythm,  $\beta$ -TrCP, F-box protein, knockout mouse, ubiquitin E3 ligase, *Ohsaki, Oishi, Kozono, Nakayama, Nakayama, Ishida*, 609
- circular dichroism, cation-binding protein, copper, fluorescence, plant, *Nagasaki-Takeuchi, Miyano, Maeshima*, 487
- circular dichroism spectra,  $\alpha$ -helix, atomic force microscopy, fibre formation, heptad sequence, *Aoki, Yamada, Arii, Kojima, Mizoguchi*, 15
- cis-acting element, *c-jun*, EMSA, positive regulatory factor, transcriptional regulation, *Agarwal, Kumar, Gupta, Dixit*, 741
- cis-element, degradation, ER, protein folding, transcription factor, *Yamamoto, Suzuki, Wada, Okada, Yoshida, Kaufman, Mori*, 477
- citrate carrier, *Drosophila melanogaster*, metabolite transporter, mitochondria, transport, *Carrisi, Madeo, Morciano, Dolce, Cenci, Cappello, Mazzeo, Iacopetta, Capobianco*, 389
- citrullination, autoantigen, fibrinogen, fibrin formation, thrombin, *Nakayama-Hamada, Suzuki, Furukawa, Yamada, Yamamoto*, 393
- cleavage specificity, cysteine protease, germination, granulin domain, RD21,

- Kikuchi, Saika, Yuasa, Nagahama, Tsuji*, 789
- clump formation, accumulation of collagen fibrils, cell cementing, cell–collagen interaction, type V collagen fibrils, *Kihara, Imamura, Takemura, Mizuno, Adachi, Hayashi*, 625
- coenzyme A, peroxisomes, acyl-CoA thioesterase, peroxisome proliferator-activated receptor- $\alpha$ , nudix hydrolase, *Reilly, Tillander, Ofman, Alexson, Hunt*, 655
- coenzyme B<sub>12</sub>, adenosylcobalamin, diol dehydratase, mechanism-based inactivation, radical enzyme, *Toraya, Tamura, Watanabe, Yamanishi, Hieda, Mori*, 437
- collagen metabolism, integrin signalling, nickel, prolidase, *Miltyk, Surażyński, Grabowska, Palka*, 409
- complement C3, CR3, C-type lectin, macrophage, oligomannose, *Abe, Kuroda, Kuboki, Matsushita, Yokoyama, Kojima*, 563
- complex, ATP, bFGF, FGF2, heparin, heparin-binding domain, *Rose, Pallast, Klumpp, Krieglstein*, 343
- conserved domain, autonomous folding domain, PLP-binding domain, refolding and serine hydroxymethyltransferase, *Bhatt, Bhakuni*, 295
- copper-containing, amine oxidase, benzylamine, growth substrate, semicarbazide-sensitive, *Lee, Kim, Ro*, 107
- copper, cation-binding protein, circular dichroism, fluorescence, plant, *Nagasaki-Takeuchi, Miyano, Maeshima*, 487
- coumarin, arginine, caffeine, solubility, surface tension, *Hirano, Arakawa, Shiraki*, 363
- CR3, complement C3, C-type lectin, macrophage, oligomannose, *Abe, Kuroda, Kuboki, Matsushita, Yokoyama, Kojima*, 563
- crystal structure, allosteric, AMP, pyruvate kinase, ribose 5-phosphate, *Suzuki, Ito, Shimizu-Ibuka, Sakai*, 305
- culture stage marker, cellular therapy, differentiation, gene expression, stem cell, *Tanabe, Sato, Suzuki, Suzuki, Nagao, Yamaguchi*, 399
- CYP2C9, CYP2C19, CYP2C43, F–G loop, NADPH-P450 reductase, substrate specificity, *Wada, Mitsuda, Ishihara, Watanabe, Iwasaki, Asahi*, 323
- CYP2C19, CYP2C9, CYP2C43, F–G loop, NADPH-P450 reductase, substrate specificity, *Wada, Mitsuda, Ishihara, Watanabe, Iwasaki, Asahi*, 323
- CYP2C43, CYP2C9, CYP2C19, F–G loop, NADPH-P450 reductase, substrate specificity, *Wada, Mitsuda, Ishihara, Watanabe, Iwasaki, Asahi*, 323
- cysteine protease, cleavage specificity, germination, granulin domain, RD21, *Kikuchi, Saika, Yuasa, Nagahama, Tsuji*, 789
- D
- degradation, *cis*-element, ER, protein folding, transcription factor, *Yamamoto, Suzuki, Wada, Okada, Yoshida, Kaufman, Mori*, 477
- denaturation, bovine serum albumin, bromophenol blue, guanidine hydrochloride, urea, *Halim, Kadir, Tayyab*, 33
- dephosphorylation, Ptprz, TrkA, NGF, neurite extension, *Shintani, Noda*, 259
- dexamethasone, C2C12 myotubes, dimethyl sulphoxide, muscle proteolytic system-related genes, myogenesis-related genes, *Nishimura, Mikura, Hirasaka, Okumura, Nikawa, Kawano, Nakayama, Ikeda*, 717
- diabetes, cancer, gangliosides, sialidase, transmembrane signalling, *Miyagi, Wada, Yamaguchi, Hata, Shiozaki*, 279
- differentiation, cellular therapy, culture stage marker, gene expression, stem cell, *Tanabe, Sato, Suzuki, Suzuki, Nagao, Yamaguchi*, 399
- dimeric protein, equilibrium unfolding, ketosteroid isomerase, NMR, urea, *Lee, Jang, Cha, Moon, Hong, Choi, Lee*, 215
- dimethyl bisphenol A, bisphenol A, protein disulphide isomerase (PDI), chaperone activity, protein folding, *Hashimoto, Okada, Imaoka*, 335
- dimethyl sulphoxide, C2C12 myotubes, dexamethasone, muscle proteolytic system-related genes, myogenesis-related genes, *Nishimura, Mikura, Hirasaka, Okumura, Nikawa, Kawano, Nakayama, Ikeda*, 717
- dimethylarginines, human diploid fibroblasts, H<sub>2</sub>O<sub>2</sub>-induced premature senescence, protein arginine methyltransferases, replicative senescence, *Lim, Lee, Lee, Oh, Kim*, 523
- diol dehydratase, adenosylcobalamin, coenzyme B<sub>12</sub>, mechanism-based inactivation, radical enzyme, *Toraya, Tamura, Watanabe, Yamanishi, Hieda, Mori*, 437
- disaccharide glycoside,  $\beta$ -glucosidase, furcatin hydrolase, homology modelling, mutagenesis, *Daiyasu, Saino, Tomoto, Mizutani, Sakata, Toh*, 467
- disulphide, CD, protein folding, selenium, UV, *Iwaoka, Kumakura, Yoneda, Nakahara, Henmi, Aonuma, Nakatani, Tomoda*, 121
- DivIVA, cell division, *Enterococcus faecalis*, mutagenesis, protein interactions, *Rigden, Baier, Ramirez-Arcos, Liao, Wang, Dillon*, 63
- DNA damage, apoptosis, E1AF, E2F1, H1299 cells, *Wei, Liu, Ge, Zhou, Xu, Chen, Gu, Jiang*, 539
- DNA repair, methyltransferase, nucleotide excision repair, O<sup>6</sup>-methylguanine, Ogt, Morita, Nakagawa, Kuramitsu, Masui, 267
- Drosophila melanogaster*, citrate carrier, metabolite transporter, mitochondria, transport, *Carrisi, Madeo, Morciano, Dolce, Cenci, Cappello, Mazzeo, Iacobetta, Capobianco*, 389
- drug delivery systems, fluorescence, gramicidin, Lysophospholipid, sterol, Yoshida, Mita, Onda, 167
- drugs of abuse, BeWo cells, glucose uptake, methylxanthines, polyphenols, Araújo, Gonçalves, Martel, 177
- E
- E1AF, apoptosis, DNA damage, E2F1, H1299 cells, *Wei, Liu, Ge, Zhou, Xu, Chen, Gu, Jiang*, 539
- E2F1, apoptosis, DNA damage, E1AF, H1299 cells, *Wei, Liu, Ge, Zhou, Xu, Chen, Gu, Jiang*, 539
- E3 ligase, assay, peptide library, pepscan, SUMO (small ubiquitin-like modifier), Schwamborn, Knipscheer, van Dijk, van Dijk, Sixma, Meloen, Langedijk, 39
- electron microscopy, intermediate filament, site-directed mutagenesis, vimentin, viscosity, Gohara, Nishikawa, Takasaki, Ando, 675
- elongation factors, GTPase-associated centre, ribosomal stalk, ribosome, translation elongation, Nomura, Nakatsuchi, Sugita, Nomura, Kaminiishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, Uchiumi, 665
- EMSA, *c-jun*, *cis*-acting element, positive regulatory factor, transcriptional regulation, Agarwal, Kumar, Gupta, Dixit, 741
- endocannabinoid, *N*-acylethanolamine, anandamide, LNCaP cell, lysosomal enzyme, Wang, Zhao, Uyama, Tsuboi, Wu, Kakehi, Ueda, 685
- endoplasmic reticulum, fatty acid, glycosyltransferases, Golgi apparatus, post-translational modification, Kinoshita, Fujita, Maeda, 287
- endostatin, chemical modification, low molecular weight heparin, polyethylene glycol, stability, structure, Tan, Yang, Feng, Liu, Cao, Mu, Wang, 207
- energy acquiring central pathway, amino acid catalysts, origins of life, primitive metabolism, thermophiles, Shimizu, Yamagishi, Kinoshita, Shida, Oshima, 383
- Enterococcus faecalis*, cell division, DivIVA, mutagenesis, protein interactions, Rigden, Baier, Ramirez-Arcos, Liao, Wang, Dillon, 63
- enzymatic kinetics, activity-enhanced mutant, archaea, proton relay mechanism, site-directed mutagenesis,

## INDEX TO KEY WORDS

- Higashi, Tanimoto, Nishioka, Ishikawa, Taya*, 77
- enzyme activity, hen lysozyme, mutation analysis, stability, X-ray crystallographic structure, *Goto, Ohkuri, Shioi, Abe, Imoto, Ueda*, 619
- enzyme kinetics, malaria, *Plasmodium falciparum*, thymidylate kinase, *Kandeel, Kitade*, 245
- equilibrium unfolding, dimeric protein, ketosteroid isomerase, NMR, urea, *Lee, Jang, Cha, Moon, Hong, Choi, Lee*, 215
- ER, *cis*-element, degradation, protein folding, transcription factor, *Yamamoto, Suzuki, Wada, Okada, Yoshida, Kaufman, Mori*, 477
- ER stress, apoptosis, glucose-regulated protein 78, nicotine, PC12 cell, *Sasaya, Utsumi, Shimoke, Nakayama, Matsumura, Fukunaga, Ikeuchi*, 251
- ERp57, protein disulphide isomerase, mitochondria, P5, single-chain antibody fragment, *Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, Takahashi, Kikuchi*, 187
- ethyl-3,4-dihydroxybenzoate, haem oxygenase-1, hypoxia, hypoxia-inducible factor-1 $\alpha$ , prolyl-hydroxylase inhibitor, *Li, Takeda, Yokoyama, Shibahara*, 643
- exon shuffling, artificial evolution, functional complementation, module, protein folding, *Tsuji, Nagata, Yanagawa*, 513
- expression, all-trans retinoic acid, KLF4, marker gene, VSMC, *Wang, Han, Zhao, Wen*, 313
- extracellular matrix, biosynthesis, cancer progression, cardiovascular disease, hyaluronan, *Itano*, 131
- extracellular polysaccharide, gene cloning, phosphoglucomutase, phosphomannomutase, *Sphingomonas chungbukensis Dj77*, synthesis, *Yoon, Park, Kim, Shin, Chong, Choi*, 507
- F**
- F-G loop, CYP2C9, CYP2C19, CYP2C43, NADPH-P450 reductase, substrate specificity, *Wada, Mitsuda, Ishihara, Watanabe, Iwasaki, Asahi*, 323
- F-box protein,  $\beta$ -TrCP, circadian rhythm, knockout mouse, ubiquitin E3 ligase, *Ohsaki, Oishi, Kozono, Nakayama, Nakayama, Ishida*, 609
- fatty acid, endoplasmic reticulum, glycosyltransferases, Golgi apparatus, post-translational modification, *Kinoshita, Fujita, Maeda*, 287
- fatty acid desaturase, fatty acid elongase, lipid metabolism, lifespan, ontogeny, RNA interference, *Horikawa, Nomura, Hashimoto, Sakamoto*, 149
- fatty acid elongase, fatty acid desaturase, lipid metabolism, lifespan, ontogeny, RNA interference, *Horikawa, Nomura, Hashimoto, Sakamoto*, 149
- FGF2, ATP, bFGF, complex, heparin, heparin-binding domain, *Rose, Pallast, Klumpp, Kriegstein*, 343
- fibre formation,  $\alpha$ -helix, atomic force microscopy, circular dichroism spectra, heptad sequence, *Aoki, Yamada, Arii, Kojima, Mizoguchi*, 15
- fibrin formation, autoantigen, citrullination, fibrinogen, thrombin, *Nakayama-Hamada, Suzuki, Furukawa, Yamada, Yamamoto*, 393
- fibrinogen, autoantigen, citrullination, fibrin formation, thrombin, *Nakayama-Hamada, Suzuki, Furukawa, Yamada, Yamamoto*, 393
- fluorescence, cation-binding protein, circular dichroism, copper, plant, *Nagasaki-Takeuchi, Miyano, Maeshima*, 487
- fluorescence, drug delivery systems, gramicidin, Lysophospholipid, sterol, *Yoshida, Mita, Onda*, 167
- fluorescence energy transfer,  $\alpha$ -momorcharin, molten globule, protein folding/unfolding, time-resolved fluorescence depolarization, *Fukunaga, Nishimoto, Otosu, Murakami, Yamashita*, 457
- fragile X mental retardation protein, histone, myelin basic protein, protein arginine methyltransferase, protein lysine methyltransferase, *Denman*, 223
- Fringe, Notch, *O*-fucose, *O*-fucosyltransferase, *O*-glucose, *Okajima, Matsuura, Matsuda*, 1
- frontal affinity, biomarker, chromatography, glycan profiling, glycomics, lectin microarray, *Hirabayashi*, 139
- functional complementation, artificial evolution, exon shuffling, module, protein folding, *Tsuji, Nagata, Yanagawa*, 513
- furcatin hydrolase,  $\beta$ -glucosidase, disaccharide glycoside, homology modelling, mutagenesis, *Daiyasu, Saino, Tomoto, Mizutani, Sakata, Toh*, 467
- G**
- gangliosides, cancer, diabetes, sialidase, transmembrane signalling, *Miyagi, Wada, Yamaguchi, Hata, Shiozaki*, 279
- gene cloning, extracellular polysaccharide, phosphoglucomutase, phosphomannomutase, *Sphingomonas chungbukensis Dj77*, synthesis, *Yoon, Park, Kim, Shin, Chong, Choi*, 507
- gene correction, genetic engineering, nucleic acid therapeutics, *rpsL* gene, single-stranded DNA fragment, *Kamiya, Uchiyama, Nakatsu, Suzuki, Harashima*, 431
- gene expression, baculovirus, membrane fusion, membrane receptor, proteoliposome, *Fukushima, Mizutani*,
- Imamura, Morino, Kobayashi, Okumura, Tsumoto, Yoshimura*, 763
- , CD44, HA, intragraft fibroblast, rat, *Wu, Wang, Zhu, He, Barr, Klein*, 571
- , cellular therapy, culture stage marker, differentiation, stem cell, *Tanabe, Sato, Suzuki, Suzuki, Nagao, Yamaguchi*, 399
- gene regulation, hfgl2, nucleocapsid protein, prothrombinase, SARS-CoV, *Han, Yan, Huang, Yao, Wang, Xi, Li, Zhou, Hou, Luo, Ning*, 51
- genetic engineering, gene correction, nucleic acid therapeutics, *rpsL* gene, single-stranded DNA fragment, *Kamiya, Uchiyama, Nakatsu, Suzuki, Harashima*, 431
- genomic organization, calcitonin, calcitonin gene-related peptide, calcitonin receptor, calcitonin receptor-stimulating peptide, *Osaki, Katafuchi, Minamino*, 419
- germination, cleavage specificity, cysteine protease, granulin domain, *RD21, Kikuchi, Saika, Yuasa, Nagahama, Tsuji*, 789
- glucose uptake, BeWo cells, drugs of abuse, methylxanthines, polyphenols, *Araújo, Gonçalves, Martel*, 177
- glucose-regulated protein 78, apoptosis, ER stress, nicotine, PC12 cell, *Sasaya, Utsumi, Shimoke, Nakayama, Matsumura, Fukunaga, Ikeuchi*, 251
- glutamine synthetase, *Mycobacterium smegmatis*, polyphenolic acetate, protein acetylation, transacetylase, *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Saluja, Patkar, Parmar, Guru Raj*, 709
- glutathione, cationization, glutathione S-transferase, polyethylenimine, protein transduction, *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, Yamada*, 447
- glutathione S-transferase, cationization, glutathione, polyethylenimine, protein transduction, *Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, Yamada*, 447
- glycan profiling, biomarker, chromatography, frontal affinity, glycomics, lectin microarray, *Hirabayashi*, 139
- glycation, advanced glycation end products, apoptosis, microglia, nitric oxide, *Khazaei, Habibi-Rezaei, Karimzadeh, Moosavi-Movahedi, Sarrafnejhad, Sabouni, Bakhti*, 197
- glycolysis, kinetics, liver, 6-phosphofructokinase, *Sparus aurata, Mediavilla, Metón, Baanante*, 235
- glycomics, biomarker, chromatography, frontal affinity, glycan profiling, lectin microarray, *Hirabayashi*, 139

glycosyltransferase, heparan sulphate, hereditary multiple exostoses, proteoglycan, tumour-suppressor gene, *Nadanaka, Kitagawa*, 7  
glycosyltransferases, endoplasmic reticulum, fatty acid, Golgi apparatus, post-translational modification, *Kinoshita, Fujita, Maeda*, 287  
Golgi apparatus, endoplasmic reticulum, fatty acid, glycosyltransferases, post-translational modification, *Kinoshita, Fujita, Maeda*, 287  
goose-type lysozyme, binding simulation, inverting enzyme, molecular dynamics simulation, systematic conformational search, *Hirakawa, Ochi, Kawahara, Kawamura, Torikata, Kuhara*, 753  
gramicidin, drug delivery systems, fluorescence, Lysophospholipid, sterol, *Yoshida, Mita, Onda*, 167  
granulin domain, cleavage specificity, cysteine protease, germination, RD21, *Kikuchi, Saika, Yuasa, Nagahama, Tsuji*, 789  
growth substrate, amine oxidase, benzylamine, copper-containing, semicarbazide-sensitive, *Lee, Kim, Ro*, 107  
GTPase-associated centre, elongation factors, ribosomal stalk, ribosome, translation elongation, *Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, Uchiumi*, 665  
guanidine hydrochloride, bovine serum albumin, bromophenol blue, denaturation, urea, *Halim, Kadir, Tayyab*, 33

## H

H1299 cells, apoptosis, DNA damage, E1AF, E2F1, *Wei, Liu, Ge, Zhou, Xu, Chen, Gu, Jiang*, 539  
 $H_2O_2$ -induced premature senescence, dimethylarginines, human diploid fibroblasts, protein arginine methyltransferases, replicative senescence, *Lim, Lee, Lee, Oh, Kim*, 523  
HA, CD44, gene expression, intragraft fibroblast, rat, *Wu, Wang, Zhu, He, Barr, Klein*, 571  
haem oxygenase-1, ethyl-3,4-dihydroxybenzoate, hypoxia, hypoxia-inducible factor-1 $\alpha$ , prolyl-hydroxylase inhibitor, *Li, Takeda, Yokoyama, Shibahara*, 643  
hematopoietic stem cells, CD34, humanization, immunogenicity, monoclonal antibody, *Hou, Li, Wang, Qian, Zhang, Hong, Wang, Guo*, 115  
hen lysozyme, enzyme activity, mutation analysis, stability, X-ray crystallographic structure, *Goto, Ohkuri, Shioi, Abe, Imoto, Ueda*, 619  
heparan sulphate, glycosyltransferase, hereditary multiple exostoses, proteoglycan, tumour-suppressor gene, *Nadanaka, Kitagawa*, 7

heparin, ATP, bFGF, complex, FGF2, heparin-binding domain, *Rose, Pallast, Klumpp, Kriegstein*, 343  
heparin-binding domain, ATP, bFGF, complex, FGF2, heparin, *Rose, Pallast, Klumpp, Kriegstein*, 343  
heptad sequence,  $\alpha$ -helix, atomic force microscopy, circular dichroism spectra, fibre formation, *Aoki, Yamada, Arii, Kojima, Mizoguchi*, 15  
hereditary multiple exostoses, glycosyltransferase, heparan sulphate, proteoglycan, tumour-suppressor gene, *Nadanaka, Kitagawa*, 7  
hfgl2, gene regulation, nucleocapsid protein, prothrombinase, SARS-CoV, *Han, Yan, Huang, Yao, Wang, Xi, Li, Zhou, Hou, Luo, Ning*, 51  
HIF prolyl hydroxylase, HIF-1 $\alpha$  stabilization, protein kinase C $\alpha$ , recombinant PHD1, transition metal ions, *Li, Takasaki, Satoh, Kimura, Yasumoto, Sogawa*, 555  
HIF-1 $\alpha$  stabilization, HIF prolyl hydroxylase, protein kinase C $\alpha$ , recombinant PHD1, transition metal ions, *Li, Takasaki, Satoh, Kimura, Yasumoto, Sogawa*, 555  
high-performance liquid chromatography, antibody fragment, ceramic hydroxyapatite, monoclonal antibody, purification, *Moro, Yoshitake, Ogawa, Ichimura*, 733  
histone, fragile X mental retardation protein, myelin basic protein, protein arginine methyltransferase, protein lysine methyltransferase, *Denman*, 223  
HL60 cells, retinoic acid, retinoylated protein, retinoylation,  $\alpha$ -actinin, *Kubo, Ohba, Takahashi*, 349  
homoarginine,  $\alpha$ A-crystallin, chaperone, homoargpyrimidine, homohydroimidazolone, *Biswas, Lewis, Wang, Miyagi, Santoshkumar, Gangadhariah, Nagaraj*, 21  
homoargpyrimidine,  $\alpha$ A-crystallin, chaperone, homoarginine, homohydroimidazolone, *Biswas, Lewis, Wang, Miyagi, Santoshkumar, Gangadhariah, Nagaraj*, 21  
homohydroimidazolone,  $\alpha$ A-crystallin, chaperone, homoarginine, homoargpyrimidine, *Biswas, Lewis, Wang, Miyagi, Santoshkumar, Gangadhariah, Nagaraj*, 21  
homology modelling,  $\beta$ -glucosidase, disaccharide glycoside, furcatin hydrolase, mutagenesis, *Daiyasu, Saino, Tomoto, Mizutani, Sakata, Toh*, 467  
human diploid fibroblasts, dimethylarginines,  $H_2O_2$ -induced premature senescence, protein arginine methyltransferases, replicative senescence, *Lim, Lee, Lee, Oh, Kim*, 523  
humanization, CD34, hematopoietic stem cells, immunogenicity, monoclonal antibody, *Hou, Li, Wang, Qian, Zhang, Hong, Wang, Guo*, 115  
hydroxy-ceramides, apoptosis, ceramides, long-chain bases, mass spectrometry, *Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Ito, Murate, Kannagi, Hara*, 95  
hydroxyproline, cathepsin K, S2-P2 interaction, species difference, substrate specificity, *Tada, Tsutsumi, Ishihara, Suzuki, Gohda, Teno*, 499  
hypoxia-inducible factor-1 $\alpha$ , ethyl-3,4-dihydroxybenzoate, haem oxygenase-1, hypoxia, prolyl-hydroxylase inhibitor, *Li, Takeda, Yokoyama, Shibahara*, 643  
hypoxia, ethyl-3,4-dihydroxybenzoate, haem oxygenase-1, hypoxia-inducible factor-1 $\alpha$ , prolyl-hydroxylase inhibitor, *Li, Takeda, Yokoyama, Shibahara*, 643

## I

IF<sub>1</sub> (ATPase inhibitor), ATP synthase ( $F_1F_0$ -ATPase), mitochondria, pH sensing, regulation, *Ando, Ichikawa*, 547  
IKK, NF- $\kappa$ B, noraristreromycin, phosphorylation, transcription, *Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Imai, Onozaki, Kitade, Okamoto*, 581  
immunogenicity, CD34, hematopoietic stem cells, humanization, monoclonal antibody, *Hou, Li, Wang, Qian, Zhang, Hong, Wang, Guo*, 115  
*in vitro* protein synthesis, bacterial flagellum, ion-driven motor, membrane protein, stator, *Asai, Nishino, Matsumura, Okamoto, Igarashi, Pai, Nishino*, 691  
*in vitro* protein synthesis, bacterial flagellum, ion-driven motor, membrane protein, stator, *Terashima, Abe-Yoshizumi, Kojima, Homma*, 635  
insect cell expression system, antibody-mediated targeting, bionanocapsule, protein delivery, ZZ domain, *Kurata, Shishido, Muraoka, Tanaka, Ogino, Fukuda, Kondo*, 701  
insulin resistance,  $\beta$ -oxidation, insulin signalling, liver, palmitate, *Ruddock, Stein, Landaker, Park, Cooksey, McClain, Patti*, 599  
insulin signalling,  $\beta$ -oxidation, insulin resistance, liver, palmitate, *Ruddock, Stein, Landaker, Park, Cooksey, McClain, Patti*, 599  
integrin signalling, collagen metabolism, nickel, prolidase, *Miltyk, Surażynski, Grabowska, Palka*, 409  
intermediate filament, electron microscopy, site-directed mutagenesis, vimentin, viscosity, *Gohara, Nishikawa, Takasaki, Ando*, 675

intragraft fibroblast, CD44, gene expression, HA, rat, Wu, Wang, Zhu, He, Barr, Klein, 571

inverting enzyme, binding simulation, goose-type lysozyme, molecular dynamics simulation, systematic conformational search, Hirakawa, Ochi, Kawahara, Kawamura, Torikata, Kuhara, 753

ion-driven motor, bacterial flagellum, *in vitro* protein synthesis, membrane protein, stator, Asai, Nishino, Matsumura, Okamoto, Igarashi, Pai, Nishino, 691

ion-driven motor, bacterial flagellum, *in vitro* protein synthesis, membrane protein, stator, Terashima, Abe-Yoshizumi, Kojima, Homma, 635

## K

ketosteroid isomerase, backbone dynamics, mutant, NMR, relaxation, Lee, Yoon, Jang, Kim, Cha, Hong, Choi, Lee, 159

ketosteroid isomerase, dimeric protein, equilibrium unfolding, NMR, urea, Lee, Jang, Cha, Moon, Hong, Choi, Lee, 215

kinetics, glycolysis, liver, 6-phosphofructo-1-kinase, *Sparus aurata*, Mediavilla, Metón, Baanante, 235

KLF4, all-trans retinoic acid, expression, marker gene, VSMC, Wang, Han, Zhao, Wen, 313

knockout mouse,  $\beta$ -TrCP, circadian rhythm, F-box protein, ubiquitin E3 ligase, Ohsaki, Oishi, Kozono, Nakayama, Nakayama, Ishida, 609

## L

LAMP1, amelogenin, LAMP3, ameloblast, tooth development, Xu, Harada, Taniguchi, 531

LAMP3, amelogenin, LAMP1, ameloblast, tooth development, Xu, Harada, Taniguchi, 531

lectin microarray, biomarker, chromatography, frontal affinity, glycan profiling, glycomics, Hirabayashi, 139

lifespan, fatty acid desaturase, fatty acid elongase, lipid metabolism, ontogeny, RNA interference, Horikawa, Nomura, Hashimoto, Sakamoto, 149

lipid metabolism, fatty acid desaturase, fatty acid elongase, lifespan, ontogeny, RNA interference, Horikawa, Nomura, Hashimoto, Sakamoto, 149

liver,  $\beta$ -oxidation, insulin signalling, insulin resistance, palmitate, Ruddock, Stein, Landaker, Park, Cooksey, McClain, Patti, 599

liver, glycolysis, kinetics, 6-phosphofructo-1-kinase, *Sparus aurata*, Mediavilla, Metón, Baanante, 235

LNCaP cell, *N*-acylethanolamine, anandamide, endocannabinoid,

lysosomal enzyme, Wang, Zhao, Uyama, Tsuboi, Wu, Kakehi, Ueda, 685

long-chain bases, apoptosis, ceramides, hydroxy-ceramides, mass spectrometry, Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Ito, Murate, Kannagi, Hara, 95

low molecular weight heparin, chemical modification, endostatin, polyethylene glycol, stability, structure, Tan, Yang, Feng, Liu, Cao, Mu, Wang, 207

Lysophospholipid, drug delivery systems, fluorescence, gramicidin, sterol, Yoshida, Mita, Onda, 167

lysosomal enzyme, *N*-acylethanolamine, anandamide, endocannabinoid, LNCaP cell, Wang, Zhao, Uyama, Tsuboi, Wu, Kakehi, Ueda, 685

## M

macrophage, complement C3, CR3, C-type lectin, oligomannose, Abe, Kuroda, Kuboki, Matsushita, Yokoyama, Kojima, 563

malaria, enzyme kinetics, *Plasmodium falciparum*, thymidylate kinase, Kandeel, Kitade, 245

MAP kinase, cell migration, p38, RNA interference, scaffold protein, Gantulga, Tuвшинтугс, Endo, Takino, Sato, Murakami, Yoshioka, 693

marker gene, all-trans retinoic acid, expression, KLF4, VSMC, Wang, Han, Zhao, Wen, 313

mass spectrometry, apoptosis, ceramides, hydroxy-ceramides, long-chain bases, Kyogashima, Tadano-Aritomi, Aoyama, Yusa, Goto, Tamiya-Koizumi, Ito, Murate, Kannagi, Hara, 95

mechanism-based inactivation, adenosylcobalamin, coenzyme B<sub>12</sub>, diol dehydratase, radical enzyme, Toraya, Tamura, Watanabe, Yamanishi, Hieda, Mori, 437

membrane fusion, baculovirus, gene expression, membrane receptor, proteoliposome, Fukushima, Mizutani, Imamura, Morino, Kobayashi, Okumura, Tsumoto, Yoshimura, 763

membrane protein, bacterial flagellum, *in vitro* protein synthesis, ion-driven motor, stator, Asai, Nishino, Matsumura, Okamoto, Igarashi, Pai, Nishino, 691

membrane protein, bacterial flagellum, *in vitro* protein synthesis, ion-driven motor, stator, Terashima, Abe-Yoshizumi, Kojima, Homma, 635

membrane receptor, baculovirus, gene expression, membrane fusion, proteoliposome, Fukushima, Mizutani, Imamura, Morino, Kobayashi, Okumura, Tsumoto, Yoshimura, 763

metabolite transporter, citrate carrier, *Drosophila melanogaster*, mitochondria, transport, Carrisi, Madeo,

Morciano, Dolce, Cenci, Cappello, Mazzeo, Iacopetta, Capobianco, 389

methyltransferase, DNA repair, nucleotide excision repair, *O*<sup>6</sup>-methylguanine, Ogt, Morita, Nakagawa, Kuramitsu, Masui, 267

methylxanthines, BeWo cells, drugs of abuse, glucose uptake, polyphenols, Araújo, Gonçalves, Martel, 177

micelles, antimicrobial peptides, PEGylation, peptides, self-assembly, Zhang, Han, Lin, Wu, Yan, 781

microglia, advanced glycation end products, apoptosis, glycation, nitric oxide, Khazaei, Habibi-Rezaei, Karimzadeh, Moosavi-Movahedi, Sarrafnejhad, Sabouri, Bakhti, 197

mitochondria, ATP synthase (F<sub>1</sub>F<sub>0</sub>-ATPase), IF<sub>1</sub> (ATPase inhibitor), pH sensing, regulation, Ando, Ichikawa, 547

mitochondria, citrate carrier, *Drosophila melanogaster*, metabolite transporter, transport, Carrisi, Madeo, Morciano, Dolce, Cenci, Cappello, Mazzeo, Iacopetta, Capobianco, 389

mitochondria, ERp57, protein disulphide isomerase, P5, single-chain antibody fragment, Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, Takahashi, Kikuchi, 187

module, artificial evolution, exon shuffling, functional complementation, protein folding, Tsuji, Nagata, Yanagawa, 513

molecular dynamics simulation, binding simulation, goose-type lysozyme, inverting enzyme, systematic conformational search, Hirakawa, Ochi, Kawahara, Kawamura, Torikata, Kuhara, 753

molten globule,  $\alpha$ -momorcharin, fluorescence energy transfer, protein folding/unfolding, time-resolved fluorescence depolarization, Fukunaga, Nishimoto, Otosu, Murakami, Yamashita, 457

monoclonal antibody, antibody fragment, ceramic hydroxyapatite, high-performance liquid chromatography, purification, Moro, Yoshitake, Ogawa, Ichimura, 733

monoclonal antibody, CD34, hematopoietic stem cells, humanization, immunogenicity, Hou, Li, Wang, Qian, Zhang, Hong, Wang, Guo, 115

monocytes, C5a, C5a receptor, neutrophils, S19 ribosomal protein, Oda, Tokita, Ota, Li, Taniguchi, Nishino, Takagi, Yamamoto, Nishiura, 371

muscle proteolytic system-related genes, C2C12 myotubes, dexamethasone, dimethyl sulphoxide, myogenesis-related genes, Nishimura, Mikura, Hirasaka, Okumura, Nikawa, Kawano, Nakayama, Ikeda, 717

mutagenesis,  $\beta$ -glucosidase, disaccharide glycoside, furcatin hydrolase, homology modelling, *Daiyasu, Saino, Tomoto, Mizutani, Sakata, Toh*, 467  
 mutagenesis, cell division, DivIVA, *Enterococcus faecalis*, protein interactions, *Rigden, Baier, Ramirez-Arcos, Liao, Wang, Dillon*, 63  
 mutant, backbone dynamics, ketosteroid isomerase, NMR, relaxation, *Lee, Yoon, Jang, Kim, Cha, Hong, Choi, Lee*, 159  
 mutation analysis, enzyme activity, hen lysozyme, stability, X-ray crystallographic structure, *Goto, Ohkuri, Shioi, Abe, Imoto, Ueda*, 619  
*Mycobacterium smegmatis*, glutamine synthetase, polyphenolic acetate, protein acetylation, transacetylase, *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Saluja, Patkar, Parmar, Guru Raj*, 709  
 myelin basic protein, fragile X mental retardation protein, histone, protein arginine methyltransferase, protein lysine methyltransferase, *Denman*, 223  
 myogenesis-related genes, C2C12 myotubes, dexamethasone, dimethyl sulphoxide, muscle proteolytic system-related genes, *Nishimura, Mikura, Hirasaka, Okumura, Nikawa, Kawano, Nakayama, Ikeda*, 717

## N

*N*-acylethanolamine, anandamide, endocannabinoid, LNCaP cell, lysosomal enzyme, *Wang, Zhao, Uyama, Tsuboi, Wu, Kakehi, Ueda*, 685  
 NADPH-P450 reductase, CYP2C9, CYP2C19, CYP2C43, F-G loop, substrate specificity, *Wada, Mitsuda, Ishihara, Watanabe, Iwasaki, Asahi*, 323  
 neurite extension, Ptpz, TrkA, NGF, dephosphorylation, *Shintani, Noda*, 259  
 neutrophils, C5a, C5a receptor, monocytes, S19 ribosomal protein, *Oda, Tokita, Ota, Li, Taniguchi, Nishino, Takagi, Yamamoto, Nishiura*, 371  
 NF- $\kappa$ B, IKK, noraristreromycin, phosphorylation, transcription, *Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Imai, Onozaki, Kitade, Okamoto*, 581  
 NGF, Ptpz, TrkA, dephosphorylation, neurite extension, *Shintani, Noda*, 259  
 nickel, collagen metabolism, integrin signalling, prolidase, *Miltyk, Surazynski, Grabowska, Palka*, 409  
 nicotine, apoptosis, ER stress, glucose-regulated protein 78, PC12 cell, *Sasaya, Utsumi, Shimoke, Nakayama, Matsumura, Fukunaga, Ikeuchi*, 251  
 nitric oxide, advanced glycation end products, apoptosis, glycation, microglia, *Khazaie, Habibi-Rezaei, Karimzadeh*,

*Moosavi-Movahedi, Sarrafnejhad, Sabouni, Bakhti*, 197

NMR, backbone dynamics, ketosteroid isomerase, mutant, relaxation, *Lee, Yoon, Jang, Kim, Cha, Hong, Choi, Lee*, 159

NMR, dimeric protein, equilibrium unfolding, ketosteroid isomerase, urea, *Lee, Jang, Cha, Moon, Hong, Choi, Lee*, 215

non-coding RNA, peptide nucleic acid, ribosomal RNA, RNA isolation, transfer RNA, *Ohtsuki, Fujimoto, Kamimukai, Kumano, Kitamatsu, Sisido*, 415

noraristreromycin, NF- $\kappa$ B, IKK, phosphorylation, transcription, *Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Imai, Onozaki, Kitade, Okamoto*, 581

norovirus, 3C-like protease, catalytic triad, serine-like cysteine protease, serine protease, *Someya, Takeda, Wakita*, 771  
 Notch, Fringe, O-fucose, O-fucosyltransferase, O-glucose, *Okajima, Matsuura, Matsuda*, 1

nucleic acid therapeutics, gene correction, genetic engineering, *rpsL* gene, single-stranded DNA fragment, *Kamiya, Uchiyama, Nakatsu, Tsuzuki, Harashima*, 431

nucleocapsid protein, gene regulation, hfgl2, prothrombinase, SARS-CoV, *Han, Yan, Huang, Yao, Wang, Xi, Li, Zhou, Hou, Luo, Ning*, 51

nucleotide excision repair, DNA repair, methyltransferase, O<sup>6</sup>-methylguanine, *Ogt, Morita, Nakagawa, Kuramitsu, Masui*, 267

nudix hydrolase, peroxisomes, acyl-CoA thioesterase, peroxisome proliferator-activated receptor- $\alpha$ , coenzyme A, *Reilly, Tillander, Ofman, Alexson, Hunt*, 655

## O

O-fucose, Fringe, Notch, O-fucosyltransferase, O-glucose, *Okajima, Matsuura, Matsuda*, 1

O-fucosyltransferase, Fringe, Notch, O-fucose, O-glucose, *Okajima, Matsuura, Matsuda*, 1

O-glucose, Fringe, Notch, O-fucose, O-fucosyltransferase, *Okajima, Matsuura, Matsuda*, 1

O<sup>6</sup>-methylguanine, DNA repair, methyltransferase, nucleotide excision repair, *Ogt, Morita, Nakagawa, Kuramitsu, Masui*, 267

Ogt, DNA repair, methyltransferase, nucleotide excision repair, O<sup>6</sup>-methylguanine, *Morita, Nakagawa, Kuramitsu, Masui*, 267

oligomannose, complement C3, CR3, C-type lectin, macrophage, *Abe, Kuroda, Kuboki, Matsushita, Yokoyama, Kojima*, 563

ontogeny, fatty acid desaturase, fatty acid elongase, lipid metabolism, lifespan,

RNA interference, *Horikawa, Nomura, Hashimoto, Sakamoto*, 149

origins of life, amino acid catalysts, energy acquiring central pathway, primitive metabolism, thermophiles, *Shimizu, Yamagishi, Kinoshita, Shida, Oshima*, 383

## P

p21, angiogenesis, cervical cancer, p53, valproic acid, *Sami, Höti, Xu, Shen, Huang*, 357

p38, cell migration, MAP kinase, RNA interference, scaffold protein, *Gantulga, Tuвшинтугс, Endo, Takino, Sato, Murakami, Yoshioka*, 693

P5, ERP57, protein disulphide isomerase, mitochondria, single-chain antibody fragment, *Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, Takahashi, Kikuchi*, 187

p53, angiogenesis, cervical cancer, p21, valproic acid, *Sami, Höti, Xu, Shen, Huang*, 357

palmitate,  $\beta$ -oxidation, insulin signalling, insulin resistance, liver, *Ruddock, Stein, Landaker, Park, Cooksey, McClain, Patti*, 599

PC12 cell, apoptosis, ER stress, glucose-regulated protein 78, nicotine, *Sasaya, Utsumi, Shimoke, Nakayama, Matsumura, Fukunaga, Ikeuchi*, 251

PEGylation, antimicrobial peptides, micelles, peptides, self-assembly, *Zhang, Han, Lin, Wu, Yan*, 781

pepcan, assay, E3 ligase, peptide library, SUMO (small ubiquitin-like modifier), *Schwamborn, Knipscheer, van Dijk, van Dijk, Sixma, Meloen, Langedijk*, 39

peptide library, assay, E3 ligase, pepscan, SUMO (small ubiquitin-like modifier), *Schwamborn, Knipscheer, van Dijk, van Dijk, Sixma, Meloen, Langedijk*, 39

peptide nucleic acid, non-coding RNA, ribosomal RNA, RNA isolation, transfer RNA, *Ohtsuki, Fujimoto, Kamimukai, Kumano, Kitamatsu, Sisido*, 415

peptides, antimicrobial peptides, micelles, PEGylation, self-assembly, *Zhang, Han, Lin, Wu, Yan*, 781

peroxisome proliferator-activated receptor- $\alpha$ , peroxisomes, acyl-CoA thioesterase, nudix hydrolase, coenzyme A, *Reilly, Tillander, Ofman, Alexson, Hunt*, 655

peroxisomes, acyl-CoA thioesterase, peroxisome proliferator-activated receptor- $\alpha$ , nudix hydrolase, coenzyme A, *Reilly, Tillander, Ofman, Alexson, Hunt*, 655

pH sensing, ATP synthase (F<sub>1</sub>F<sub>0</sub>-ATPase), IF<sub>1</sub> (ATPase inhibitor), mitochondria, regulation, *Ando, Ichikawa*, 547

phagedisplay, antibody library, biopanning, randomization, single-chain antibody, *Yin, Ren, Zhu, Wang, Zhang, Huang, Yan*, 591

- phosphoglucomutase, extracellular polysaccharide, gene cloning, phosphomannomutase, *Sphingomonas chungbukensis* DJ77, synthesis, Yoon, Park, Kim, Shin, Chong, Choi, 507
- phosphomannomutase, extracellular polysaccharide, gene cloning, phosphoglucomutase, *Sphingomonas chungbukensis* DJ77, synthesis, Yoon, Park, Kim, Shin, Chong, Choi, 507
- phosphorylation, NF- $\kappa$ B, IKK, noraristreror-mycin, transcription, Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Imai, Onozaki, Kitade, Okamoto, 581
- placenta, aspartic peptidases, porcine, pregnancy, trophoblast, *Telugu, Green*, 725
- plant, cation-binding protein, circular dichroism, copper, fluorescence, Nagasaki-Takeuchi, Miyano, Maeshima, 487
- Plasmodium falciparum*, enzyme kinetics, malaria, thymidylate kinase, Kandeel, Kitade, 245
- PLP-binding domain, autonomous folding domain, conserved domain, refolding and serine hydroxymethyltransferase, Bhatt, Bhakuni, 295
- polyethylene glycol, chemical modification, endostatin, low molecular weight heparin, stability, structure, Tan, Yang, Feng, Liu, Cao, Mu, Wang, 207
- Polyethylenimine, cationization, glutathione, glutathione S-transferase, protein transduction, Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, Yamada, 447
- polyphenolic acetate, glutamine synthetase, Mycobacterium smegmatis, protein acetylation, transacetylase, Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnai, Kumar, Bose, Saluja, Patkar, Parmar, Guru Raj, 709
- polyphenols, BeWo cells, drugs of abuse, glucose uptake, methylxanthines, Araújo, Gonçalves, Martel, 177
- porcine, aspartic peptidases, placenta, pregnancy, trophoblast, *Telugu, Green*, 725
- positive regulatory factor, *c-jun*, *cis*-acting element, EMSA, transcriptional regulation, Agarwal, Kumar, Gupta, Dixit, 741
- post-translational modification, endoplasmic reticulum, fatty acid, glycosyltransferases, Golgi apparatus, Kinoshita, Fujita, Maeda, 287
- pregnancy, aspartic peptidases, placenta, porcine, trophoblast, *Telugu, Green*, 725
- primitive metabolism, amino acid catalysts, energy acquiring central pathway, origins of life, thermophiles, Shimizu, Yamagishi, Kinoshita, Shida, Oshima, 383
- prolidase, collagen metabolism, integrin signalling, nickel, Miltky, Suražynski, Grabowska, Palka, 409
- prolyl-hydroxylase inhibitor, ethyl-3, 4-dihydroxybenzoate, haem oxygenase-1, hypoxia, hypoxia-inducible factor-1 $\alpha$ , Li, Takeda, Yokoyama, Shibahara, 643
- protein acetylation, glutamine synthetase, *Mycobacterium smegmatis*, polyphenolic acetate, transacetylase, Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnai, Kumar, Bose, Saluja, Patkar, Parmar, Guru Raj, 709
- protein arginine methyltransferase, fragile X mental retardation protein, histone, myelin basic protein, protein lysine methyltransferase, Denman, 223
- protein arginine methyltransferases, dimethylarginines, human diploid fibroblasts,  $H_2O_2$ -induced premature senescence, replicative senescence, Lim, Lee, Lee, Oh, Kim, 523
- protein delivery, antibody-mediated targeting, bionanocapsule, insect cell expression system, ZZ domain, Kurata, Shishido, Muraoka, Tanaka, Ogino, Fukuda, Kondo, 701
- protein disulphide isomerase (PDI), bisphenol A, protein disulphide isomerase (PDI), dimethyl bisphenol A, chaperone activity, protein folding, Hashimoto, Okada, Imaoka, 335
- protein disulphide isomerase, ERp57, mitochondria, P5, single-chain antibody fragment, Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, Takahashi, Kikuchi, 187
- protein folding/unfolding,  $\alpha$ -momorcharin, fluorescence energy transfer, molten globule, time-resolved fluorescence depolarization, Fukunaga, Nishimoto, Otosu, Murakami, Yamashita, 457
- protein folding, artificial evolution, exon shuffling, functional complementation, module, Tsuji, Nagata, Yanagawa, 513
- protein folding, bisphenol A, protein disulphide isomerase (PDI), dimethyl bisphenol A, chaperone activity, Hashimoto, Okada, Imaoka, 335
- protein folding, CD, disulphide, selenium, UV, Iwaoka, Kumakura, Yoneda, Nakahara, Henmi, Aonuma, Nakatani, Tomoda, 121
- protein folding, *cis*-element, degradation, ER, transcription factor, Yamamoto, Suzuki, Wada, Okada, Yoshida, Kaufman, Mori, 477
- protein interactions, cell division, DivIVA, *Enterococcus faecalis*, mutagenesis, Rigden, Baier, Ramirez-Arcos, Liao, Wang, Dillon, 63
- protein kinase C $\alpha$ , HIF-1 $\alpha$  stabilization, HIF prolyl hydroxylase, recombinant PHD1, transition metal ions, Li, Takasaki, Satoh, Kimura, Yasumoto, Sogawa, 555
- protein lysine methyltransferase, fragile X mental retardation protein, histone, myelin basic protein, protein arginine methyltransferase, Denman, 223
- protein transduction, cationization, glutathione, glutathione S-transferase, polyethylenimine, Murata, Futami, Kitazoe, Yonehara, Nakanishi, Kosaka, Tada, Sakaguchi, Yagi, Seno, Huh, Yamada, 447
- proteoglycan, glycosyltransferase, heparan sulphate, hereditary multiple exostoses, tumour-suppressor gene, Nadanaka, Kitagawa, 7
- proteoliposome, baculovirus, gene expression, membrane fusion, membrane receptor, Fukushima, Mizutani, Imamura, Morino, Kobayashi, Okumura, Tsumoto, Yoshimura, 763
- prothrombinase, gene regulation, hfg12, nucleocapsid protein, SARS-CoV, Han, Yan, Huang, Yao, Wang, Xi, Li, Zhou, Hou, Luo, Ning, 51
- proton relay mechanism, activity-enhanced mutant, archaea, enzymatic kinetics, site-directed mutagenesis, Higashi, Tanimoto, Nishioka, Ishikawa, Taya, 77
- Ptpz, TrkA, NGF, dephosphorylation, neurite extension, Shintani, Noda, 259
- purification, antibody fragment, ceramic hydroxyapatite, high-performance liquid chromatography, monoclonal antibody, Moro, Yoshitake, Ogawa, Ichimura, 733
- pyruvate kinase, allosteric, AMP, crystal structure, ribose 5-phosphate, Suzuki, Ito, Shimizu-Ibuka, Sakai, 305
- R
- radical enzyme, adenosylcobalamin, coenzyme B<sub>12</sub>, diol dehydratase, mechanism-based inactivation, Toraya, Tamura, Watanabe, Yamanishi, Hieda, Mori, 437
- randomization, antibody library, biopanning, phage display, single-chain antibody, Yin, Ren, Zhu, Wang, Zhang, Huang, Yan, 591
- rat, CD44, gene expression, HA, intragraft fibroblast, Wu, Wang, Zhu, He, Barr, Klein, 571
- RD21, cleavage specificity, cysteine protease, germination, granulin domain, Kikuchi, Saika, Yuasa, Nagahama, Tsuji, 789
- recombinant PHD1, HIF-1 $\alpha$  stabilization, HIF prolyl hydroxylase, protein kinase C $\alpha$ , transition metal ions, Li, Takasaki, Satoh, Kimura, Yasumoto, Sogawa, 555
- refolding and serine hydroxymethyltransferase, autonomous folding domain, conserved domain, PLP-binding domain, Bhatt, Bhakuni, 295

- regulation, ATP synthase ( $F_1F_0$ -ATPase), IF<sub>1</sub> (ATPase inhibitor), mitochondria, pH sensing, *Ando, Ichikawa*, 547
- relaxation, backbone dynamics, ketosteroid isomerase, mutant, NMR, *Lee, Yoon, Jang, Kim, Cha, Hong, Choi, Lee*, 159
- replicative senescence, dimethylarginines, human diploid fibroblasts,  $H_2O_2$ -induced premature senescence, protein arginine methyltransferases, *Lim, Lee, Lee, Oh, Kim*, 523
- retinoic acid, HL60 cells, retinoylated protein, retinoylation,  $\alpha$ -actinin, *Kubo, Ohba, Takahashi*, 349
- retinoylated protein, HL60 cells, retinoic acid, retinoylation,  $\alpha$ -actinin, *Kubo, Ohba, Takahashi*, 349
- retinoylation, HL60 cells, retinoic acid, retinoylated protein,  $\alpha$ -actinin, *Kubo, Ohba, Takahashi*, 349
- ribose 5-phosphate, allosteric, AMP, crystal structure, pyruvate kinase, *Suzuki, Ito, Shimizu-Ibuka, Sakai*, 305
- ribosomal RNA, non-coding RNA, peptide nucleic acid, RNA isolation, transfer RNA, *Ohtsuki, Fujimoto, Kamimukai, Kumano, Kitamatsu, Sisido*, 415
- ribosomal stalk, elongation factors, GTPase-associated centre, ribosome, translation elongation, *Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, Uchiumi*, 665
- ribosome, elongation factors, GTPase-associated centre, ribosomal stalk, translation elongation, *Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, Uchiumi*, 665
- RNA interference, cell migration, MAP kinase, p38, scaffold protein, *Gantulga, Tuvshintugs, Endo, Takino, Sato, Murakami, Yoshioka*, 693
- RNA interference, fatty acid desaturase, fatty acid elongase, lipid metabolism, lifespan, ontogeny, *Horikawa, Nomura, Hashimoto, Sakamoto*, 149
- RNA isolation, non-coding RNA, peptide nucleic acid, ribosomal RNA, transfer RNA, *Ohtsuki, Fujimoto, Kamimukai, Kumano, Kitamatsu, Sisido*, 415
- rpsL* gene, single-stranded DNA fragment, gene correction, genetic engineering, nucleic acid therapeutics, *Kamiya, Uchiyama, Nakatsu, Tsuzuki, Harashima*, 431
- S
- S19 ribosomal protein, C5a, C5a receptor, monocytes, neutrophils, *Oda, Tokita, Ota, Li, Taniguchi, Nishino, Takagi, Yamamoto, Nishiura*, 371
- S2-P2 interaction, cathepsin K, hydroxyproline, species difference, substrate specificity, *Tada, Tsutsumi, Ishihara, Suzuki, Gohda, Teno*, 499
- SARS-CoV, gene regulation, hflg12, nucleocapsid protein, prothrombinase, *Han, Yan, Huang, Yao, Wang, Xi, Li, Zhou, Hou, Luo, Ning*, 51
- scaffold protein, cell migration, MAP kinase, p38, RNA interference, *Gantulga, Tuvshintugs, Endo, Takino, Sato, Murakami, Yoshioka*, 693
- selenium, CD, disulphide, protein folding, UV, *Iwaoka, Kumakura, Yoneda, Nakahara, Henmi, Aonuma, Nakatani, Tomoda*, 121
- self-assembly, antimicrobial peptides, micelles, PEGylation, peptides, *Zhang, Han, Lin, Wu, Yan*, 781
- semicarbazide-sensitive, amine oxidase, benzylamine, copper-containing, growth substrate, *Lee, Kim, Ro*, 107
- serine protease, 3C-like protease, catalytic triad, norovirus, serine-like cysteine protease, *Someya, Takeda, Wakita*, 771
- serine-like cysteine protease, 3C-like protease, catalytic triad, norovirus, serine protease, *Someya, Takeda, Wakita*, 771
- sialidase, cancer, diabetes, gangliosides, transmembrane signalling, *Miyagi, Wada, Yamaguchi, Hata, Shiozaki*, 279
- single-chain antibody fragment, ERp57, protein disulphide isomerase, mitochondria, P5, *Kimura, Horibe, Sakamoto, Shitara, Fujiwara, Komiya, Yamamoto, Hayano, Takahashi, Kikuchi*, 187
- single-chain antibody, antibody library, biopanning, phage display, randomization, *Yin, Ren, Zhu, Wang, Zhang, Huang, Yan*, 591
- site-directed mutagenesis, activity enhanced mutant, archaea, enzymatic kinetics, proton relay mechanism, *Higashi, Tanimoto, Nishioka, Ishikawa, Taya*, 77
- site-directed mutagenesis, electron microscopy, intermediate filament, vimentin, viscosity, *Gohara, Nishikawa, Takasaki, Ando*, 675
- smart bandage, carbon fibre, urate, uric acid, wound infection, *Sharp, Forsythe, Davis*, 87
- solubility, arginine, caffeine, coumarin, surface tension, *Hirano, Arakawa, Shiraki*, 363
- Sparus aurata*, glycolysis, kinetics, liver, 6-phosphofructo-1-kinase, *Mediavilla, Metón, Baanante*, 235
- species difference, cathepsin K, hydroxyproline, S2-P2 interaction, substrate specificity, *Tada, Tsutsumi, Ishihara, Suzuki, Gohda, Teno*, 499
- Sphingomonas chungbukensis DJ77*, extracellular polysaccharide, gene cloning, phosphoglucomutase, phosphomannomutase, synthesis, *Yoon, Park, Kim, Shin, Chong, Choi*, 507
- systematic conformational search, binding simulation, goose-type lysozyme, inverting enzyme, molecular dynamics simulation, *Hirakawa, Ochi, Kawahara, Kawamura, Torikata, Kuwara*, 753
- T
- thermophiles, amino acid catalysts, energy acquiring central pathway, origins of life, primitive metabolism, *Shimizu, Yamagishi, Kinoshita, Shida, Oshima*, 383
- thrombin, autoantigen, citrullination, fibrinogen, fibrin formation,

- Nakayama-Hamada, Suzuki, Furukawa, Yamada, Yamamoto*, 393  
 thymidylate kinase, enzyme kinetics, malaria, *Plasmodium falciparum*, *Kandeel, Kitade*, 245  
 time-resolved fluorescence depolarization,  $\alpha$ -momorcharin, fluorescence energy transfer, molten globule, protein folding/unfolding, *Fukunaga, Nishimoto, Ootosu, Murakami, Yamashita*, 457  
 tooth development, amelogenin, LAMP1, LAMP3, ameloblast, *Xu, Harada, Taniguchi*, 531  
 transacetylase, glutamine synthetase, *Mycobacterium smegmatis*, polyphenolic acetate, protein acetylation, *Gupta, Baghel, Bansal, Tyagi, Kumari, Saini, Ponnan, Kumar, Bose, Saluja, Pathkar, Parmar, Guru Raj*, 709  
 transcription, NF- $\kappa$ B, IKK, noraristreromycin, phosphorylation, *Asamitsu, Yamaguchi, Nakata, Hibi, Victoriano, Imai, Onozaki, Kitade, Okamoto*, 581  
 transcription factor, *cis*-element, degradation, ER, protein folding, *Yamamoto, Suzuki, Wada, Okada, Yoshida, Kaufman, Mori*, 477  
 transcriptional regulation, *c-jun, cis*-acting element, EMSA, positive regulatory factor, *Agarwal, Kumar, Gupta, Dixit*, 741  
 transfer RNA, non-coding RNA, peptide nucleic acid, ribosomal RNA, RNA isolation, *Ohtsuki, Fujimoto, Kamimukai, Kumano, Kitamatsu, Sisido*, 415  
 transition metal ions, HIF-1 $\alpha$  stabilization, HIF prolyl hydroxylase, protein kinase C $\alpha$ , recombinant PHD1, *Li, Takasaki, Satoh, Kimura, Yasumoto, Sogawa*, 555  
 translation elongation, elongation factors, GTPase-associated centre, ribosomal stalk, ribosome, *Nomura, Nakatsuchi, Sugita, Nomura, Kaminishi, Takemoto, Shirouzu, Miyoshi, Yokoyama, Hachimori, Uchiumi*, 665  
 transmembrane signalling, cancer, diabetes, gangliosides, sialidase, *Miyagi, Wada, Yamaguchi, Hata, Shiozaki*, 279  
 transport, citrate carrier, *Drosophila melanogaster*, metabolite transporter, mitochondria, *Carrisi, Madeo, Moretta, Dolce, Cenci, Cappello, Mazzeo, Iacopetta, Capobianco*, 389  
 TrkA, Ptp $\zeta$ , NGF, dephosphorylation, neurite extension, *Shintani, Noda*, 259  
 trophoblast, aspartic peptidases, placenta, porcine, pregnancy, *Telugu, Green*, 725  
 tumour-suppressor gene, glycosyltransferase, heparan sulphate, hereditary multiple exostoses, proteoglycan, *Nadanaka, Kitagawa*, 7  
 type V collagen fibrils, accumulation of collagen fibrils, cell cementing, cell–collagen interaction, clump formation, *Kihara, Imamura, Takemura, Mizuno, Adachi, Hayashi*, 625
- U
- ubiquitin E3 ligase,  $\beta$ -TrCP, circadian rhythm, F-box protein, knockout mouse, *Ohsaki, Oishi, Kozono, Nakayama, Nakayama, Ishida*, 609  
 urate, carbon fibre, smart bandage, uric acid, wound infection, *Sharp, Forsythe, Davis*, 87  
 urea, bovine serum albumin, bromophenol blue, denaturation, guanidine hydrochloride, *Halim, Kadir, Tayyab*, 33  
 urea, dimeric protein, equilibrium unfolding, ketosteroid isomerase, NMR, *Lee, Jang, Cha, Moon, Hong, Choi, Lee*, 215
- V
- uric acid, carbon fibre, smart bandage, urate, wound infection, *Sharp, Forsythe, Davis*, 87  
 UV, CD, disulphide, protein folding, selenium, *Iwaoka, Kumakura, Yoneda, Nakahara, Henmi, Aonuma, Nakatani, Tomoda*, 121
- W
- wound infection, carbon fibre, smart bandage, uric acid, *Sharp, Forsythe, Davis*, 87
- X
- X-ray crystallographic structure, enzyme activity, hen lysozyme, mutation analysis, stability, *Goto, Ohkuri, Shioi, Abe, Imoto, Ueda*, 619
- Z
- ZZ domain, antibody-mediated targeting, bionanocapsule, insect cell expression system, protein delivery, *Kurata, Shishido, Muraoka, Tanaka, Ogino, Fukuda, Kondo*, 701

# THE JOURNAL OF BIOCHEMISTRY

EDITED FOR  
THE JAPANESE BIOCHEMICAL SOCIETY  
**VOLUME 144, 2008**

## *EDITORIAL BOARD*

### *Editor-in-Chief*

Naoyuki TANIGUCHI (Suita)

### *Editors*

|                          |  |
|--------------------------|--|
| <i>JB Reviews</i>        | Sen-itiroh HAKOMORI (Seattle)<br>Atsushi MIYAJIMA (Tokyo)    |
| <i>Biochemistry</i>      | Gerald W. HART (Baltimore)<br>Seiki KURAMITSU (Toyonaka)     |
| <i>Molecular Biology</i> | Bettie Sue MASTERS (San Antonio)<br>Akemi SUZUKI (Hiratsuka) |
| <i>Cell</i>              | Walter NEUPERT (München)<br>Yoshihide TSUJIMOTO (Suita)      |
| <i>Biotechnology</i>     | Frank D. BÖHMER (Jena)<br>Kohei MIYAZONO (Tokyo)             |
|                          | Chris Y. H. TAN (Vancouver, Canada)<br>Takuya UEDA (Tokyo)   |

### *Managing Editors*

Ikuko HARA-NISHIMURA (Kyoto) Yoshinobu NAKANISHI (Kanazawa)

### *Associate Editors*

|                          |  |  |
|--------------------------|--|--|
| <i>JB Reviews</i>        | Anindya DUTTA (Charlottesville)<br>Tatsuro IRIMURA (Tokyo)<br>Shigeaki KATO (Tokyo)  | Hisao MASAI (Tokyo)<br>Hiroshi OHNO (Yokohama)   |
| <i>Biochemistry</i>      | Fumio ARISAKA (Yokohama)<br>Vytas A. BANKAITIS (Chapel Hill)<br>Junichi FUJII (Yamagata)<br>Yuji GOTO (Suita)<br>Koichi HONKE (Nankoku)<br>Shoichi ISHIURA (Tokyo)                     | Nobuo KAMIYA (Osaka)<br>Makoto KIMURA (Fukuoka)<br>Ken KITAJIMA (Nagoya)<br>Katsuyuki TANIZAWA (Ibaraki)<br>Masato UMEDA (Uji)<br>Yuriko YAMAGATA (Kumamoto) |
| <i>Molecular Biology</i> | Johannis P. KAMERLING (Utrecht)<br>Yukio FUJIKI (Fukuoka)<br>Kenji KOHNO (Ikoma)<br>Bok Luel LEE (Busan)<br>Shoko NISHIHARA (Hachioji)<br>Suk-Chul BAE (Gaesindong)                    | Takehiko YOKOMIZO (Fukuoka)<br>Pradman K. QASBA (Frederick)<br>Takashi SUDA (Kanazawa)<br>Takeshi TODO (Suita)   |
| <i>Cell</i>              | Nils BROSE (Gottingen)<br>Yutaka HATA (Tokyo)<br>Shigeki HIGASHIYAMA (Toon)<br>Takeshi IWATSUBO (Tokyo)<br>Akira KIKUCHI (Hiroshima)<br>Yo KIKUCHI (Toyohashi)<br>Sunghoon KIM (Seoul) | Eunjoon KIM (Daejeon)<br>Tohru KOZASA (Chicago)<br>Aristidis MOUSTAKAS (Uppsala)<br>Atsuko SEHARA-FUJISAWA (Kyoto)<br>Toshiyuki TAKAI (Sendai)               |
| <i>Biotechnology</i>     | Wlodzimierz J. KRZYZOSIAK (Poznan)<br>Keiko MIZUTA (Higashihiroshima)  | Ken-ichi NISHIYAMA (Tokyo)<br>Kouhei TSUMOTO (Kashiwa)<br>Kazuo YAMAMOTO (Tokyo)   |

## *Advisory Board*

### *Biochemistry*

Junken AOKI (Sendai)  
Jin Won CHO (Seoul)  
Catherine E. COSTELLO (Boston)  
Jeffrey D. ESKO (La Jolla)  
Jianguo GU (Sendai)  
Yann GUÉRARDÉL (Villeneuve d'Ascq)  
Robert S. HALTIWANGER (Stony Brook)  
Toshiharu HASE (Suita)  
Yasuhiro HASHIMOTO (Fukushima)  
Kihachiro HORIIKE (Otsu)  
Yoshizumi ISHINO (Fukuoka)  
Makoto ITO (Fukuoka)  
Kenji KADOMATSU (Nagoya)

### *Molecular Biology*

Masato ENARI (Tokyo)  
Toshiya ENDO (Nagoya)  
Masatoshi FUJITA (Tokyo)  
Tetsuro KOKUBO (Yokohama)  
Won-Jae LEE (Seoul)  
Roland LILL (Marburg)

### *Cell*

Tomoichiro ASANO (Hiroshima)  
Mitsunori FUKUDA (Sendai)  
Masato HASEGAWA (Tokyo)  
Thorsten HEINZEL (Jena)  
Hidenori ICHIRO (Tokyo)  
Yasuki ISHIZAKI (Maebashi)  
Bong-Kiun KAANG (Seoul)  
Dimitris KARDASSIS (Heraklion)

### *Biotechnology*

Toshihiko EKI (Toyohashi)  
Yoshihisa HAGIHARA (Ikeda)  
Jun HIRABAYASHI (Tsukuba)

Reiji KANNAGI (Nagoya)  
Shun-ichiro KAWABATA (Fukuoka)  
Ikuro KAWAGISHI (Koganei)  
Gota KAWAI (Narashino)  
Hiroshi KITAGAWA (Kobe)  
Masayasu KOJIMA (Kurume)  
Hiroti KONDO (Iizuka)  
Michiko KONNO (Tokyo)  
Yasunori KOZUTSUMI (Kyoto)  
Ryoji MASUI (Toyonaka)  
Catharina Taiko MIGITA (Yamaguchi)  
Toru NAKAYAMA (Sendai)  
Hisashi NARIMATSU (Tsukuba)

Katsuyoshi MIHARA (Fukuoka)  
Masayuki MIURA (Tokyo)  
Masamichi MURAMATSU (Kanazawa)  
Kazuhiro NAGATA (Kyoto)  
Kunihiro OHTA (Tokyo)  
Takashi OSUMI (Hyogo)

Michael KLAGSBURN (Boston)  
Hitoshi KUROSE (Fukuoka)  
Noboru MIZUSHIMA (Tokyo)  
Tatsushi MUTA (Sendai)  
Hideaki NAGASE (London)  
Koh-ichi NAGATA (Kasugai)  
Kazuhide NAKAYAMA (Kyoto)  
Hitoshi OHMORI (Okayama)

Mitsuhiro ITAYA (Tsuruoka)  
Yasushi KAWATA (Tottori)  
Katsumi MAENAKA (Fukuoka)

Takeshi NIKAWA (Tokushima)  
Haruko OGAWA (Tokyo)  
Toshihisa OHSHIMA (Fukuoka)  
Michael PIERCE (Athens)  
Yoshihiro SAMBONGI  
(Higashi-Hiroshima)  
Ryo TAGUCHI (Tokyo)  
Yoshinao WADA (Izumi)  
Keisuke WAKASUGI (Tokyo)  
Akihiko YOSHIMURA (Fukuoka)  
Tohru YOSHIMURA (Nagoya)  
Junn YANAGISAWA (Tsukuba)

Kazuhiro SAKAMAKI (Kyoto)  
Shigeomi SHIMIZU (Tokyo)  
Kaoru SUGASAWA (Kobe)  
Minoru TAKATA (Kyoto)  
Tohru YOSHIHISA (Nagoya)

Chie SAKANAKA  
(South San Francisco)  
Takuya SASAKI (Tokushima)  
Kiyotoshi SEKIGUCHI (Suita)  
Roger K. SUNAHARA (Ann Arbor)  
Kazuma TANAKA (Sapporo)  
Keiko UDAKA (Nankoku)  
Tamotsu YOSHIMORI (Suita)

Makoto MAKISHIMA (Tokyo)  
Tomoaki MATSUURA (Suita)  
Hiroshi UEDA (Tokyo)

COPYRIGHT, 2008 © BY THE JAPANESE BIOCHEMICAL SOCIETY

PUBLISHED

BY

THE JAPANESE BIOCHEMICAL SOCIETY

## CONTENTS OF VOLUME 144

**No. 1, July, 2008**

|  | PAGE   |
|--|--|
| <b>JB Minireviews—New Paradigm in Glycobiology</b>   |  |
| Biological Functions of Glycosyltransferase Genes Involved in <i>O</i> -fucose Glycan Synthesis  | T. Okajima, A. Matsuura and T. Matsuda 1   |
| Heparan Sulphate Biosynthesis and Disease  | S. Nadanaka and H. Kitagawa 7  |
| <b>Rapid Communication</b>   |  |
| Requirement of Ala Residues at <i>g</i> Position in Heptad Sequence of $\alpha$ -Helix-forming Peptide for Formation of Fibrous Structure                  | G. Aoki, T.K. Yamada, M. Arii, S. Kojima and T. Mizoguchi 15   |
| <b>Regular Papers</b>  |  |
| Chemical Modulation of the Chaperone Function of Human $\alpha$ A-Crystallin   | A. Biswas, S. Lewis, B. Wang, M. Miyagi, P. Santoshkumar, M.H. Gangadhariah and R.H. Nagaraj 21                                |
| Bromophenol Blue Binding as a Probe to Study Urea and Guanidine Hydrochloride Denaturation of Bovine Serum Albumin   | A.A.A. Halim, H.A. Kadir and S. Tayyab 33  |
| SUMO Assay with Peptide Arrays on Solid Support: Insights into SUMO Target Sites   | K. Schwamborn, P. Knipscheer, E. van Dijk, W.J. van Dijk, T.K. Sixma, R.H. Meloen and J.P.M. Langedijk 39                      |
| The Nucleocapsid Protein of SARS-CoV Induces Transcription of hfgl2 Prothrombinase Gene Dependent on C/EBP Alpha   | M. Han, W. Yan, Y. Huang, H. Yao, Z. Wang, D. Xi, W. Li, Y. Zhou, J. Hou, X. Luo and Q. Ning 51                                |
| Identification of the Coiled-coil Domains of <i>Enterococcus faecalis</i> DivIVA that Mediate Oligomerization and their Importance for Biological Function | M.D. Rigden, C. Baier, S. Ramirez-Arcos, M. Liao, M. Wang and J.-A.R. Dillon 63  |
| Investigating a Catalytic Mechanism of Hyperthermophilic L-Threonine Dehydrogenase from <i>Pyrococcus horikoshii</i>                                       | N. Higashi, K. Tanimoto, M. Nishioka, K. Ishikawa and M. Taya 77   |
| Carbon Fibre Composites: Integrated Electrochemical Sensors for Wound Management   | D. Sharp, S. Forsythe and J. Davis 87  |
| Chemical and Apoptotic Properties of Hydroxy-Ceramides Containing Long-Chain Bases with Unusual Alkyl Chain Lengths  | M. Kyogashima, K. Tadano-Aritomi, T. Aoyama, A. Yusa, Y. Goto, K. Tamiya-Koizumi, H. Ito, T. Murate, R. Kannagi and A. Hara 95 |
| Purification and Characterization of a Copper-Containing Amine Oxidase from <i>Mycobacterium</i> Sp. Strain JC1 DSM 3803 Grown on Benzylamine              | H.-I. Lee, Y.M. Kim and Y.T. Ro 107  |
| Humanization of an Anti-CD34 Monoclonal Antibody by Complementarity-determining Region Grafting Based on Computer-assisted Molecular Modelling             | S. Hou, B. Li, L. Wang, W. Qian, D. Zhang, X. Hong, H. Wang and Y. Guo 115   |

|   |  |     |
|---|--|-----|
| Direct Observation of Conformational Folding Coupled with Disulphide Rearrangement by Using a Water-soluble Selenoxide Reagent—A Case of Oxidative Regeneration of Ribonuclease A under Weakly Basic Conditions | M. Iwaoka, F. Kumakura, M. Yoneda, T. Nakahara, K. Henmi, H. Aonuma, H. Nakatani and S. Tomoda | 121 |
|---|--|-----|

No. 2, August, 2008

### JB Minireviews—New Paradigm in Glycobiology

|  |                |     |
|--|----------------|-----|
| Simple Primary Structure, Complex Turnover Regulation and Multiple Roles of Hyaluronan | N. Itano       | 131 |
| Concept, Strategy and Realization of Lectin-based Glycan Profiling                     | J. Hirabayashi | 139 |

### Regular Papers

|  |  |     |
|--|--|-----|
| Elongation and Desaturation of Fatty Acids are Critical in Growth, Lipid Metabolism and Ontogeny of <i>Caenorhabditis elegans</i>                          | M. Horikawa, T. Nomura, T. Hashimoto and K. Sakamoto   | 149 |
| <sup>15</sup> N NMR Relaxation Studies of Y14F Mutant of Ketosteroid Isomerase: The Influence of Mutation on Backbone Mobility                             | H.J. Lee, Y.J. Yoon, D.S. Jang, C. Kim, H.J. Cha, B.H. Hong, K.Y. Choi and H.C. Lee  | 159 |
| Susceptibilities of Phospholipid Membranes Containing Cholesterol or Ergosterol to Gramicidin and its Derivative Incorporated in Lysophospholipid Micelles | N. Yoshida, T. Mita and M. Onda  | 167 |
| Modulation of Glucose Uptake in a Human Choriocarcinoma Cell Line (BeWo) by Dietary Bioactive Compounds and Drugs of Abuse                                 | J.R. Araújo, P. Gonçalves and F. Martel  | 177 |
| Evidence for Mitochondrial Localization of P5, a Member of the Protein Disulphide Isomerase Family   | T. Kimura, T. Horibe, C. Sakamoto, Y. Shitara, F. Fujiwara, T. Komiya, A. Yamamoto, T. Hayano, N. Takahashi and M. Kikuchi | 187 |
| Microglial Cell Death Induced by Glycated Bovine Serum Albumin: Nitric Oxide Involvement   | M.R. Khazaei, M. Habibi-Rezaei, F. Karimzadeh, A.A. Moosavi-Movahedi, A.A. Sarrafnejhad, F. Sabouni and M. Bakhti          | 197 |
| Characterization and Secondary Structure Analysis of Endostatin Covalently Modified by Polyethylene Glycol and Low Molecular Weight Heparin                | H. Tan, S. Yang, Y. Feng, C. Liu, J. Cao, G. Mu and F. Wang  | 207 |
| NMR Studies on the Equilibrium Unfolding of Ketosteroid Isomerase by Urea  | H.J. Lee, D.S. Jang, H.J. Cha, H.S. Moon, B.H. Hong, K.Y. Choi and H.C. Lee  | 215 |
| Protein Methyltransferase Activities in Commercial <i>In vitro</i> Translation Systems   | R.B. Denman  | 223 |
| Purification and Kinetic Characterization of 6-Phosphofructo-1-kinase from the Liver of Gilthead Sea Bream ( <i>Sparus aurata</i> )                        | D. Mediavilla, I. Metón and I.V. Baanante  | 235 |

|   |   |     |
|---|---|-----|
| Molecular Characterization, Heterologous Expression and Kinetic Analysis of Recombinant <i>Plasmodium falciparum</i> Thymidylate Kinase                         | M. Kandeel and Y. Kitade  | 245 |
| Nicotine Suppresses Tunicamycin-Induced, But Not Thapsigargin-Induced, Expression of GRP78 during ER Stress-Mediated Apoptosis in PC12 Cells                    | H. Sasaya, T. Utsumi, K. Shimoke, H. Nakayama, Y. Matsumura, K. Fukunaga and T. Ikeuchi | 251 |
| Protein Tyrosine Phosphatase Receptor Type Z Dephosphorylates TrkA Receptors and Attenuates NGF-dependent Neurite Outgrowth of PC12 Cells                       | T. Shintani and M. Noda   | 259 |
| An <i>O</i> <sup>6</sup> -methylguanine-DNA Methyltransferase-like Protein from <i>Thermus thermophilus</i> Interacts with a Nucleotide Excision Repair Protein | R. Morita, N. Nakagawa, S. Kuramitsu and R. Masui                                       | 267 |

No. 3, September, 2008

**JB Minireviews—New Paradigm in Glycobiology**

Plasma Membrane-associated Sialidase as a Crucial Regulator of Transmembrane Signalling

T. Miyagi, T. Wada, K. Yamaguchi, K. Hata and K. Shiozaki 279

Biosynthesis, Remodelling and Functions of Mammalian GPI-anchored Proteins: Recent Progress

T. Kinoshita, M. Fujita and Y. Maeda 287

**Regular Papers**

Characterization of Pyridoxal 5'-Phosphate-Binding Domain and Folding Intermediate of *Bacillus subtilis* Serine Hydroxymethyltransferase: an Autonomous Folding Domain

A.N. Bhatt and V. Bhakuni 295

Crystal Structure of Pyruvate Kinase from *Geobacillus stearothermophilus*

K. Suzuki, S. Ito, A. Shimizu-Ibuka and H. Sakai 305

Krüppel-like Factor 4 is Required for the Expression of Vascular Smooth Muscle Cell Differentiation Marker Genes Induced by All-Trans Retinoic Acid

C. Wang, M. Han, X.-M. Zhao and J.-K. Wen 313

Important Amino Acid Residues that Confer CYP2C19 Selective Activity to CYP2C9

Y. Wada, M. Mitsuda, Y. Ishihara, M. Watanabe, M. Iwasaki and S. Asahi 323

Interaction between Bisphenol Derivatives and Protein Disulphide Isomerase (PDI) and Inhibition of PDI Functions: Requirement of Chemical Structure for Binding to PDI

S. Hashimoto, K. Okada and S. Imaoka 335

ATP-binding on Fibroblast Growth Factor 2 Partially Overlaps with the Heparin-binding Domain

K. Rose, S. Pallast, S. Klumpp and J. Kriegstein 343

Proteins in Human Myeloid Leukemia Cell Line HL60 Reacting with Retinoic Acid Monoclonal Antibodies

Y. Kubo, T. Ohba and N. Takahashi 349

Valproic Acid Inhibits the Growth of Cervical Cancer both *In Vitro* and *In Vivo*

S. Sami, N. Höti, Han-Mei Xu, Z. Shen and X. Huang 357

|  |   |     |
|--|---|-----|
| Arginine Increases the Solubility of Coumarin: Comparison with Salting-in and Salting-out Additives  | A. Hirano, T. Arakawa and K. Shiraki  | 363 |
| Agonistic and Antagonistic Effects of C5a-Chimera Bearing S19 Ribosomal Protein Tail Portion on the C5a Receptor of Monocytes and Neutrophils, Respectively                          | Y. Oda, K. Tokita, Y. Ota, Y. Li, K. Taniguchi, N. Nishino, K. Takagi, T. Yamamoto and H. Nishiura              | 371 |
| Prebiotic Origin of Glycolytic Metabolism: Histidine and Cysteine can Produce Acetyl CoA from Glucose via Reactions Homologous to Non-phosphorylated Entner-Doudoroff Pathway        | M. Shimizu, A. Yamagishi, K. Kinoshita, Y. Shida and T. Oshima  | 383 |
| Identification of the <i>Drosophila melanogaster</i> Mitochondrial Citrate Carrier: Bacterial Expression, Reconstitution, Functional Characterization and Developmental Distribution | C. Carrisi, M. Madeo, P. Morciano, V. Dolce, G. Cenci, A.R. Cappello, G. Mazzeo, D. Iacopetta and L. Capobianco | 389 |
| Citrullinated Fibrinogen Inhibits Thrombin-catalysed Fibrin Polymerization   | M. Nakayama-Hamada, A. Suzuki, H. Furukawa, R. Yamada and K. Yamamoto   | 393 |
| Gene Expression Profiling of Human Mesenchymal Stem Cells for Identification of Novel Markers in Early- and Late-Stage Cell Culture  | S. Tanabe, Y. Sato, T. Suzuki, K. Suzuki, T. Nagao and T. Yamaguchi   | 399 |
| Prolidase Dependent Inhibition of Collagen Biosynthesis in Chinese Hamster Ovary Cells   | W. Miltyk, A. Surażyński, J. Grabowska and J.A. Pałka   | 409 |

No. 4, October, 2008

### Rapid Communication

Isolation of Small RNAs using Biotinylated PNAs

T. Ohtsuki, T. Fujimoto, M. Kamimukai, C. Kumano, M. Kitamatsu and M. Sisido

### Regular Papers

Genomic and Expression Analysis of Canine Calcitonin Receptor-stimulating Peptides and Calcitonin/Calcitonin Gene-related Peptide

T. Osaki, T. Katafuchi and N. Minamino

Effects of Target Sequence and Sense versus Anti-sense Strands on Gene Correction with Single-stranded DNA Fragments

H. Kamiya, M. Uchiyama, Y. Nakatsu, T. Tsuzuki and H. Harashima

Mechanism-based Inactivation of Coenzyme B<sub>12</sub>-dependent Diol Dehydratase by 3-Unsaturated 1,2-Diols and Thioglycerol

T. Toraya, N. Tamura, T. Watanabe, M. Yamanishi, N. Hieda and K. Mori

Intracellular Delivery of Glutathione S-transferase-fused Proteins into Mammalian Cells by Polyethylenimine-Glutathione Conjugates

H. Murata, J. Futami, M. Kitazoe, T. Yonehara, H. Nakanishi, M. Kosaka, H. Tada, M. Sakaguchi, Y. Yagi, M. Seno, N.-h Huh and H. Yamada

The Unfolding of  $\alpha$ -Momorcharin Proceeds Through the Compact Folded Intermediate

Y. Fukunaga, E. Nishimoto, T. Otosu, Y. Murakami and S. Yamashita

|  |   |     |
|--|---|-----|
| Computational and Experimental Analyses of Furcatin Hydrolase for Substrate Specificity Studies of Disaccharide-specific Glycosidases                                    | H. Daiyasu, H. Saino, H. Tomoto, M. Mizutani, K. Sakata and H. Toh              | 467 |
| Human HRD1 Promoter Carries a Functional Unfolded Protein Response Element to Which XBP1 but not ATF6 Directly Binds   | K. Yamamoto, N. Suzuki, T. Wada, T. Okada, H. Yoshida, R.J. Kaufman and K. Mori | 477 |
| A Plasma Membrane-associated Protein of <i>Arabidopsis thaliana</i> AtPCaP1 Binds Copper Ions and Changes Its Higher Order Structure                                     | N. Nagasaki-Takeuchi, M. Miyano and M. Maeshima                                 | 487 |
| Species Differences Between Human and Rat in the Substrate Specificity of Cathepsin K  | S. Tada, K. Tsutsumi, H. Ishihara, K. Suzuki, K. Gohda and N. Teno              | 499 |
| Cloning and Characterization of Phosphoglucomutase and Phosphomannomutase Derived from <i>Sphingomonas chungbukensis</i> DJ77  | S.-S. Yoon, S.-H. Park, Y.-C. Kim, M. Shin, C.-K. Chong and J.-D. Choi          | 507 |
| N- and C-terminal Fragments of a Globular Protein Constructed by Elongation of Modules as a Units Associated for Functional Complementation                              | T. Tsuji, T. Nagata and H. Yanagawa   | 513 |
| Down-regulation of Asymmetric Arginine Methylation During Replicative and H <sub>2</sub> O <sub>2</sub> -induced Premature Senescence in WI-38 Human Diploid Fibroblasts | Y. Lim, E. Lee, J. Lee, S. Oh and S. Kim  | 523 |
| The Effects of LAMP1 and LAMP3 on M180 Amelogenin Uptake, Localization and Amelogenin mRNA Induction by Amelogenin Protein   | L. Xu, H. Harada and A. Taniguchi   | 531 |
| Identification of E1AF as a Target Gene of E2F1-induced Apoptosis in Response to DNA Damage  | Y. Wei, D. Liu, Y. Ge, F. Zhou, J. Xu, H. Chen, J. Gu and J. Jiang              | 539 |
| Glutamic Acid in the Inhibitory Site of Mitochondrial ATPase Inhibitor, IF <sub>1</sub> , Participates in pH Sensing in Both Mammals and Yeast                           | C. Ando and N. Ichikawa   | 547 |

No. 5, November, 2008

**Regular Papers**

|  |   |     |
|--|---|-----|
| Expression, Purification and Characterization of Human PHD1 in <i>Escherichia coli</i>   | X.Y. Li, C. Takasaki, Y. Satoh, S. Kimura, K.-i. Yasumoto and K. Sogawa | 555 |
| Contribution of Complement Component C3 and Complement Receptor Type 3 to Carbohydrate-dependent Uptake of Oligomannose-coated Liposomes by Peritoneal Macrophages | Y. Abe, Y. Kuroda, N. Kuboki, M. Matsushita, N. Yokoyama and N. Kojima  | 563 |
| Genetic Modulation of CD44 Expression by Intragraft Fibroblasts  | G.D. Wu, H. Wang, H. Zhu, Y. He, M.L. Barr and A.S. Klein               | 571 |

|   |  |     |
|---|--|-----|
| Inhibition of Human Immunodeficiency Virus Type 1 Replication by Blocking I $\kappa$ B Kinase with Noraristeromycin   | K. Asamitsu, T. Yamaguchi,<br>K. Nakata, Y. Hibi, A.-F.B. Victoriano,<br>K. Imai, K. Onozaki, Y. Kitade and<br>T. Okamoto                                | 581 |
| Construction of a Fully Synthetic Human scFv Antibody Library with CDR3 Regions Randomized by a Split-Mix-Split Method and Its Application  | C.-C. Yin, L.-L. Ren, L.-L. Zhu,<br>X.-B. Wang, Z. Zhang, H.-L. Huang<br>and X.-Y. Yan   | 591 |
| Saturated Fatty Acids Inhibit Hepatic Insulin Action by Modulating Insulin Receptor Expression and Post-receptor Signalling   | M.W. Ruddock, A. Stein, E. Landaker,<br>J. Park, R.C. Cooksey, D. McClain and<br>M.-E. Patti   | 599 |
| The Role of $\beta$ -TrCP1 and $\beta$ -TrCP2 in Circadian Rhythm Generation by Mediating Degradation of Clock Protein PER2   | K. Ohsaki, K. Oishi, Y. Kozono,<br>K. Nakayama, K.I. Nakayama and<br>N. Ishida   | 609 |
| Crystal Structures of K33 Mutant Hen Lysozymes with Enhanced Activities   | T. Goto, T. Ohkuri, S. Shioi, Y. Abe,<br>T. Imoto and T. Ueda  | 619 |
| Intercellular Accumulation of Type V Collagen Fibrils in Accordance with Cell Aggregation   | T. Kihara, Y. Imamura, Y. Takemura,<br>K. Mizuno, E. Adachi and T. Hayashi   | 625 |
| Cell-free Synthesis of the Torque-Generating Membrane Proteins, PomA and PomB, of the Na <sup>+</sup> -driven Flagellar Motor in <i>Vibrio alginolyticus</i>                                    | H. Terashima, R. Abe-Yoshizumi,<br>S. Kojima and M. Homma  | 635 |
| A Prolyl-hydroxylase Inhibitor, Ethyl-3,4-dihydroxybenzoate, Induces Haeme Oxygenase-1 Expression in Human Cells Through a Mechanism Independent of Hypoxia-inducible Factor-1 $\alpha$         | B. Li, K. Takeda, S. Yokoyama and<br>S. Shibahara  | 643 |
| The Nudix Hydrolase 7 is an Acyl-CoA Diphosphatase Involved in Regulating Peroxisomal Coenzyme A Homeostasis  | S.-J. Reilly, V. Tillander, R. Ofman,<br>S.E.H. Alexson and M.C. Hunt  | 655 |
| Biochemical Evidence for the Heptameric Complex L10(L12) <sub>6</sub> in the <i>Thermus thermophilus</i> Ribosome: <i>In Vitro</i> Analysis of its Molecular Assembly and Functional Properties | T. Nomura, M. Nakatsuchi, D. Sugita,<br>M. Nomura, T. Kaminishi,<br>C. Takemoto, M. Shirouzu, T. Miyoshi,<br>S. Yokoyama, A. Hachimori and<br>T. Uchiumi | 665 |
| Role of the Aromatic Residues in the Near-amino Terminal Motif of Vimentin in Intermediate Filament Assembly <i>In Vitro</i>  | R. Gohara, S. Nishikawa, Y. Takasaki<br>and S. Ando  | 675 |
| Expression and Secretion of <i>N</i> -acylethanolamine-hydrolysing Acid Amidase in Human Prostate Cancer Cells  | J. Wang, L.-Y. Zhao, T. Uyama,<br>K. Tsuboi, X.-X. Wu, Y. Kakehi and<br>N. Ueda  | 685 |
| <b>Erratum</b>  |  | 691 |

No. 6, December, 2008

**Regular Papers**

|  |  |     |
|--|--|-----|
| The Scaffold Protein c-Jun NH <sub>2</sub> -Terminal Kinase-associated Leucine Zipper Protein Regulates Cell Migration through Interaction with the G Protein G <sub>α13</sub> | D. Gantulga, B. Tuvshintugs, Y. Endo, T. Takino, H. Sato, S. Murakami and K. Yoshioka  | 693 |
| Specific Protein Delivery to Target Cells by Antibody-displaying Bionanocapsules   | N. Kurata, T. Shishido, M. Muraoka, T. Tanaka, C. Ogino, H. Fukuda and A. Kondo  | 701 |
| Establishment of Glutamine Synthetase of <i>Mycobacterium smegmatis</i> as a Protein Acetyltransferase utilizing Polyphenolic Acetates as the Acetyl Group Donors              | G. Gupta, A.S. Baghel, S. Bansal, T.K. Tyagi, R. Kumari, N.K. Saini, P. Ponnai, A. Kumar, M. Bose, D. Saluja, S.A. Patkar, V.S. Parmar and H. Guru Raj | 709 |
| Effects of Dimethyl Sulphoxide and Dexamethasone on mRNA Expression of Myogenesis- and Muscle Proteolytic System-related Genes in Mouse Myoblastic C2C12 Cells                 | M. Nishimura, M. Mikura, K. Hirasaka, Y. Okumura, T. Nikawa, Y. Kawano, M. Nakayama and M. Ikeda   | 717 |
| Characterization of the Peptidase Activity of Recombinant Porcine Pregnancy-associated Glycoprotein-2  | B.P.V.L. Telugu and J.A. Green   | 725 |
| Single-step Purification of Pepsin-derived Monoclonal Antibody Fragments from Crude Murine Ascitic Fluids by Ceramic Hydroxyapatite High-performance Liquid Chromatography     | A. Moro, T. Yoshitake, T. Ogawa and T. Ichimura  | 733 |
| Identification and Characterization of a Positive Regulatory cis-element Within the Upstream Region of <i>c-jun</i>  | S. Agarwal, R. Kumar, P. Gupta and A. Dixit  | 741 |
| Catalytic Reaction Mechanism of Goose Egg-white Lysozyme by Molecular Modelling of Enzyme–Substrate Complex  | H. Hirakawa, A. Ochi, Y. Kawahara, S. Kawamura, T. Torikata and S. Kuhara  | 753 |
| Development of a Novel Preparation Method of <i>Recombinant</i> Proteoliposomes Using Baculovirus Gene Expression Systems  | H. Fukushima, M. Mizutani, K. Imamura, K. Morino, J. Kobayashi, K. Okumura, K. Tsumoto and T. Yoshimura  | 763 |
| Saturation Mutagenesis reveals that GLU54 of Norovirus 3C-like Protease is not Essential for the Proteolytic Activity  | Y. Someya, N. Takeda and T. Wakita   | 771 |
| Modification of Antimicrobial Peptide with Low Molar Mass Poly(ethylene glycol)  | G. Zhang, B. Han, X. Lin, X. Wu and H. Yan   | 781 |
| Isolation and Biochemical Characterization of Two Forms of RD21 from Cotyledons of Daikon Radish ( <i>Raphanus sativus</i> )   | Y. Kikuchi, H. Saika, K. Yuasa, M. Nagahama and A. Tsuji   | 789 |

## CONTENTS Rearranged According to Subject Categories, Vol. 144, No. 6

### BIOCHEMISTRY

#### Biochemistry General

Establishment of Glutamine Synthetase of *Mycobacterium smegmatis* as a Protein Acetyltransferase utilizing Polyphenolic Acetates as the Acetyl Group Donors

G. Gupta, A.S. Baghel, S. Bansal, T.K. Tyagi, R. Kumari, N.K. Saini, P. Ponnan, A. Kumar, M. Bose, D. Saluja, S.A. Patkar, V.S. Parmar and H. Guru Raj 709

#### Enzymology

Catalytic Reaction Mechanism of Goose Egg-white Lysozyme by Molecular Modelling of Enzyme–Substrate Complex

H. Hirakawa, A. Ochi, Y. Kawahara, S. Kawamura, T. Torikata and S. Kuhara 753

#### Biochemistry of Proteolysis

Characterization of the Peptidase Activity of Recombinant Porcine Pregnancy-associated Glycoprotein-2

B.P.V.L. Telugu and J.A. Green 725

Saturation Mutagenesis reveals that GLU54 of Norovirus 3C-like Protease is not Essential for the Proteolytic Activity

Y. Someya, N. Takeda and T. Wakita 771

Isolation and Biochemical Characterization of Two Forms of RD21 from Cotyledons of Daikon Radish (*Raphanus sativus*)

Y. Kikuchi, H. Saika, K. Yuasa, M. Nagahama and A. Tsuji 789

#### Analytical Biochemistry

Single-step Purification of Pepsin-derived Monoclonal Antibody Fragments from Crude Murine Ascitic Fluids by Ceramic Hydroxyapatite High-performance Liquid Chromatography

A. Moro, T. Yoshitake, T. Ogawa and T. Ichimura 733

### MOLECULAR BIOLOGY

#### Gene Expression

Effects of Dimethyl Sulphoxide and Dexamethasone on mRNA Expression of Myogenesis- and Muscle Proteolytic System-related Genes in Mouse Myoblastic C2C12 Cells

M. Nishimura, M. Mikura, K. Hirasaka, Y. Okumura, T. Nikawa, Y. Kawano, M. Nakayama and M. Ikeda 717

Identification and Characterization of a Positive Regulatory *cis*-element Within the Upstream Region of *c-jun*

S. Agarwal, R. Kumar, P. Gupta and A. Dixit 741

### CELL

#### Receptors and Signal Transduction

The Scaffold Protein c-Jun NH<sub>2</sub>-Terminal Kinase-associated Leucine Zipper Protein Regulates Cell Migration through Interaction with the G Protein G<sub>α13</sub>

D. Gantulga, B. Tuvshintugs, Y. Endo, T. Takino, H. Sato, S. Murakami and K. Yoshioka 693

### BIOTECHNOLOGY

#### Biotechnology General

Specific Protein Delivery to Target Cells by Antibody-displaying Bionanocapsules

N. Kurata, T. Shishido, M. Muraoka, T. Tanaka, C. Ogino, H. Fukuda and A. Kondo 701

Development of a Novel Preparation Method of *Recombinant* Proteoliposomes Using Baculovirus Gene Expression Systems

H. Fukushima, M. Mizutani, K. Imamura, K. Morino, J. Kobayashi, K. Okumura, K. Tsumoto and T. Yoshimura 763

#### Synthetic Peptides and Oligonucleotides

Modification of Antimicrobial Peptide with Low Molar Mass Poly(ethylene glycol)

G. Zhang, B. Han, X. Lin, X. Wu and H. Yan 781