

Poster Session (March 14th, March 15th)

Proton Transport (Poster Area 1)

A1P1 Expression patterns of a voltage-gated proton channel, VSOP

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A1P2 Cloning of a voltage-gated proton channel from an echinoderm and a primitive metazoan

Thomas McCormack and Yasushi Okamura (Section of Developmental Neurophysiology, National Institute for Physiologic Sciences)

A1P3 Molecular mechanisms of voltage-gated proton channel that consists only of the voltage-sensor domain

Tatsuki Kurokawa^{1,2,\$}, Mari Sasaki^{1,2,3}, Masahiro Takagi^{1,2} Yasushi Okamura^{1,2,3} (¹Section of Developmental Neurophysiology, Okazaki Institute for Integrative Bioscience, ²National Institute for Physiological Science, ^{1,2}National Institutes of Natural Sciences, ³Graduate University for Advanced Studies \$ Partnership Research Fellow for the project, “Frontiers of Membrane Protein Research”)

A1P4 Halide-bound D212N mutant protein of Bacteriorhodopsin

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A1P5 FTIR studies of the light-driven chloride pump from pharaonis Halorhodopsin

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A1P6 Characterization of proton conducting pathway in stator complex MotA/B of the bacterial proton-driven flagellar motor

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A1P7 Quantum chemical study of mechanism of proton transfer via peptide bond -A theoretical approach to a novel pathway of proton translocation of cytochrome c oxidase-

Yu Takano and Haruki Nakamura (Institute for Protein Research, Osaka University, Japan)

A1P8 Design features of long distance proton transport systems in biology

Colin Wraight (Department of Biochemistry, and Center for Biophysics & Computational Biology, University of Illinois at Urbana-Champaign, USA.)

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Structure and Mechanisms of Other Membrane Proteins (Poster Area 2)

A2P1 Mechanism of NBD gating engine common in ABC transporters

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A2P2 Molecular cloning of a putative membrane ecdysteroid receptor from the crustacean, *Daphnia magna*

Yasuhiko Kato, Takashi Baba, Kaoru Kobayashi, Yoshinao Katsu, Hajime Watanabe, Taisen Iguchi (Okazaki Institute for Integrative Bioscience, National Institute for Basic Biology, National Institutes of Natural Sciences, Japan)

A2P3 Hydrogen-bonding network in *Anabaena* sensory rhodopsin

Akira Kawanabe¹, Yuji Furutani^{1, 2}, Kwang-Hwan Jung³, and Hideki Kandori^{1,2} (¹Nagoya Institute of Technology, ²CREST/JST, Japan, ³Sogang University)

A2P4 Structural changes of an archaeal rhodopsin for light signal transduction

Yuji Furutani and Hideki Kandori (Department of Materials Science and Engineering, Nagoya Institute of Technology, Nagoya, Japan.)

A2P5 Mono-unsaturated fatty acid modification of Wnt protein: Its role in Wnt secretion

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A2P6 Voltage-sensor movement of VSP is slowed under activated state of the phosphatase domain

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A2P7 Structure, dynamics, and position-resolved free energy of amino acid solvation in membranes from molecular simulation

Anna Johansson & Erik Lindahl

(Center for Biomembrane Research, Stockholm University, Sweden)

A2P8 VSP is a voltage-activated PI(4,5)P₂ phosphatase that is conserved among chordates

Yoshimichi Murata^{1,2}, Hirohide Iwasaki^{1,2,3}, Toshiko Gamano^{1,2,3}, Md Israil Hossain^{1,2,3}, Takehiko Sasaki⁴, Yasushi Okamura^{1,2,3} (¹Section of Developmental Neurophysiology, Okazaki Institute for Integrative Bioscience, ²National Institute for Physiological Science, National Institutes of Natural Sciences (NINS), ³Graduate University for Advanced Studies, ⁴Department of Pathology and Immunology, Akita University School of Medicine, Japan)

A2P9 Structure of tightly membrane-bound mastoparan-X determined by solid-state NMR

Yasuto Todokoro¹, Erisa Harada¹, Ikuko Yumen¹, Toshiyuki Kohno², Kaori Wakamatsu³, Toshimichi Fujiwara¹, Hideo Akutsu¹ (¹Institute for Protein Research, Osaka University, ²Mitsubishi Kagaku Institute of Life Sciences, ³Department of Biochemical and Chemical Engineering, Gunma University, Japan)

A2P10 Effects of surface on fibril morphology in the self-assembly of amyloid b (1-40) into amyloid

Hisashi Yagi¹, Tadato Ban^{1,2}, Kenichi Morigaki², Hironobu Naiki³ and Yuji Goto¹ (¹ Institute for Protein Research, Osaka University, and CREST/JST, ² National Institute of Advanced Industrial Science and Technology, ³ Faculty of Medical science, University of Fukui and CREST/JST))

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Genome, Biology and Physiology (Poster Area 3)

A3P1 Directional cell movement in an electric field

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A3P2 BOSS/SEV signaling from germline to soma specificity the germline stem cell niche in *Drosophila* male gonads

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A3P3 Signal transmission for temperature from thermo TRP-expressed keratinocytes to sensory nerve endings.

Takaaki Sokabe¹, Sravan Mandadi¹, Tomoko Fukumi-Tominaga^{1,2}, Koji Shibasaki^{1,2}, Makoto Suzuki³, Atsuko Mizuno³, Makoto Tominaga^{1,2} (¹OIIB, Cell signaling, ²Graduate Univ. for Advanced study, Dept. physiol sci., ³Jichi med school, Dept. Pharmacol., Japan)

A3P4 The molecular mechanism of sea urchin sperm chemotaxis.

Takuya Nishigaki, Adan Guerrero, Chris Wood, Alberto Darszon

(Dept. Developmental Genetics and Molecular Physiology, Institute of Biotechnology, National Autonomous University of Mexico (UNAM), Mexico)

A3P5 Membrane potential of Ca²⁺ store generates Ca²⁺ oscillation

Masayuki Yamashita, Miho Sugioka, Yoichi Ogawa

(Department of Physiology I, Nara Medical University, Kashihara, Japan)

A3P6 Oxygen sensors in bacterial chemotaxis: diversity of active site and oxygen sensing mechanism

Shiro Yoshioka, Hideaki Yoshimura, and Shigetoshi Aono

(Okazaki Institute for Integrative Bioscience, National Institutes of Natural Sciences, Japan)

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A3P7 The effects of body temperature on hippocampal neural activity: control of resting membrane potential through TRPV4 activation

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A3P8 Developmental expression of avian VSP (Gallus gallus voltage-sensor containing phosphatase)

Shinji Yamaguchi, Hiroko Kamigaki, Tatsuya Takano and Koichi J.

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A3P9 Function of cephalopod glutamate receptors in plastic and non-plastic synapses

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Structure and Mechanisms of Ion Channels (Poster Area 4)

A4P1 3D structure of TRPC3 channel: TRPC3 has a large internal chamber surrounded by signal sensing antennas

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A4P2 Single particle analysis of purinergic P2X₂ receptor

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A4P3 Association of auxiliary subunit KCNE1 alters molecular environment of the voltage-sensing domain of KCNQ1 channel

Koichi Nakajo¹; Yoshihiro Kubo^{1,2} (1Div Biophys & Neurobiol, NIPS, Okazaki; 2SORST, JST, Kawaguchi, Japan)

A4P4 Structure of the transmembrane-juxtamembrane sequence of EGFR and its interaction with Ca²⁺ / calmodulin

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A4P5 Ancient intron insertion sites and palindromic genomic duplication evolutionally shapes an elementally functioning membrane protein family.

Motoko Tanaka-Kunishima and Kunitaro Takahashi

(Department of Medical Physiology, Meiji Pharmaceutical University, Japan)

A4P6 How should we interpret three-dimensional images of multi-pore ion channels?

Shigeru Yoshida (Department of Physiology, School of Science and Engineering, Kinki University, Japan)

A4P7 Lipid membrane array technology for membrane protein research

Hiroaki Suzuki¹, Kazuhito Tabata², Hiroyuki Noji², Shoji Takeuchi^{1,3}

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A4P8 Evidence for the direct binding of spermine to the intracellular region of G-protein gated inwardly rectifying potassium channel

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A4P9 Tryptophan scanning mutagenesis in the S1 domain of HCN channel

Takahiro Ishii, Noriyuki Nakashima and Harunori Ohmori

(Department of Physiology, Faculty of Medicine, Kyoto University, Kyoto, Japan)

A4P10 Characterization of a potassium channel with a naturally occurring omega current

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(1Department of Biological Sciences, University of Alberta; 2Department of Cell Biology, University of Alberta, Canada)

A4P11 Structural basis for two modes of spermine block of Kir2.1 channel

Keiko Ishihara, Ding-Hong Yan

(Department of Physiology, Faculty of Medicine, Saga University, Japan)

A4P12 Voltage sensing residues are essential for the $\beta 1$ subunit to enhance Ca^{2+} sensitivity of BK channels

Jingyi Shi, Guohui Zhang, Huanghe Yang, Urvi S. Lee, Kelli McFarland, and Jianmin Cui (Department of Biomedical Engineering, Washington University in St. Louis, USA)

A4P13 Immobilizing BK-channels in artificial lipid bilayers using annexin V

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A4P14 Single particle analysis of non-selective cation channel TRPV4 using a phase-contrast transmission electron microscope

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A4P15 Single channel properties of lysenin measured in the artificial lipid bilayer

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A4P16 New generation of FRET-pair

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Atsushi Miyawaki^{1,2} (1Laboratory for Cell Function Dynamics, Brain Science Institute, RIKEN, 2 Amalgaam Co., Ltd., 3Section of Developmental Neurophysiology, Okazaki Institute for Integrative, Bioscience, 4National Institute for Physiological Sciences, National Institutes of Natural Sciences, and 5Graduate University for Advanced Studies, Japan)

A4P17 Suppression of neuronal voltage dependent K⁺ currents in the mice lacking α -tubulin polyglutamylation

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