

Chromosome Science

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The 3rd Asian Chromosome Colloquium
1-4 December, 2008
Osaka University, Japan

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The 3rd Asian Chromosome Colloquium
1-4 December, 2008
Osaka University

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PROGRAMME

Sunday 30 November

- 16:00 Meeting of the board of trustees by the Society of Chromosome Research**
Middle Meeting Room, Graduate School of Engineering **Common East Building 5F**, Osaka University
- 17:00 Meeting of the board of directors by the Society of Chromosome Research**
Middle Meeting Room, Graduate School of Engineering **Common East Building 5F**, Osaka University
- 18:00 Welcome party**
Sky Restaurant, Osaka University Hospital Building 14F

Monday 1 December

08:00 Registration

08:55 Welcome

C hall

Plenary lectures: New Technology in Chromosome Research

Chairpersons: Kiichi Fukui
Osaka University, Japan
Weiwei Jin
China Agricultural University, China

- 09:00 L1-1 Recent advances in chromosome research**
Kiichi FUKUI
Graduate School of Engineering, Osaka University, Japan
- 09:45 L1-2 Scanning probe microscopy of human chromosomes**
Tatsuo USHIKI and Osamu HOSHI
Graduate School of Medical Dental Sciences, Niigata University, Japan
- 10:30 Coffee**
- 10:45 L1-3 Nano/microdevices for chromosomal manipulation and analyses**
Masato SAITO and Eiichi TAMIYA
Graduate school of Engineering, Osaka University, Japan
- 11:30 L1-4 Structural and functional dissection of cereal centromeres**
Weiwei JIN
National Maize Improvement Center of China, China Agricultural University, China
- 12:15 Lunch**

A hall

W1 Chromosomes in Animals

Chairpersons:
Nobuo Tsurusaki
Tottori University, Japan
Kornsorn Srikulnath
Kasetsart University, Thailand

- 13:15 W1-1 Geographic and seasonal variations of the number of B chromosomes in a maritime harvestman *Psathyropus tenuipes* in southwestern Japan (Arachnida, Opiliones)**
Nobuo TSURUSAKI and Mamiko YANO
Fac. Regional Sci., Tottori Univ., Japan

B hall

W2 Chromosomes in Dicots

Chairpersons:
Raj Kumar Mittal
CSK HPKV, Palampur, India
Wen-Hui Wei
Chinese Academy of Agricultural Sciences, Wuhan, China

- W2-1 Centromeres from telomeres? The subtelomeric and centromeric regions of *Brassica napus* contain the same satellite DNAs**
Chen LI, Xiao-Hong YAN, Li-Jun WANG, Qing YANG and Wen-Hui WEI
Institute of Oil Crops, Chinese Academy of Agricultural Sciences, Wuhan 430062, China

Monday 1 December

A hall		B hall	
W1	Chromosomes in Animals	W2	Chromosomes in Dicots
13:30	W1-2 Chromosome evolution of the cichlid fishes from Lake Victoria Kouta YOSHIDA ¹ , Asato KUROIWA ² , Yohey TERAJ ¹ , Shinji MIZOIRI ¹ , Mitsuo AIBARA ¹ , Naoki KOBAYASHI ¹ , Yoichi MATSUDA ² and Norihiro OKADA ¹ ¹ Grad. Sch. Biosci. and Biotech., Tokyo Inst. Tech., ² Lab. Anim. Cytogen., Creative Res. Initiative "Sousei", Hokkaido Univ., Japan	W2-2 Molecular cytogenetics view of cucumber genome Y.H. HAN ^{1,2} , Z.H. ZHANG ³ , J.H. LIU ¹ , J.Y. LU ¹ , S.W. HUANG ^{3*} and W.W. JIN ^{1*} ¹ National Maize Improvement Center of China, Key Laboratory of Crop Genetic Improvement and Genome of Ministry of Agriculture, China Agricultural University, Beijing, China; ² College of Life Sciences, Guangxi Normal University, Guilin, China; ³ Institute of Vegetables and Flowers, Chinese Academy of Agricultural Sciences, Beijing, China; *corresponding authors	
13:45	W1-3 Chromosomal characterization of butterfly lizard, <i>Leiolepis reevesii rubritaeniata</i> Kornorn SRIKULNATH ^{1,2} , Chizuko NISHIDA ^{2,3} , Kazumi MATSUBARA ³ , Yoshinobu UNO ² , Amara THONGPAN ¹ , Saowanee SUPUTTITADA ¹ , Somsak APISITWANICH ¹ and Yoichi MATSUDA ^{2,3} ¹ Dept. Genet. Fac. Sci., Kasetsart Univ., Thailand, ² Lab. Anim. Cytogenet., Biosys. Sci. Course, Grad. Sch. Life Sci., Hokkaido Univ., Japan, ³ Lab. Anim. Cytogenet., Div. Genome Dyn., Creat. Res. Init. "Sousei", Hokkaido Univ., Japan	W2-3 Interspecific hybridization and DNA based polymorphism in urdbean (<i>Vigna mungo</i>), ricebean (<i>V. umbellata</i>) and azukibean (<i>V. angularis</i>). R.K. MITTAL, B.C. SOOD, R. SHARMA and G. KATNA Department of Plant Breeding and Genetics, CSK HPAU, Palampur (HP), INDIA	
14:00	W1-4 Molecular cytogenetic approach to a Y-loss event in Ryukyu spiny rat (genus <i>Tokudaia</i>, Muridae, Rodentia) Chie MURATA ¹ , Fumio YAMADA ² , Norihiro KAWAUCHI ³ , Yuji MIYAKE ⁴ , Sota FUKUCHI ⁴ , Hiroshi SHICHIRI ⁴ , Shintaro ABE ⁴ , Nobuhiko KOTAKA ⁵ , Yoichi MATSUDA ^{1,6} and Asato KUROIWA ^{1,6} ¹ Grad. Sch. Life Sci., Hokkaido Univ., ² Kansai Res. Cen., FFPRI., ³ Island. Wildlife Lab., ⁴ Naha Nat. Conser., Min. Env., ⁵ Kyusyu Res. Cen., FFPRI., ⁶ CRIS, Hokkaido Univ., Japan		
W3	Chromosomes in Reproduction	W4	Chromosome Aberration
	Chairpersons: Ikuo Miura <i>Hiroshima University, Japan</i> Bong Bo Seo <i>Kyungpook National University, Korea</i>	Chairpersons: Yoshitaka Obara <i>Hirosaki University, Japan</i> Rakesh Kumar Chahota <i>CSK HPAU, Palampur, India</i>	
14:15	W3-1 Molecular characterization of ZW sex chromosomes and the prototype chromosome in the frog <i>Rana rugosa</i> Ikuo MIURA ¹ , Tariq EZAZ ² , Hiromi OHTANI ¹ and Jennifer A.M. GRAVES ³ ¹ Inst. Amphibian Biol., Grad. Sch. Sci., Hiroshima Univ., Japan, ² Inst. Applied Ecology, Univ. Canberra, 3Comp. Genomics Group, Res. Sch. Biol. Sci., The Australian Nat. Univ., Australia	W4-1 Genotoxic assessment of small mammals at an illegal dumpsite at the Aomori-Iwate prefectural boundary Yoshitaka OBARA ¹ , Takahiro KYOYA ² , Daisuke YAMAMOTO ¹ , Tomofumi ITO ¹ , Shizuki HAGIWARA ¹ and Kaori TAMURA ¹ ¹ Dept. Biol., Fac. Agr. & Life Sci., Hirosaki Univ.; ² Life Sci. Res. Inst., Kumiai Chemical Industry Co., Ltd., Japan	
14:30	W3-2 Molecular cytogenetic study on the origin and evolution of sex chromosomes in different genetic forms of the Japanese wrinkled frog (<i>Rana rugosa</i>, Ranidae) Yoshinobu UNO ¹ , Chizuko NISHIDA ^{1,2} , Yuki OSHIMA ³ , Satoshi YOKOYAMA ³ , Ikuo MIURA ⁴ , Masahisa NAKAMURA ³ and Yoichi MATSUDA ^{1,2} ¹ Grad. Sch. Life Sci., ² Creat. Res. Init. "Sousei", Hokkaido Univ., Sapporo; ³ Fac. Edu. Integ. Arts Sci., Waseda University, Tokyo, Japan; ⁴ Grad. Sch. Sci., Hiroshima Univ., Higashihiroshima, Japan	W4-2 Chromosome aberrations in astronauts Isamu HAYATA ^{1,2,3} , Yu KOIKE ¹ , Masako MINAMIHISAMATSU ² , Shizu YABE ¹ , Vyacheslav A. SHURSHACKOV ⁴ , Galina P. SNIGIRYOVA ⁵ and Alexandra BOGOMAZOVA ⁵ ¹ JAXA, ² NIRS, and ³ Cent. Res. Inst. Elec. Pow. Indust., Japan, and ⁴ IBMP and ⁵ IRR, Russia	
14:45	W3-3 Epigenetic changes in the vegetative nucleus during pollen tube growth Yaeko SANO and Ichiro TANAKA International Graduate School of Arts and Sciences, Yokohama City University, Japan	W4-3 Striking success in generating a new plant type through irradiation in horsegram (<i>Macrotyloma uniflorum</i>) RK CHAHOTA, HK CHAUDHARY, Naval KISHORE, Vijay KUMAR, Shailesh Paul SOOD and Samuel JEBERSON M. Molecular Cytogenetics & Tissue Culture Lab, Deptt. of Plant Breeding & Genetics, CSK HPAU, Palampur-176062 (HP), India.	

Monday 1 December

A hall		B hall	
W3	Chromosomes in Reproduction	W4	Chromosome Aberration
15:00	W3-4 A novel method for identification of chromosomes 7, 8 and sex chromosomes in the nondecondensed mature human sperm using sequential bi-color fluorescence <i>in situ</i> hybridization Bong Bo SEO and Jun Hyung SEO Department of Biology, Kyungpook National University, Daegu, Korea	15:00	W4-4 Chromatin deletion mutants in einkorn wheat induced by ion-beam irradiation Koji MURAI and Tomoko ABE Fukui Prefectural University and RIKEN Nishina Center, Japan
15:15	Coffee		
W5	Chromosomes in Cell Division	W6	Chromosome Structure
	Chairpersons: Susumu Uchiyama <i>Osaka University, Japan</i> Toshiro Sugai <i>Ibaraki University, Japan</i>		Chairpersons: Sumire Inaga <i>Tottori University, Japan</i> Yasuhito Kinjo <i>Tokyo Metropolitan Industrial Technology Research Institute, Japan</i>
15:30	W5-1 Protein composition of human metaphase chromosomes Susumu UCHIYAMA Grad. Sch. Eng., Osaka Univ., Japan	15:30	W6-1 Molecular mechanism for morphogenesis of X-shaped chromosomes Sachihiro MATSUNAGA ¹ , Hideaki TAKATA ² , Akihiro MORIMOTO ¹ , Daisuke KURIHARA ¹ , Susumu UCHIYAMA ¹ and Kiichi FUKUI ¹ ¹ Grad. Sch. Eng., Osaka Univ., ² Nat. Inst. Genet., Japan
15:45	W5-2 H1.X with different properties from other linker histones has important roles in proper mitotic progression Akihiro MORIMOTO , Hideaki TAKATA, Rika ONO-MANIWA, Susumu UCHIYAMA, Sachihiro MATSUNAGA and Kiichi FUKUI Department of Biotechnology, Graduate School of Engineering, Osaka University, Japan	15:45	W6-2 Functional analysis of RBMX in kinetochore formation by combination with RNAi method and electron microscopy Mei Hann LEE ¹ , Susumu UCHIYAMA ¹ , Sumire INAGA ³ , Sachihiro MATSUNAGA ¹ , Hirotarō MORI ² and Kiichi FUKUI ¹ ¹ Grad. Sch. Eng., Osaka Univ., ² Res. Center for UHVM, Osaka Univ., ³ Fac. Med., Tottori Univ., Japan
16:00	W5-3 Functional analysis of plant Aurora kinase during mitosis Daisuke KURIHARA , Susumu UCHIYAMA, Sachihiro MATSUNAGA and Kiichi FUKUI Grad. Sch. Eng., Osaka Univ., Japan	16:00	W6-3 Observation of mammalian chromosomes prepared by surface-spreading technique Yasuhito KINJO Tokyo Metropolitan Industrial Technology research Institute, Japan
16:15	W5-4 Ciliate nuclear division- unknown way of DNA distribution during cell division Toshiro SUGAI and Masaki ENDO Dept. Biol., Fac. Sci., Ibaraki Univ., Japan	16:15	W6-4 Three-dimensional higher-order structure and scaffold of mammalian chromosomes revealed by electron microscopy Sumire INAGA ¹ , Tetsuo KATSUMOTO ¹ , Hironobu NAKANE ¹ , Tomonori NAGURO ¹ , Keiichi TANAKA ² , Akihiro IINO ¹ , Linyen LIN ³ , Susumu UCHIYAMA ³ , Sachihiro MATSUNAGA ³ and Kiichi FUKUI ³ ¹ Fac. Med., Tottori Univ., Japan, ² Tanaka SEM Inst., Japan, ³ Grad. Sch. Eng., Osaka Univ., Japan
W7	Chromosome Engineering	W8	Chromosomes in Monocots
	Chairpersons: Go Suzuki <i>Osaka Kyoiku University, Japan</i> Monika Garg <i>Tottori University, Japan</i>		Chairpersons: Maki Yamamoto <i>Kansai University of Welfare Sciences, Japan</i> Baochun Li <i>Chinese Academy of Agricultural Sciences, Beijing, China</i>
16:30	W7-1 Mixoploidy in transgenic tobacco Go SUZUKI ¹ , Yuka TSUJII ¹ , Mika MIWA ¹ , Yu SAITO ¹ , Tadayoshi IMAZAWA ¹ , Akiko NAKANO ¹ , Maki YAMAMOTO ² and Yasuhiko MUKAI ¹ ¹ Osaka Kyoiku Univ., ² Kansai Univ. Welfare Sci., Japan	16:30	W8-1 Chromosomal Localization of Two Different Size 5S rDNA of <i>Allium victorialis</i> var. <i>platyphyllum</i> by Sequential Fluorescence <i>in situ</i> Hybridization with Sequence Polymorphism Jun Hyung SEO and Bong Bo SEO Department of Biology, Kyungpook National University, Korea
16:45	W7-2 Utilizing variation of <i>Agropyron elongatum</i> and <i>Aegilops geniculata</i> for wheat end product quality improvement: Challenges ahead Monika GARG , Hiroyuki TANAKA and Hisashi TSUJIMOTO Laboratory of Plant Genetics and Breeding Science, Faculty of Agriculture, Tottori University, Japan	16:45	W8-2 Polyploidy distribution and microsatellite polymorphism of <i>Allium grayi</i> Regel in East Asia ¹ S. GUO., ² T. WAKO., ² A. TSUKAZAKI, ³ K. KATO and ¹ H. OGURA ¹ Graduate School of Educ., Okayama Univ., ² Vegetable and Tea Res. Inst., Mie, NARO, ³ Graduate School of Natural Science and Technol., Okayama Univ., Japan

Monday 1 December

		A hall			B hall
		W7	Chromosome Engineering	W8	Chromosomes in Monocots
17:00	W7-3		Extensive hybridization and polyploidy in <i>Cobitis biwae</i> and <i>C. striata</i> complexes Kenji SAITOH ¹ , Wei-Jen CHEN ² and Richard L. MAYDEN ² ¹ Tohoku National Fisheries Research Institute, Japan, ² Saint Louis University, Department of Biology, USA	W8-3	Molecular cytological analysis of defective cell division in meiosis of <i>Allium</i> hybrids Maki YAMAMOTO ¹ , Go SUZUKI ² and Yasuhiko MUKAI ² ¹ Dept. Nutritional Sci. for Well-being, Kansai Univ. Welfare Sciences, ² Division of Natural Sci., Osaka Kyoiku Univ., Japan
17:15	W7-4		A variety of chromosomal regions tagged to induce chromosome deletion by Cre/inverted loxP system in mouse embryonic stem cells Masako TADA ^{1,3} , Hiroyuki MATSUMURA ² , Yuko KUROSE ¹ , Norio NAKATSUJI ³ and Takashi TADA ² ¹ ReproCELL Inc., ² Stem Cell Engineering and ³ Development and Differentiation, Inst. Frontier Med. Sci. Kyoto Univ., Japan	W8-4	Mega-base sequences at wheat 3B centromeric and pericentromeric regions Baochun LI ^{1,2} , Catherine FEUILLET ³ and Xueyong ZHANG ¹ ¹ Inst. Crop. CAAS., ² Gansu. Agr.Univ., ³ INRA Clermont Ferrand., China
17:30				W8-5	Genetic diversity among maize inbreds adapted to North-Western Himalayan region of India revealed by functional SSR markers Jai DEV ¹ , Munish SHARMA ² , R. RATHOUR ² and H. K. CHAUDHARY ¹ ¹ Dept. Pl. Breed. Genet., HP Agril. Univ., India; ² Adv. Centre Hill Biores. Biotech., HP Agril. Univ. India
19:00			Meeting of the international steering committee by the Society of Asian Chromosome Colloquium Middle Meeting Room, Graduate School of Engineering Common East Building 5F, Osaka University		

Tuesday 2 December

C hall

Plenary lectures: Genome and Chromosome Evolution

Chairpersons: Yoichi Matsuda

Hokkaido University, Japan

Harindra Singh Balyan

Ch. Charan Singh University, India

- 09:00 L2-1 Overview of evolution and variety of life-systems through comparative genomics – impacts from large-scale genome analysis and new-generation sequencers –**
Asao FUJIYAMA^{1,2}, Tomoyuki AIZU², Fumio EJIMA², Hinako ISHIZAKI², Miho KIYO-OKA², Ayuko MOTOYAMA², Yumi TSUKAMOTO², Satoru YOSHIDA², Naomi INAGAKI³, Keiko TAKAHASHI³, Miwako TOCHIGI³, Hiromi WADA³, Atsushi TOYODA² and Yoko KUROKI³
¹National Institute of Informatics, Tokyo, Japan, ²National Institute of Genetics, Mishima, Japan, ³RIKEN Institute, Yokohama, Japan
- 09:45 L2-2 Molecular cytogenetic approach for comparative genomics of amniotes – Chromosome evolution and sex chromosome differentiation in birds and reptiles –**
Yoichi MATSUDA¹, Kazumi MATSUBARA¹, Junko ISHIJIMA¹, Hiroshi TARUI², Kiyokazu AGATA³ and Chizuko NISHIDA¹
¹Lab. Anim. Cytogenet., Creative Res. Initiative "Sousei", Hokkaido Univ., Sapporo, Japan; ²Genome Resource Analy. Subunit, RIKEN CDB, Kobe, Japan; ³Grad. Sch. Sci., Kyoto Univ., Kyoto, Japan
- 10:30 Coffee**
- 10:45 L2-3 Diversity of sex chromosomes and sex-determining genes – Lessons from medaka fishes –**
Mitsuru SAKAIZUMI
 Grad. Sch. Sci. Tech., Niigata Univ., Japan
- 11:30 L2-4 Multiple SINE insertions made our brain mammalian?**
Norihiro OKADA
 Tokyo Institute of Technology, Japan
- 12:15 Lunch**

A hall

S1 Neotechnologies for Chromosome Engineering in Plants

Chairpersons:

Nobuko Ohmido

Kobe University, Japan

Guangmin Xia

Shandong University, China

- 13:15 S1-1 Dynamic behavior of artificial chromosome in plant**
Kiyotaka NAGAKI
 Research Institute for Bioresources, Okayama University, Japan
- 13:45 S1-2 The technology for chromosome loss in plant**
Kazuya NANTO¹, Goro KOKUBUGATA², Wataru MARUBASHI³, Hiroyasu EBINUMA¹ and Teruhisa SHIMADA¹
¹Forestry Science Laboratory, Nippon Paper Industries Co.,LTD, Japan, ²Department of Botany, National Museum of Nature and Science, Japan, ³School of Agriculture, Meiji University, Japan
- 14:15 S1-3 Alien gene introgression to wheat via asymmetric somatic hybridization**
Guangmin XIA
 School of Life Sciences, Shandong University, China
- 14:45 S1-4 Recent chromosome research on aposporous apomixis in plants**
Yukio AKIYAMA
 National Institute of Livestock and Grassland Science, Japan

B hall

S2 3D Nuclear Architecture: Chromosome Territories and Nuclear Dynamics

Chairpersons:

Hideyuki Tanabe

The Graduate University for Advanced Studies, Japan

Hyockman Kwon

Hankuk University of Foreign Studies, Korea

- S2-1 Control of DNA replication by BAF53-dependent higher-order chromatin structure**
Hyockman KWON
 Department of Bioscience and Biotechnology, Hankuk University of Foreign Studies, Korea
- S2-2 Involvement of the actin-related protein Arp6 in spatial organization of radial chromosome territories**
Masahiko HARATA
 Graduate School of Agricultural Science, Tohoku University, Japan
- S2-3 Gene kissing: A remote enhancer-promoter interaction regulates expression of Sonic hedgehog in mouse limb buds**
Takanori AMANO¹, Tomoko SAGAI¹, Hideyuki TANABE² and Toshihiko SHIROISHI¹
¹National Institute of Genetics, Japan, ²The Graduate University for Advanced Studies, Japan
- S2-4 Dynamics of chromosome territories: Chromosome kissing for gene regulation and genomic evolution**
Hideyuki TANABE
 Dept. Evolutionary Studies Biosystems, Sch. Adv. Sci., The Grad. Univ. Adv. Studies (Sokendai), Japan

Tuesday 2 December

A hall

S1 Neotechnologies for Chromosome Engineering in Plants

- 15:15 S1-5 **High-resolution FISH for gene mapping and molecular analysis of plant chromosomes**
Nobuko OHMIDO
Grad. Sch. Human Develop. Env., Kobe Univ., Japan

B hall

D hall

- 15:30 **Poster Session** (see 12-14 pages)

C hall

- 16:30 **General Meeting by the Society of Chromosome Research**

Award ceremony and lectures by the Society of Chromosome Research (*in Japanese*)

- 17:00 A1 Chairperson: Hisashi Tsujimoto
Tottori University, Japan
- Analyses of plant centromeric components**
Kiyotaka NAGAKI
Research Institute for Bioresources, Okayama University, Japan
- 17:30 A2 Chairperson: Nobuko Ohmido
Kobe University, Japan
- Proteome analysis research of human chromosomes**
Susumu UCHIYAMA
Graduate School of Engineering, Osaka University, Japan

- 19:00 **Banquet**
Restaurant Minerva, Osaka University Ichyo Building 2F

Wednesday 3 December

C hall

Plenary lectures: Application of Chromosome Research to Medicine and Agriculture

Chairpersons: Yasuhiko Mukai

Osaka Kyoiku University, Japan

Umesh C. Lavania

Central Institute of Medicinal and Aromatic Plants Lucknow, India

09:00 L3-1 Application of chromosome research in agriculture and medicine

Umesh C. LAVANIA

Central Institute of Medicinal and Aromatic Plants Lucknow, India

09:45 L3-2 Construction of human artificial chromosome (HAC) and the medical applications

Mitsuo OSHIMURA

Graduate School of Medical Science, Tottori University, Japan

10:30 Coffee

10:45 L3-3 Utilization of wild rice (*Oryza rufipogon* Griff.) in genomic study

Chuanqing SUN

China Agricultural University, Beijing, China

11:30 L3-4 New frontiers of chromosome sciences for sustainable agriculture

Yasuhiko MUKAI

Osaka Kyoiku University, Japan

12:15 Lunch

A hall

S3 Chromosome Engineering in Horticultural Plants

Chairpersons:

Takato Koba

Chiba University, Japan

Aziz Purwantoro

Gadjah Mada University, Indonesia

13:15 S3-1 Sex identification of snakefruit (*Salacca zalacca* (Gaernert) Voss) revealed by fluorescence banding pattern

Parjanto¹, Sukarti MULYOPRAWIRO², Wayan ARTHANA² and **Aziz-PURWANTORO²**

¹Fac. of Agriculture Sebelas Maret University; ²Gadjah Mada University, India

13:45 S3-2 Applications and impact of alien-chromosome addition lines to studies on genetics and breeding in the genus *Allium*

Masayoshi SHIGYO

Faculty of Agriculture, Yamaguchi University, Japan

14:15 S3-3 Unreduced gamete formation and its utilization for ornamental plant breeding

Juntaro KATO¹, Mikio NIMURA², Yuuichi FUTAGAMI¹, Mayuko IKEDA³, Mai HAYASHI⁴, Yuki MURATA¹, Yasuko YOSHIDA⁵, Ryo OHSAWA⁵, Syoichi ICHIHASHI¹ and Masahiro MII⁴

¹Dep. Biol., Aichi Univ. of Educ., ²Dep. Hort., Aichi Agric. Res. Center, ³Grad. Sch. Bioagr. Sci., Nagoya Univ., ⁴Grad. Sch. Hort., Chiba Univ., ⁵Grad. Sch. Life Env. Sci., Univ. Tsukuba, Japan

B hall

S4 Chromosome Aberrations Induced by Low Dose Radiation

Chairpersons:

Isamu Hayata

National Institute of Radiological Sciences, Japan

Central Research Institute of Electric Power Industry, Japan

Wei Zhang

Chinese Center for Disease Control and Prevention, China

S4-1 Dose and dose-rate effects on chromosome aberrations in splenocytes from mice continuously exposed to low-dose-rate gamma-rays

Kimio TANAKA and Atushi KOHDA

Institute for Environmental Sciences, Aomori, Japan

S4-2 Dose response of chromosome aberrations at very low dose range

Toshiyasu IWASAKI¹ and Isamu HAYATA^{1,2}

¹Central Research Institute of Electric Power Industry, Tokyo,

²National Institute of Radiological Science, Japan

S4-3 Chromosome aberrations observed in high levels of natural radiation areas in China

Chunyan WANG¹, Wei ZHANG¹, Masako MINAMIHISAMATSU², Luxin WEI¹, Tsutomu SUGAHARA³ and Isamu HAYATA^{2,4}

¹National Institute for Radiological Protection, Chinese Center for Disease Control and Prevention, China; ²National Institute of Radiological Sciences, Japan; ³Health Research Foundation, Japan; and ⁴Central Research Institute of Electric Power Industry, Japan

Wednesday 3 December

A hall		B hall	
S3	Chromosome Engineering in Horticultural Plants	S4	Chromosome Aberrations Induced by Low Dose Radiation
14:45	S3-4 Genetics and cytogenetics in the genus <i>Lycoris</i> Takato Koba ¹ , Akie HOYA ¹ , Mari IWAMOTO ¹ , Noriyuki HARA ¹ , Yohei SHIMAJIRI ¹ , Yasuhiko MUKAI ² , Shiro KURITA ³ and Tada-aki HORI ⁴ ¹ Grad. Sch. Hort., Chiba Univ., ² Div. Natur. Sci., Osaka Kyoiku Univ., ³ Fac. Sci., Chiba Univ., ⁴ Natl. Inst. Radiol. Sci., Japan	14:45	S4-4 Effect of smoking on the chromosome aberrations induced by environmental mutagens Wei ZHANG ¹ , Chunyan WANG ¹ , Masako MINAMIHISAMATSU ² , Luxin WEI ¹ , Tsutomu SUGAHARA ³ , and Isamu HAYATA ^{2,4} ¹ National Institute for Radiological Protection, Chinese Center for Disease Control and Prevention, China; ² National Institute of Radiological Sciences, Japan; ³ Health Research Foundation, Japan; and ⁴ Central Research Institute of Electric Power Industry, Japan
15:15	Coffee		
S5	Chromosome Engineering in Cereals	S6	Molecular Regulation of Chromosome Assembly and Segregation
	Chairpersons: Hisashi Tsujimoto <i>Tottori University, Japan</i> Peidu Chen <i>Nanjing Agricultural University, China</i>		Chairpersons: Takao Ono <i>Advanced Science Institute, RIKEN, Japan</i> Jibak Lee <i>Chromosome Dynamics Laboratory, RIKEN, Japan</i>
15:30	S5-1 Genome shuffling in Triticeae Takashi R. ENDO Kyoto University, Japan	15:30	S6-1 Molecular mechanisms of meiotic chromosome behavior in mouse oocytes Jibak LEE Laboratory of Chromosome Dynamics, RIKEN Advanced Science Institute, Japan
16:00	S5-2 Application of chromosome engineering for wheat breeding in CIMMYT Masahiro KISHII International Maize and Wheat Improvement Center (CIMMYT), Mexico	16:00	S6-2 Kid-Mediated Anaphase Chromosome Compaction Safeguards Mouse Early Embryos Against Multinuclear Formation Miho OHSUGI ¹ , Kenjiro ADACHI ^{2,4} , Reiko HORAI ^{2,5} , Shigeru KAKUTA ² , Katsuko SUDO ^{2,6} , Hayato KOTAKI ² , Noriko TOKAI-NISHIZUMI ¹ , Hiroshi SAGARA ³ , Yoichiro IWAKURA ² and Tadashi YAMAMOTO ¹ ¹ Division of Oncology, Department of Cancer Biology, ² Division of Cell Biology, Center for Experimental Medicine, ³ Laboratory of Proteomics, Institute of Medical Science, The University of Tokyo, Tokyo, Japan. ⁴ Laboratory for Pluripotent Cell Studies, RIKEN Center for Developmental Biology, Kobe, Japan. ⁵ National Eye Institute, NIH, Bethesda, Maryland, USA. ⁶ Animal Research Center, Tokyo Medical University, Tokyo, Japan
16:30	S5-3 Development and application of chromosome translocation between wheat and its relatives Peidu CHEN State Key Laboratory of Crop Genetics and Germplasm Enhancement, Nanjing Agricultural University, China	16:30	S6-3 Mitotic chromosome structure: Irregular folding of nucleosome fibers Kazuhiro MAESHIMA Cellular Dynamics. Laboratory, RIKEN, Japan
17:00	S5-4 Dynamics of doubled haploidy breeding and molecular cytogenetic approaches in bread wheat: Focus on north-west Himalayan regions Harinder Kumar CHAUDHARY Molecular Cytogenetics & Tissue Culture Lab, Department of Plant Breeding & Genetics, CSK HP Agricultural University, India	17:00	S6-4 Heterochromatin integrity affects chromosome reorganization after centromere dysfunction Kohta TAKAHASHI Division of Cell Biology, Institute of Life Science, Kurume University, Japan

Wednesday 3 December

A hall		B hall	
S7	Mechanism of Cytokinesis in Mammalian Cells	S8	Plant Chromosome and Evolution
	Chairpersons: Hiroshi Hosoya <i>Hiroshima University, Japan</i> Mohan K. Balasubramanian <i>National University of Singapore, Singapore</i>		Chairpersons: Ichiro Fukuda <i>The Asian Ecology-Evolution Botanical Institute, Japan</i> Xueyong Zhang <i>Chinese Academy of Agricultural Sciences, China</i>
19:00	S7-1 Roles of phosphorylated myosin II during cell division in mammalian cultured cells Satoshi ASANO, Tomo KONDO, Rieko ISODA, Noriyuki OKUSA, Kozue HAMAOKA and Hiroshi HOSOYA Department of Biological Science, Graduate School of Science, Hiroshima University, Japan	S8-1	Chromosome variation and evolution in North American and Asian <i>Trillium</i> species Ichiro FUKUDA Tokyo Woman's Christian University, The Asian Ecology-Evolution Botanical Institute, Japan
19:30	S7-2 Structure and assembly of contractile ring during cytokinesis in fission yeast cells Issei MABUCHI Institute for Biomolecular Science, Gakushuin University, Mejiro, Tokyo, Japan	S8-2	Origin of spontaneous triploid loquat by genomic <i>in situ</i> hybridization (GISH) Guolu LIANG , Weixing WANG, Qigao GUO, Suqiong XIANG, Xiaolin LI and Qiao HE College of Horticulture and landscape architecture, Southwest University, Chongqing, China
20:00	S7-3 Positioning the Cell Division Machinery and Monitoring Cytokinesis (tentative) Mohan K. BALASUBRAMANIAN Temasek Life Sciences Laboratory, National University of Singapore, Singapore	S8-3	Wheat centromeric- pericentromere-retrotransposons and genome evolution Zhao LIU ¹ , Wei YUE ¹ , Weiwei JIN ² and Xueyong ZHANG¹ ¹ Institute of Crop Sciences, Chinese Academy of Agricultural Sciences, The National Facility for Crop Gene Resources and Genetic Improvement, Beijing, China, ² China Agricultural University, Beijing, China
20:30	S7-4 Augmin-dependent microtubule generation within the spindle is required for proper chromosome segregation Gohta GOSHIMA Institute for Advanced Research, Nagoya University, Nagoya, Japan	S8-4	The chromosome research of parts medicinal plants in China Chengbin CHEN , Wenqin SONG, Xiulan LI, Li CHEN, Chunguo WANG and Ruiyang CHEN College of Life Sciences, Nankai University, Tianjin, China
21:00		S8-5	Integrated physical map of bread wheat containing 2,120 simple sequence repeat (SSR) loci Harindra Singh BALYAN , Pushpendra Kumar GUPTA, Aakash GOYAL, Amita MOHAN and Sachin KUMAR Molecular Biology Laboratory, Department of Genetics and Plant Breeding, Ch. Charan Singh University, Meerut, India

Thursday 4 December

08:30 Excursion (---17:00)

Poster Session

- P1 Polyploid evolution in *Officinalis* Complex of the genus *Oryza***
Bao-sheng WANG^{1,2} and Daming ZHANG¹
¹State Key Laboratory of Systematic and Evolutionary Botany, Institute of Botany, Chinese Academy of Sciences, Beijing, China; ²Graduate School, Chinese Academy of Sciences, Beijing, China
- P2 Chromosome and genome size evolution in the genus *Schoenus***
Navdeep BHATTI¹, Paul DATSON² and Brian MURRAY¹
¹School of Biological Sciences, University of Auckland; ²Dept. Fruit Breeding, HortResearch, India
- P3 Karyotypic evolution in snakes**
Kazumi MATSUBARA¹, Hiroshi TARUJ², Michihisa TORIBA³, Yoshinori KUMAZAWA⁴, Hidetoshi OTA⁵, Kazuhiko YAMADA¹, Chizuko NISHIDA¹, Kiyokazu AGATA⁶ and Yoichi MATSUDA¹
¹Lab. Anim. Cytogenet., Creat. Res. Init. "Sousei", Hokkaido Univ., ²Genome Resource and Anal. Subunit, RIKEN CDB, ³Japan Snake Inst., ⁴Dep. Inform. and Biol. Sci., Grad. Sch. Natural Sci., Nagoya City Univ., ⁵Trop. Biosphere Res. Center, Univ. Ryukyus, ⁶Lab. Mol. Dev. Biol., Grad. Sch. Sci., Kyoto Univ., Japan
- P4 Identification of chromosomes and intergenomic reciprocal translocations in the homoeologous genomes A and B of reciprocal translocations in the homoeologous genomes A and B of *Scilla scilloides* by g**
Akinori UCHINO and Atsuto HAMASUNA
 Graduate School of Science and Technology, Kumamoto University, Japan
- P5 Comprehensive chromosome map of red clover (*Trifolium pratense* L.)**
Ryohei KATAOKA¹, Masaki HARA¹, Seiji KATO², Sachiko ISOBE³, Shusei SATO³, Satoshi TABATA³ and Nobuko OHMIDO¹
¹Grad. Sch. Cult. Stud. Hum. Sci., Kobe U., ²Yamanashi Pref. Agri. Tech. Cen., ³Kazusa DNA Res. Inst., Japan
- P6 Studies on genetic improvement and idioplasmic creation of *Salvia Miltiorrhiza* Bunge**
 I. Collection, genetic polymorphism analysis and heterosis determination of germplasm resources of *Salvia Miltiorrhiza* Bunge in China
Li CHEN, Xiulan LI, Yong ZHANG and Bing WANG
 The College of Life Sciences, Nankai University, Tianjin, China
- P7 Chromosomal localization of non-coding RNA from imprinted *LIT1***
Hiroyuki KUGOH, Kazuhiro MURAKAMI, Eriko OSHIRO, Takahito OHHIRA and Mitsuo OSHIMURA
 Dept. of Biomedical Sci., Regenerative Med. and Biofunction, Grad. Sch. of Med. Sci., Tottori Univ., Japan
- P8 Physical localization of rDNA sequences by two-colour fluorescent in-situ hybridization in *Bromus inermis* L. and its closely related diploid and polyploidy relatives**
Metin TUNA¹, Schwarzacher TRUDE², and J. S HESLOP-HARRISON².
¹Dept. of Field Crops, Fac. of Agr., Namik Kemal Univ., Tekirdag, Turkey, ²Dept Biol, Univ. of Leicester, Leicester, England
- P9 Location of specific DNA from sugarcane parental species by *in situ* PCR**
Nansheng ZHUANG, Ying WANG, Dongyi HUANG and Heqiong GAO
 College of Agriculture, Hainan University, China
- P10 Molecular evolutionary analysis of the NTS region of 5S ribosomal DNA in cyclostomes**
Rie YAEHASHI, N. FUJIKAWA, K. SASAKI, D. FUJI, K. KIRIYA, E. OGAWA, S. TAKANUKI, M. ASADA, S. KOHNO and S. KUBOTA
 Department of Biology, Faculty of Science, Toho University, Japan
- P11 Isolation and characterization of novel repetitive DNA are associated with centromeric domains in snakes**
Risako SEKI¹, Kazumi MATSUBARA², Michihisa TORIBA³ and Yoichi MATSUDA^{1,2}
¹Grad. Sch. Life Sci. Hokkaido Univ., ²Creat. Res. Init. "Sousei", Hokkaido Univ., ³Japan Snake Inst., Japan
- P12 Molecular cytogenetic characterization of repetitive DNA sequences that comprise constitutive heterochromatin of the genus *Oryzias***
Yusuke ASADA¹, Chizuko NISHIDA^{1,2}, Yusuke TAKEHANA³, Mitsuru SAKAIZUMI⁴, Yoichi MATSUDA^{1,2}
¹Grad. Sch. Life Sci., Hokkaido Univ., ²Lab. Anim. Cytogenet., Div. Genome Dyn., Creative Res. Initiative "Sousei", Hokkaido Univ., ³Lab. Biores., Natl. Inst. Basic Bio. ⁴Grad. Sch. Sci. Tech., Niigata Univ., Japan
- P13 Toward global mapping for the functional RNA molecules during the mitosis in mammalian cells**
Marin CHIBA and Hideyuki TANABE
 Dept. Evolutionary Studies Biosystems, Sch. Adv. Sci., The Grad. Univ. Adv. Studies (SOKENDAI), Japan
- P14 The karyotype and sex chromosome evolution in geographic populations of the silkworm, *Samia cynthia***
Atsuo YOSHIDO¹, Yoichi MATSUDA¹, Yuji YASUKOCHI² and Ken SAHARA³
¹Laboratory of Animal Cytogenetics, Division of Genome Dynamics, Creative Research Initiative "Sousei", Hokkaido University, ²Insect Genome laboratory, National Institute of Agrobiological Sciences, ³Laboratory of Applied Molecular Entomology, Graduate School of Agriculture, Hokkaido University, Japan
- P15 Characterization of HP1-BP74 by RNAi method**
Hirota KUROKI, Kayoko HAYASHIHARA, Hideaki TAKATA, Susumu UCHIYAMA, Sachihiko MATSUNAGA and Kiichi FUKUI
 Grad. Sch. Eng., Osaka Univ., Japan
- P16 Genomic study of subtracted DNAs that are specifically expressed in germline genome of *Eptatretus burgeri***
Tomoko OTSUZUMI, Miki KATO, Takeshi SHINDO, Hitomi CHINONE, Mihoko OHTANI, Noriko FUJIKAWA, Sei-ichi KOHNO and Souichirou KUBOTA
 Department of Biology, Faculty of Science, Toho University, Japan
- P17 Characterization of the novel HP1-binding protein**
Kayoko HAYASHIHARA¹, Hidekazu WAKAMATSU¹, Daisuke NO¹, Hiroki SUGAHARA², Shouhei KOBAYASHI¹, Susumu UCHIYAMA¹, Tadayasu OHKUBO², Sachihiko MATSUNAGA¹ and Kiichi FUKUI¹
¹Grad. Sch. Eng., Osaka Univ., ²Grad. Sch. Pharm. Sci., Osaka Univ., Japan

- P18 Identification of proteins which interact with chromosomal protein RBMX**
Shoichi NAKAO, Hideaki TAKATA, Akihiro MORIMOTO, Susumu UCHIYAMA, Sachihiko MATSUNAGA and Kiichi FUKUI
Department of Biotechnology, Graduate School of Engineering, Osaka university, Japan
- P19 Higher-order structure of reconstituted chromatin**
Naoya SAIKI, Masanori NODA, Susumu UCHIYAMA, Sachihiko MATSUNAGA and Kiichi FUKUI
Department of biotechnology, Graduate school of engineering, Osaka Univ., Japan
- P20 Effect of Electromagnetic field to *Arabidopsis* light receptor mutants**
Ayako SHIBA, Manami IKEDA, Satoshi KANDA, Hiroya FUKUDA and Nobuko OHMIDO
Grad. Sch. Human Develop. Env., Kobe Univ., Japan
- P21 Comparative fiber FISH analysis of the transfected gene in human lung tumor cell line, H1299**
Hitoshi SATOH¹, Izuru YOKOMI^{2,4}, Hideaki OGIWARA³, Takashi KOHNO³ and Jun YOKOTA³
¹Dept. Med. Genome Sci., Grad. Sch. Frontier Sci., The Univ. Tokyo, ²Dept. Pharmacol., Sch. Med., St. Marianna Univ., ³Biol. Div., Natl Cancer Ctr Res. Inst., ⁴Animal Care Co. Ltd., Japan
- P22 Microarray CGH analyses of myeloid malignancies with chromosome 20q deletions**
Michiko OKADA¹, Momoki HIRAI², Yumiko SUTO³, Akemi USAMI¹, Kaori OKAJIMA¹, Masanao TERAMURA⁴, Naoki MORI⁴, Masayuki SHISEKI⁴ and Toshiko MOTOJI⁴
¹Chromosome Lab., Shiseikai Dai-Ni Hosp., ²IREIIMS., Tokyo Women's Med Univ., ³Central Blood Inst., Japan.Red Cross Soc., ⁴Div.Hematol., Tokyo Women's Med. Univ., Tokyo, Japan
- P23 Analysis of repetitive DNA sequences restricted to germline genome in *Eptatretus burgeri***
Hitomi CHINONE, Miki KATO, Tomoko OTSUZUMI, Noriko FUJIKAWA, Sei-ichi KOHNO, Souichirou KUBOTA
Department of Biology, Faculty of Science, Toho University, Japan
- P24 Domain analysis of a chromosomal protein, ASURA**
Masahiro MITSUSHIMA, Hideaki TAKATA, Akihiro MORIMOTO, Susumu UCHIYAMA, Sachihiko MATSUNAGA and Kiichi FUKUI
Department of Biotechnology, Graduate School of Engineering, Osaka University, Japan
- P25 *Arabidopsis thaliana* condensin 2 is involved in boron toxicity tolerance**
Takuya SAKAMOTO¹, Yayoi TSUJIMOTO INUI¹, Daisuke KURIHARA², Sachihiko MATSUNAGA², Kiichi FUKUI² and Toru FUJIWARA^{1,3}
¹Biotech. Res. Cen., Univ. Tokyo, ²Dept. Biotech., Grad. Sch. Eng., Osaka Univ., ³SORST, JST, Japan
- P26 Cooperative contribution of actin- and myosin-families to nuclear and chromosomal organization**
Hiroshi KITAMURA¹, Eri OHFUCHI¹, Hideyuki TANABE², Chikashi OBUSE³, Tetsuya HORI⁴, Tatuio FUKAGAWA⁴ and Masahiko HARATA¹
¹Grad. Sch. Agri. Sci., Tohoku Univ., ²Grad. Univ. Adv. Stud., Soken dai, ³Hokkaido Univ., ⁴Natl. Inst. Genet., Japan
- P27 Nuclear condensin II in S phase: linking DNA replication to chromosome condensation**
Takao ONO and Tatsuya HIRANO
Chromosome Dynamics Laboratory, Advanced Science Institute, RIKEN, Japan
- P28 Centromere and telomere dynamics during meiotic prophase I in rice**
Norio KOMEDA^{1,2}, Nori KURATA^{1,3} and Ken-ichi NONOMURA^{1,2}
¹Grad. Sch. Genet., SOKENDAI Univ., ²Expt. Farm., Natl. Inst. Genet. ³Dept. Plant Genet., Natl. Inst. Genet., Japan
- P29 Analysis of three-dimensionally relative positioning of chromosome 21 territories by 3D-FISH techniques in cell nuclei of cell lines established from peripheral blood lymphocytes of Down's syndrome patients**
Koichi SEKIZAWA¹, Ayumi TAKAHASHI¹, Kunikazu KISHI¹ and Hideyuki TANABE²
¹Lab. Cytogenetics, Faculty of Health Sci., Kyorin Univ., ²Dept. Evolutionary Studies Biosystems, Sch. Adv. Sci., The Grad. Univ. Adv. Studies (Sokendai)
- P30 3-D unstained live-cell imaging with stimulated parametric emission microscopy**
Hieu M. DANG¹, Takehito KAWASUMI², Toshiyuki UMANO¹, Shin'ichiro KAJIYAMA^{1,2}, Yasuyuki OZEKI², Kazuyoshi ITOH² and Kiichi FUKUI¹
¹Department of Biotechnology, Graduate School of Engineering, Osaka University, Osaka, Japan, ²Department of Material and Life Science, Graduate School of Engineering, Osaka University, Osaka, Japan
- P31 Practical use of alien chromosome bank for pre-breeding of wheat**
Hisashi TSUJIMOTO
Laboratory of Plant Genetics and Breeding Science, Faculty of Agriculture, Tottori University, Japan
- P32 Wide hybridization between Triticeae/Avenae plants and pearl millet: Dynamics of pearl millet chromosomes in hybrid embryo cells**
Takayoshi ISHII, Toshie UEDA, Hiroyuki TANAKA and Hisashi TSUJIMOTO
Grad. Sch. Agric., Tottori Univ., Japan
- P33 Resistance to wheat diseases derived from the wheatgrasses, *Thinopyrum intermedium* and *Th. ponticum***
Hongjie LI¹, Xiaoming WANG¹, Zhendong ZHU¹, R. L. CONNER² and T. D. MURRAY³
¹The National Key Facility for Crop Gene Resources and Genetic Improvement, NCFRI, Institute of Crop Science, Chinese Academy of Agricultural Sciences, Beijing, China; ²Agriculture and Agri-Food Canada, Morden Research Station, Manitoba, Canada; ³Department of Plant Pathology, Washington State University, Washington, USA.
- P34 Divalent cations affect chromosome morphology and the localization of chromosomal proteins**
Linyen LIN¹, Satoru FUJIMOTO², Mei Hann LEE¹, Susumu UCHIYAMA¹, Sumire INAGA³, Sachihiko MATSUNAGA¹, Akio TAKAOKA², Hirotaro MORI² and Kiichi FUKUI¹
¹Grad. Sch. Eng., Osaka Univ., ²Res. Center for UHVEM, Osaka Univ., ³Fac. Med., Tottori Univ., Japan
- P35 Analysis of artificial tetraploids(2n=36) induced from *Chrysanthemum boreale* (2n=18), *Ch. makinoi* (2n=18) and their F₁ hybrid (2n=18)**
Futoshi MATSUI, Chiharu MITSUEDA and Kenji TANIGUCHI
Grad. Sch. Sci., Hiroshima Univ., Japan
- P36 Relative efficiency of maize- and Imperata cylindrica-mediated chromosome elimination approaches for the induction of haploids in wheat-rye derivatives**
Naval KISHORE, HK CHAUDHARY, Rakesh CHAHOTA, Vijay KUMAR, Shailesh Paul SOOD and Samuel JEBERSON
Molecular Cytogenetics & Tissue Culture Lab, Department of Plant Breeding & Genetics, CSK Himachal Pradesh Agricultural University, Palampur, HP, India

- P37 The cytogenetic monitoring of environmental mutagens on the domestic animals bred in Japan.**
M. SHIRAI¹ and S. MURAMATSU²
¹Ibaraki Pref. Inst. Pub. Health, ²Jpn. Livestock Tech. Ass., Japan
- P38 Studies on genetic improvement and idioplasmic creation of *Salvia Miltiorrhiza* Bunge**
II. The Induction and Identification of the Autotetraploid of *Salvia Miltiorrhiza* f. alba
Li CHEN and Xiulan LI
The College of Life Sciences, Nankai Univeisity, Tianjin, China
- P39 Studies on genetic improvement and idioplasmic creation of *Salvia Miltiorrhiza* Bunge**
III. Creation of triploid *Salvia miltiorrhiza* Bunge and analysis of its heterosis ratio
Li CHEN, Xiulan LI and Chengbin CHEN
The College of Life Sciences, Nankai Univeisity, Tianjin, China
- P40 Studies on genetic improvement and idioplasmic creation of *Salvia Miltiorrhiza* Bunge**
IV. The advantage of triploid *Salvia miltiorrhiza* Bunge and DNA methylation analysis
Li CHEN, Xiulan LI, Lei ZHAO and Fengping DON
The College of Life Sciences, Nankai Univeisity, Tianjin, China
- P41 Studies on genetic improvement and idioplasmic creation of *Salvia Miltiorrhiza* Bunge**
V. Heterosis fixation of triploid *Salvia miltiorrhiza* Bunge and new variety breeding
Li CHEN and Xiulan LI
The College of Life Sciences, Nankai Univeisity, Tianjin, China
- P42 Variation and complementation of genomes of cultured wheat cells and the somatic hybrids with oat chromatin**
Fengning XIANG, Junfeng WANG, Chunhui XU and Guangmin XIA*
School of Life Sciences, Shandong University, Jinan, China, *corresponding authors
- P43 Sequence polymorphism and chromosomal localization of 5s rDNA of three cultivated varieties (CV) of sweet potato**
(*Ipomoea batatas* Lam.)
Eun Young CHOI, Jun Hyung SEO, Bong Bo SEO and Ho Sung YOON
Department of Biology, College of Natural Science, Kyungpook National University, Korea