

8:30

Registration

9:15 - 9:25 (2F Auditorium)

Opening Remarks

Tomonari MATSUDA
 President of the 47th JEMS Meeting
 Research Center for Environmental Quality Management, Kyoto University

9:25 - 10:20 (2F Auditorium)

Platform Session 1 Detection methods

Presentation 10 min, Discussion 3 min

Chairpersons: Kenichi MASUMURA (National Institute of Health Sciences)
 Akira SASSA (Chiba University)

- | | | |
|------------------------------|--------------|--|
| <p>O-1
(P-19)</p> | <p>9:25</p> | <p>Development of a novel, highly accurate genome sequencing method and its application to genome-wide analysis of chemical mutation signatures
 <u>Shoji MATSUMURA</u>¹, Hirayuki SATO², Yuki OTSUBO¹, Masayuki YAMANE¹, Osamu MORITA¹
 ¹R&D - Safety Science Research, Kao Corporation,
 ²R&D - Analytical Science Research, Kao Corporation</p> |
| <p>O-2
(P-34)</p> | <p>9:39</p> | <p>Absolute quantification of γH2AX of multiple organs in a mouse
 <u>Shun MATSUDA</u>, Sayaka WANIBUCHI, Toshihiko KASAHARA
 Safety Evaluation Center, Ecology & Quality Management Div., CSR Div., FUJIFILM Corporation</p> |
| <p>O-3
(P-55)</p> | <p>9:53</p> | <p>Development of a novel <i>in vitro</i> micronucleus test using human iPS cell-derived lymphocytes
 <u>Ryota KOBAYASHI</u>¹, Katsunori SASAKI¹, Sachiko KITAMOTO¹, Koichi SAITO¹, Ayako KUMAGAI², Shuichi KITAYAMA², Yohei KAWAI², Shin KANEKO²
 ¹Sumitomo Chemical, Co., Ltd.,
 ²Center for iPS Cell Research and Application (CiRA), Kyoto University</p> |
| <p>O-4
(P-81)</p> | <p>10:07</p> | <p>Evaluation of an epigenetic mutagen detection system using yeast transformant carrying human <i>DNMT</i> genes
 <u>Kei-ichi SUGIYAMA</u>, Hiroko FURUSAWA, Mawo KINOSHITA, Petr GRUZ, Masamitsu HONMA
 Division of Genetics and Mutagenesis, National Institute of Health Sciences</p> |

9:25 - 10:20 (1F Hall)

Platform Session 2 Genotoxicity

Presentation 10 min, Discussion 3 min

Chairpersons: Keiko INAMI (Sanyo-Onoda City University)
Shuichi MASUDA (University of Shizuoka)

O-5 9:25 **Construction of DNA damage-sensing reporter assay yeasts and evaluation of heavy metal genotoxicity**

(P-62)

Motoshi NISHIMURA, Sayoko ITO-HARASHIMA, Masanobu KAWANISHI,
Takashi YAGI

Department of Biological Science, Graduate School of Science, Osaka Prefecture University

O-6 9:39 **Whole genome analysis in A / J and B6 mice which were exposed low-dose ¹³⁷Cs internal over many generations**

(P-43)

Hiroo NAKAJIMA¹, Mizuki OHNO², Hiroshi ISHIHARA³, Masatoshi SUZUKI⁴,
Satoru ENDO⁵, Daiji ENDO⁶, Teruhisa TSUZUKI⁷, Takeshi TODO¹

¹Institute for Radiation Sciences, Osaka University,

²Dept. of Medical Biophysics and Radiation Biology, Faculty of Med. Sci., Kyushu Univ.,

³Internal Decorporation Res. Team, Dept. of Basic Med. Sci. for Rad. Damag., Natl. Inst. Radiological Sciences, Natl. Inst. Quantum and Radiological Science and Technology,

⁴Institute for Disaster Reconstruction and Regeneration Research, Tohoku Univ.,

⁵Graduate School of Engineering, Hiroshima Univ.,

⁶School of Veterinary Medicine, Department of Veterinary Medicine, Rakuno Gakuen Univ.,

⁷Advanced Science Research Center, Fukuoka Dental College

O-7 9:53 **Chemical structures and antimutagenic Effects of triterpenoids from leaves of *Lansium domesticum***

(P-38)

Takahiro MATSUMOTO¹, Stephen TEO², Takahiro KITAGAWA¹, Yuuka ANAI¹,
Haji Sapuan bin AHMAD², Tetsushi WATANABE¹

¹Kyoto Pharmaceutical University, ²Forest Department Sarawak

O-8 10:07 **UVA irradiated N-nitrosopyrrolidine induced micronucleous in human keratinocyte cell line (HaCaT)**

(P-16)

Emi SENO¹, Naomi TOMOZANE¹, Sakae ARIMOTO^{1,2}

¹Okayama University Faculty of Pharmaceutical Sciences,

²Okayama University Graduate School of Medicine Dentistry and Pharmaceutical Sciences

10:40 - 12:40 (2F Auditorium)

Symposium 1 New horizon of medical-engineering cooperation

Chairpersons: Takeji TAKAMURA (Kanagawa Institute of Technology)
Katsuhito KINO (Tokushima Bunri University)

S1-1 10:41 **Generation and biological implications of guanine oxidation products**

Katsuhito KINO

Kagawa School of Pharmaceutical Sciences, Tokushima Bunri University

- S1-2** 11:05 **Toward Functional Biomaterial: Design and Construction of Coherently Dynamic, Auxetic Two-Dimensional Protein Crystals**
Yuta SUZUKI¹, Giovanni CARDONE¹, Robert ALBERSTEIN¹, David RESTREPO², Pablo D ZAVATTIERI², Francesco PAESANI¹, Timothy S BAKER¹, F Akif TEZCAN¹
¹Department of Chemistry and Biochemistry, University of California, San Diego,
²School of Civil Engineering, Purdue University
- S1-3** 11:29 **In silico toxicity prediction based on artificial intelligence**
Yoshihiro UESAWA
Department of Medical Molecular Informatics, Meiji Pharmaceutical University
- S1-4** 11:53 **Exfoliating and dispersing two-dimensional nanosheets with photosensitizer for cancer phototherapy**
Naoki KOMATSU
Graduate School of Human and Environmental Studies, Kyoto University
- S1-5** 12:17 **Rational design of tailor-made antitumor agents**
Hiroschi SUGIYAMA^{1,2}
¹Graduate School of Science, Kyoto University, ²Institute for Integrated Cell-Material Sciences

13:40 - 14:35 <2F Auditorium>

Platform Session 3 Carcinogenesis and cancer genome Presentation 10 min, Discussion 3 min

Chairpersons: Manabu YASUI (National Institute of Health Sciences)
Mizuki OHNO (Kyushu University)

- O-9** 13:40 **Mechanism of radiation-induced tumor development in *Apc*^{Min/+} mice**
(P-48) Megumi SASATANI¹, Daisuke IIZUKA², Hidehiko KAWAI³, Elena ZAHARIEVA¹, Kenji KAMIYA¹
¹Research Institute for Radiation Biology and Medicine,
²National Institutes for Quantum and Radiological Science and Technology,
³Graduate School of Biomedical and Health Sciences (Pharmaceutical Sciences), Hiroshima University
- O-10** 13:54 **Comprehensive DNA analysis for DNA modification and reporter gene mutation assay to investigate elemicin-induced hepatocarcinogenesis using gpt delta rats**
(P-49) Yuji ISHII¹, Liang SHI¹, Shinji TAKASU¹, Aki KIJIMA¹, Takehiko NOHMI¹, Kumiko OGAWA¹, Takashi UMEMURA^{1,2}
¹Division of Pathology, National Institute of Health Sciences,
²Faculty of Animal Health Technology, Yamazaki University of Animal Health Technology
- O-11** 14:08 **Analysis of chromosomal abnormality in *rev3l* mutants of Medaka fish**
(P-51) Yoshihiro FUJIKAWA¹, Tomoko FUJIWARA², Ayuko SATO³, Tetsushi SAKUMA⁴, Takashi YAMAMOTO⁴, Seiji KODAMA⁵, Tohru TSUJIMURA³, Takeshi TODO¹
¹Institute of Radiation Science, Osaka University, ²Graduate School of Medicine, Osaka University,
³Department of Pathology, Hyogo College of Medicine,
⁴Graduate School of Science, Hiroshima University,
⁵Graduate School of Science, Osaka Prefecture University
- O-12** 14:22 **Whole genome sequencing analysis elucidates interactions between environmental factors and causes of human cancer**
(P-52) Yukari TOTSUKA¹, Haruna SATO¹, Tomonari MATSUDA², Mamoru KATO³, Asmaa ELZAWAHRY³, Osamu ENDO⁴
¹Div. Carcinogenesis & Cancer Prevent., Natl. Cancer Ctr. Res. Inst. Tokyo, Japan,
²Research Center for Environmental Quality Management, Kyoto Univ., Shiga, Japan,
³Dept. Bioinformatics, Natl. Cancer Ctr. Res. Inst. Tokyo, Japan,
⁴Laboratory of Environmental Hygiene, School of Life and Environmental Science, Azabu University, Kanagawa, Japan

13:40 - 14:35 〈1F Hall〉

Platform Session 4 Genome and epigenome instability Presentation 10 min, Discussion 3 min

Chairpersons: Yuko IBUKI (University of Shizuoka)
Yoshinori OKAMOTO (Meijo University)

- O-13** 13:40 **Knockout of ribonuclease H2 increases ribonucleotides in the genome DNA of NIH3T3 cells**
(P-67)
Motoki TSUKIASHI, Misato BABA, Kohei HIMEDA, Kenji KOJIMA, Teisuke TAKITA, Kiyoshi YASUKAWA
Graduate School of Agriculture, Kyoto University
- O-14** 13:54 **Novel insight into the mechanism of fatty aldehyde metabolism involving Fanconi anemia proteins**
(P-68)
Wataru SAKAI^{1,2,3}, Yukie OTSUKI^{1,2}, Motonari GOTO^{1,2}, Megumi INUI^{1,3}, Shun MATSUDA⁴, Tomonari MATSUDA⁴, Kaoru SUGASAWA^{1,2,3,4}
¹Biosignal Research Center, Kobe University,
²Department of Biology, Graduate School of Science, Kobe University,
³Department of Biology, Faculty of Science, Kobe University,
⁴Research Center for Environmental Quality Management, Graduate School of Engineering, Kyoto University
- O-15** 14:08 **A low-dose bisphenol-A exposure during fetal stage might alter epigenome in the mouse hippocampus**
(P-82)
Seiichiroh OHSAKO¹, Hisaka KURITA³, Toshiyuki SAITO², Toshiki AIBA²
¹Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo,
²Department of Radiation Effects Research, National Institutes for Quantum and Radiological Science and Technology,
³Laboratory of Medical Therapeutics and Molecular Therapeutics, Gifu Pharmaceutical University
- O-16** 14:22 **HDAC inhibitor enhances γ -H2AX induced by Benzo[a]pyrene**
(P-83)
Miki TANAKA¹, Yukako KOMAKI¹, Tatsushi TOYOOKA², Yuko IBUKI¹
¹Department of Environmental and Life Sciences, University of Shizuoka,
²Japan Organization of Occupational Health and Safety

14:50 - 15:50 〈3F Foyer〉

Poster Session Core time for odd numbers

16:00 - 16:50 〈2F Auditorium〉

General Meeting & Awards Ceremony

16:50 - 18:00 <2F Auditorium>

Award Lecture

Chairperson: Masamitsu HONMA (National Institute of Health Sciences)

JEMS Award 2018

AW 16:50

Risk assessment based on genotoxic mechanisms of action, and international standardization of *in vivo* comet assay

Yoshifumi UNO

Safety Research Laboratories, Sohyaku. Innovative Research Division, Mitsubishi Tanabe Pharma Corporation

JEMS Encouragement Award 2018

EA-1 17:20

Study on the standardization of the *Pig-a* assay: the development of PIGRET assay and its technical foundation

Takafumi KIMOTO

Toxicology Research Department, Teijin Institute for Bio-medical Research, Teijin Pharma Limited

EA-2 17:40

Study on the standardization of the *Pig-a* assay: the promotion of the validation study and the application of a human *PIG-A* assay

Katsuyoshi HORIBATA

Division of Genetics and Mutagenesis, National Institute of Health Sciences

18:10 - 19:30 <1F Hall>

Banquet

研究会定例会

プログラム

Program

受賞講演

特別講演

シンポジウム

ワークショップ

一般口演

ポスター

人名索引

8:30

Registration

9:00 - 10:00 (2F Auditorium)

Workshop 1 New cell-culture technologies in toxicology

Chairpersons: Sachiko KITAMOTO (Sumitomo Chemical Co., Ltd.)
Shun MATSUDA (FUJIFILM Corporation)

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|-------------|------|--|
| W1-1 | 9:01 | <p>MPS (microphysiological system) As Promising Wet Human-in-vivo Simulator
 <u>Toshiyuki KANAMORI</u>
 Biotechnology Research Institute for Drug Discovery, National Institute of Advanced Industrial Science and Technology</p> |
| W1-2 | 9:23 | <p>Micro/Nanoengineered <i>in vitro</i> human model
 <u>Ken-ichiro KAMEI</u>
 Kyoto University</p> |
| W1-3 | 9:45 | <p>A trial study on the application of MPS (Microphysiological System) to mutagenicity assessment
 -"Liver-connected" <i>in vitro</i> micronucleus assay-
 <u>Katsunori SASAKI</u>
 Sumitomo Chemical Co., Ltd.</p> |

10:10 - 11:30 (2F Auditorium)

Workshop 2 (International Session) Evaluation and regulation of environmental pollutants

Chairpersons: Masanobu KAWANISHI (Osaka Prefecture University)
Yukako KOMAKI (University of Shizuoka)

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|-------------|-------|--|
| W2-1 | 10:10 | <p>Prioritization of chemicals using a multi-country regulatory data-driven hazard assessment
 <u>Salmaan Hussain INAYAT-HUSSAIN</u>
 Petroliam Nasional Berhad</p> |
| W2-2 | 10:30 | <p>Occurrence of emerging contaminants in swimming pools and wastewater treatment plants in Taiwan
 <u>Pei-Hsin CHOU, Wen-Ting SHIH, Bou-Jyun CHEN</u>
 Department of Engineering, National Cheng Kung University, Taiwan</p> |
| W2-3 | 10:50 | <p>Detection of various environmental pollutants by yeast-based reporter assay systems
 <u>Sayoko ITO-HARASHIMA, Masanobu KAWANISHI, Takashi YAGI</u>
 Department of Biology, Graduate School of Science, Osaka Prefecture University</p> |
| W2-4 | 11:10 | <p>In vivo mutagenesis of airborne particles in an urban area
 <u>Yasunobu AOKI</u>
 Center for Health and Environmental Risk Research, National Institute for Environmental Studies</p> |

11:35 - 12:35 〈3F Foyer〉

Poster Session Core time for even numbers

13:40 - 15:00 〈2F Auditorium〉

Special Lecture (Award Lecture of the 47th Annual Meeting of JEMS)

Chairperson: Tomonari MATSUDA (Research Center for Environmental Quality Management, Kyoto University)

SL-1 13:40 More “Biological View” for Future Environmental Stress Response Research

Tsuyoshi IKURA

Department of Genome Biology, Radiation Biology Center, Graduate School of Biostudies, Kyoto University

SL-2 14:20 Challenge to develop safer drugs based on the genotoxic tamoxifen studies

Shinya SHIBUTANI

Department of Pharmacological Sciences, School of Medicine, State University of New York at Stony Brook

15:20 - 17:20 〈2F Auditorium〉

Symposium 2 Studies of Higher-order Genome Damage

Chairpersons: Isao KURAOKA (Faculty of Science, Fukuoka University)

Kaoru SUGASAWA (Biosignal Research Center, Kobe University)

S2-1 15:20 A study of DNA lesions repaired by human nucleotide excision repair

Isao KURAOKA

Department of Chemistry, Faculty of Science, Fukuoka University

S2-2 15:44 Higher-order regulation of nucleotide excision repair mediated by chromatin structures

Masayuki KUSAKABE¹, Erina KAKUMU^{1,2}, Akari KATO^{1,2}, Fumika KURIHARA^{1,2}, Kanako KUSAO^{1,3}, Masayuki YOKOI^{1,2,3}, Wataru SAKAI^{1,2,3}, Kaoru SUGASAWA^{1,2,3}

¹Biosignal Research Center, Kobe University, ²Graduate School of Science, Kobe University,

³Faculty of Science, Kobe University

S2-3 16:08 Identification of histone residues required for homologous recombination repair

Masayuki SEKI, Yu NAKABAYASHI

Department of Medical and Pharmaceutical Sciences, Tohoku Medical and Pharmaceutical University

S2-4 16:32 Retrotransposon as an endogenous mutagen

Takuma SHIRAKI

BOST, Kindai University

S2-5 16:56 Regulation of DNA repair to prevent chromosome translocations

Satoshi TASHIRO

RIRBM, Hiroshima University

17:20 - 17:35 〈2F Auditorium〉

The Best Presentation Awards Ceremony & Closing Remarks

Poster Session

Poster View Time: November 1 (Thu), 12:00 - November 2 (Fri), 13:00

Poster Presentation: November 1 (Thu), 14:50 - 15:50 [Core time for odd number]
November 2 (Fri), 11:35 - 12:35 [Core time for even number]

DNA damage

- P-1 The analysis of the cluster DNA lesion by the environmental mutagen**
Toshiaki NAKANO^{1,2}, Xu XU², Ryouta KANAMOTO², Ryouichi HIRAYAMA¹, Akiko UZAWA¹, Hiroshi IDE²
¹National Institute for Quantum and Radiological Science and Technology, ²Hiroshima University
- P-2 *In vitro* genotoxicity analyses of *E. coli* producing colibactin**
Yuuta HISATOMI¹, Yoshimitsu ODA¹, Chiaki SHIMOHARA¹, Yuta TSUNEMATSU², Michio SATO², Yuichiro HIRAYAMA², Noriyuki MIYOSHI², Yuji IWASHITA³, Yuko YOSHIKAWA⁴, Takashi YAGI¹, Haruhiko SUGIMURA³, Keiji WAKABAYASHI², Kenji WATANABE², Masanobu KAWANISHI¹
¹Osaka Pref Univ, Sci, ²Univ Shizuoka, Pharm, ³Hamamatsu Univ Med, Med, ⁴Nippon Ved Life Sci Univ, Vet
- P-3 Intra-day and inter-day variations in urinary 8-OHdG levels**
Yun-Shan LI¹, Yuya KAWASAKI¹, Shintaro WATANABE², Kazuaki KAWAI¹
¹Dept. Environ. Oncol., Univ. Occup. Environ. Health, Japan, ²Japan Marine United Corporation
- P-4 Different mechanisms of DNA damage induced by flavonoids morin in the presence of Cu(II) and Fe(III)**
Yurie MORI¹, Shinya KATO², Shiho OHNISHI³, Shosuke KAWANISHI³, Yusuke HIRAKU¹, Mariko MURATA¹, Shinji OIKAWA¹
¹Department of Environmental and Molecular Medicine, Mie University, ²Radioisotope Facilities for Medical Science, Mie University, ³Faculty of Pharmaceutical Sciences, Suzuka University of Medical Science
- P-5 Comprehensive analysis of DNA adducts (DNA adductome analysis) derived from 1,2-dichloropropane responsible for bile duct cancer in printing industry workers**
Yuya MAESAKO^{1,2}, Kazuhiro SHIIZAKI², Takeji TAKAMURA³, Yukari TOTSUKA¹
¹National Cancer Center Research Institute, Div. Cancer Dev., ²Graduate School of Life Sciences, Toyo University, ³Kanagawa Institute of Technology
- P-6 Metabolomics and DNA adductome analysis of urinary bladder carcinogen o-toluidine**
Yuya TAJIMA¹, Takeshi TOYODA², Yuichiro HIRAYAMA¹, Tsutomu HASHIDUME¹, Kohei MATSUSHITA², Kumiko OGAWA², Kenji WATANABE¹, Yukari TOTSUKA³, Keiji WAKABAYASHI¹, Noriyuki MIYOSHI¹
¹University of Shizuoka, ²National Institute of Health Sciences, ³National Cancer Center Research Institute
- P-7 Application of the DNARNa adductome method for nucleic acid injury investigation of a thiazolidinedione group compound**
Toshihide TAKESHITA¹, Yuu YAMAZEKI², Yumiko KEUMI², Robert A. KANALY¹
¹Department of Life and Environmental System Science, Graduate School of Nanobioscience, Yokohama City University, ²Department of Life and Environmental Science, International College of Arts and Sciences, Yokohama City University
- P-8 Study on the phosphorylation of histone H2AX induced by various metals**
Hiroki KASHIWAGI, Tatsushi TOYOOKA, Rui-Sheng WANG
National Institute of Occupational Safety and Health, Japan
- P-9 Evaluation of genotoxicity of colibactin produced by *pks*⁺ *E. coli***
Takehiro YAMANAKA, Tomonari MATSUDA
Graduate School of Engineering, Kyoto University

P-10 Development of a mass spectrometry data based-database of DNA adductKousuke ISHINO¹, Yuya MAESAKO², Zenya NAITO¹, Yukari TOTSUKA²¹Department of Integrated Diagnostic Pathology, Graduate School of Medicine, Nippon Medical School,²Division of Carcinogenesis & Cancer Prevention, National Cancer Center Research Institute**Mechanism of genotoxicity****P-11 Verification of the chemical compound which was a conflict result in a micronucleus test and chromosomal aberration test**Toshitaka TAKAHASHI, Takeru NIITSUMA, Kiyoshi SASAKI, Miki KURATOMI,

Kumiko KAWAKAMI, Saki TAMURA, Hajime SUI

HATANO Research Institute, Food and Drug Safety Center

P-12 The effect of surface modification of nanomaterials on genotoxicityShoma KAMIO^{1,2}, Masatoshi WATANABE³, Kazuhiro SHIIZAKI², Yukari TOTSUKA¹¹National Cancer Center Research Institute, Div. Cancer Dev., ²Toyo University,³Dep. Once. Pathol., Sch. Med., Mie Univ.**P-13 The aspects of copper ion in yeast cells expressing familial amyotrophic lateral sclerosis (fALS) type Cu/Zn-SOD**Shin OKAMURA¹, Moemi KOBAYASHI¹, Akiho KANEKO¹, Keiichiro HIRATSU²,Tatsuo NUNOSHIBA¹¹College of Liberal Arts, International Christian University,²Department of Applied Chemistry, National Defense Academy**P-14 Study on genotoxic property of 2,4-dimethylaniline and its underlying mechanism**Tatsushi TOYOOKA¹, Yonggang QI², Hiroki KASHIWAGI¹, Yuki YANAGIBA¹, Hisayoshi OTHA²,Shigeki KODA¹, Rui-sheng WANG¹¹Industrial Toxicology and Health Effects Research Group, National Institute of Occupational Safety and Health, Japan,²Department of Environmental, Occupational Health and Toxicology, Graduate School of Medical Sciences, Kitasato University, Japan**P-15 Induction of gene mutation through the generation of reactive oxygen species by phenyl hydroquinone, an Ames test-negative carcinogen, in TK6 cell**Ayumi YAMAMOTO, Takuya MIYAMOTO, Manal ZORIGTBAATAR

Department of Industrial System Engineering, National Institute of Technology, Hachinohe College

P-16 (O-8) UVA irradiated N-nitrosopyrrolidine induced micronucleous in human keratinocyte cell line (HaCaT)Emi SENO¹, Naomi TOMOZANE¹, Sakae ARIMOTO^{1,2}¹Okayama University Faculty of Pharmaceutical Sciences,²Okayama University Graduate School of Medicine Dentistry and Pharmaceutical Sciences**P-17 Changes of genotoxicity of acrylamide and its mechanism in diabetes condition**Kenya ICHIKAWA¹, Ryo INAGAKI¹, Kohei UTINO¹, Hiroshi HONDA², Yuko SHIMAMURA¹,Shuichi MASUDA¹¹Graduate School of Integrated Pharmaceutical and Nutritional Sciences, ²Safety Science Research, Kao Corporation**Genotoxicity tests; mutation****P-18 Development of *Salmonella typhimurium* TA100 mutagenicity assay using highly accurate genome sequencing method**Yuki OTSUBO, Shoji MATSUMURA, Masayuki YAMANE, Osamu MORITA

R&D - Safety Science Research, Kao Corporation

P-19 (O-1) Development of a novel, highly accurate genome sequencing method and its application to genome-wide analysis of chemical mutation signaturesShoji MATSUMURA¹, Hirayuki SATO², Yuki OTSUBO¹, Masayuki YAMANE¹, Osamu MORITA¹¹R&D - Safety Science Research, Kao Corporation, ²R&D - Analytical Science Research, Kao Corporation

P-20 **Mutagenic evaluations for benzene and procarbazine by gene mutation test using TK6 cells**
Mayu FUJIKAWA, Ryoko MATSUYAMA, Sachiko KITAMOTO
 Sumitomo Chemical Co., Ltd.

P-21 **Effect of solvents in the Ames test**
Kenichiro SUZUKI, Michiyo OBA, Sawako KASAMOTO, Shoji MASUMORI
 BioSafety Research Center

P-22 **An evaluation of TK gene mutation assay as follow-up approaches for positive results in the Ames test: Collaborative Study by MMS**
Manabu YASUI¹, Akiko UKAI¹, Takayuki FUKUDA², Jiro MANIWA³, Haruna YAMAMOTO⁴, Takashi IMAMURA⁵, Saori FUJISHIMA⁶, Naoko OTANI⁷, Kazunori NARUMI⁸, Kaori MATSUZAKI⁹, Yuki OKADA¹⁰, Munehiro NAKAGAWA¹¹, Maya UEDA¹², Kumiko OGAWA¹³, Masamitsu HONMA¹
¹Div. Genetics Mutag., Nat. Inst. Health Sci., ²BoZo R.C., ³AstraZeneca KK., ⁴Japan Tobacco Inc., ⁵Ina Res. Inc., ⁶CERI, ⁷Astellas Pharma, ⁸YAKULT HONSHA, ⁹Chugai Pharm., ¹⁰Teijin Pharma, ¹¹LSI Medience, ¹²ANPYO, ¹³Div. Pathol., NIHS

P-23 **Investigation of short-term evaluation in transgenic rodent mutation assay**
Kunio WADA, Yuzo TAKEZAWA, Misaki ABE, Kyomu MATSUMOTO
 Toxicology Division, The Institute of Environmental Toxicology

P-24 **Comparison of genotoxic evaluation of mouse lymphoma assay and TK assay using TK6 cells with phenobarbital**
Takuya KANNO, Asuka KOMATSU, Mitsuhide OGAWA, Masayuki KATO, Shigekazu SHIMIZU, Yasuki AKIE
 CMIC Pharma Science Co., Ltd., Bioresearch Center

P-25 **An evaluation of TK gene mutation assay: Collaborative Study by MMS**
Maya UEDA, Masahito FUKUMURO, Michiyo OBA, Sawako KASAMOTO, Shoji MASUMORI
 BioSafety Research Center Inc.

P-26 **Comparison of sensitivity between TA1537 and TA97 for the miniaturized Ames test**
Yoko INOUE, Ryoko MATSUYAMA, Sachiko KITAMOTO
 Sumitomo Chemical Co., Ltd.

Genotoxicity tests; chromosomal aberration

P-27 **Effect of recovery time in the chromosomal aberration test using cultured mammalian cells (part 8)**
Hiroshi SEKI, Toshio SOFUNI, Yasushi NARABE
 Safety Studies Section, Special Chemistry Division, BML, INC.

P-28 **Application of siRNA Approach for Investigating the Mechanism of Action for Micronucleus Induction**
Tatsuya KATO, Junichi SUMITOMO, Hideaki MITSUI, Ayaka FURUKAWA, Katsuya YAMADA, Makiko NAKAMARU, Eiji YAMAMURA, Shigeharu MUTO, Toshinobu SHIMIZU, Naoki INAMURA, Yoshifumi UNO
 Safety Research Laboratories, Sohyaku. Innovative Research Division, Mitsubishi Tanabe Pharma Corporation

P-29 **Basic data of the *in vitro* micronucleus test with TK6 cells -Especially about historical positive control data-**
Shunji FURUKUMA, Shota YAMAMOTO, Nobuyoshi FUJII
 UBE Scientific Analysis Laboratory, Inc.

P-30 **The study of *in vitro* micronucleus test using CHL cells —re-evaluation of compounds inducing numerical aberrations—**
Takeru NIITSUMA, Toshitaka TAKAHASHI, Kumiko KAWAKAMI, Saki TAMURA, Misato SOEDA, Kiyoshi SASAKI, Miki KURATOMI, Hajime SUI
 Hatano Research Institute Food and Drug Safety Center

- P-31** **Effect of pH shifts on in vitro micronucleus assay using TK6 cells**
Sawako KASAMOTO, Maya UEDA, Michiyo OBA, Shoji MASUMORI
BioSafety Research Center Inc.

Genotoxicity tests; others

- P-32** **Estimation of genotoxicity using Bhas 42 cell-derived reporter cell line**
Moeka NAMIKI¹, Kana MIZUNUMA¹, Masateru TANABE², Yuri HIGUCHI², Kazuho INABA²,
Masashi SEKIMOTO²
¹Graduate School of Environmental Health, Azabu University, ²Azabu University, Life and Environment Science
- P-33** **An evaluation of γ H2AX focus induction in TK6 cells as a follow-up approach after positive results in the Ames test; an optional part of a collaborative study by MMS**
Akira TAKEIRI¹, Kaori MATSUZAKI¹, Kenji TANAKA¹, Kumiko OGAWA², Manabu YASUI³,
Masamitsu HONMA³, Masayuki MISHIMA¹
¹Research Div., Chugai Pharmaceutical Co., Ltd., ²Div. Pathol., NIHS, ³Div. Genetics & Mutag., NIHS
- P-34** **Absolute quantification of γ H2AX of multiple organs in a mouse**
(O-2) Shun MATSUDA, Sayaka WANIBUCHI, Toshihiko KASAHARA
Safety Evaluation Center, Ecology & Quality Management Div., CSR Div., FUJIFILM Corporation
- P-35** **Further improvement of high through-put fluctuation Ames test (Part XIII)**
Hajime SUI, Kumiko KAWAKAMI, Saki TAMURA, Misato SOEDA, Takeharu TAKIZAWA
Hatano Research Institute, Food and Drug Safety Center

Antimutagenesis, anticarcinogenesis

- P-36** **Inhibitory effects of antioxidants in photomutagenicity of psoralen and angelicin**
Mie WATANABE-AKANUMA, Rie TAKAGI, Yuto TAKEI, Hirobumi ASAI
KUREHA CORPORATION, Safety Research Center
- P-37** **Identification of Antimutagenic Components Derived from *Spatholobus suberectus* Dunn on Carcinogenic *N*-Methyl-*N*-nitrosourea**
Takumi HARADA¹, Keiko INAMI^{1,2}, Masataka MOCHIZUKI^{1,2}
¹Tokyo University of Science, ²Sanyo-Onoda City University
- P-38** **Chemical structures and antimutagenic Effects of triterpenoids from leaves of *Lansium domesticum***
(O-7) Takahiro MATSUMOTO¹, Stephen TEO², Takahiro KITAGAWA¹, Yuuka ANAI¹,
Haji Sapuan bin AHMAD², Tetsushi WATANABE¹
¹Kyoto Pharmaceutical University, ²Forest Department Sarawak
- P-39** **Chimal structures and anti-mutagenicity of constituents of FBRA**
Tetsushi WATANABE¹, Takahiro MATSUMOTO¹, Masumi KIBI¹, Kaho TATSUMI¹,
Masataka SHIKANAI², Hiroshi KOBAYASHI³, Futoshi OKADA⁴
¹Kyoto Pharmaceutical University, ²Genmai Koso Co., Ltd., ³Sapporo Cancer Seminar Foundation,
⁴Tottori University
- P-40** **Antimutagenic activity of Kale extract: Study by Ames test and Bhas 42 transformation assay**
Kana MIZUNUMA¹, Yoshiko KONISHI^{1,2}, Masashi SEKIMOTO², Osamu ENDO²
¹Azabu Graduate School of Environmental Health, ²Azabu University Life Environment
- P-41** **Analysis of antimutagenic activity of quinazoline compound AK-01 using Ames test**
Yuri HIGUCHI¹, Hideki SHIMIZU¹, Tomoko HASHIMOTO², Osamu ENDO¹, Kenji MATSUNO²,
Masashi SEKIMOTO¹
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²School of Advanced Engineering, Kogakuin University

Effects to the next generation · hormesis

- P-42** **Comparison of frequencies of point mutations in male germ cells and inherited mutations in the offspring by transgenic mouse gene mutation assay and whole exome sequencing**
Kenichi MASUMURA¹, Tomoko ANDO¹, Naomi TOYODA-HOKAIWADO¹, Akiko UKAI¹, Takehiko NOHMI^{1,2}, Masamitsu HONMA¹
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²Division of Pathology, National Institute of Health Sciences
- P-43** (O-6) **Whole genome analysis in A / J and B6 mice which were exposed low-dose ¹³⁷Cs internal over many generations**
Hiroo NAKAJIMA¹, Mizuki OHNO², Hiroshi ISHIHARA³, Masatoshi SUZUKI⁴, Satoru ENDO⁵, Daiji ENDO⁶, Teruhisa TSUZUKI⁷, Takeshi TODO¹
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³Internal Decorporation Res. Team, Dept. of Basic Med. Sci. for Rad. Damag., Natl. Inst. Radiological Sciences, Natl. Inst. Quantum and Radiological Science and Technology,
⁴Institute for Disaster Reconstruction and Regeneration Research, Tohoku Univ.,
⁵Graduate School of Engineering, Hiroshima Univ.,
⁶School of Veterinary Medicine, Department of Veterinary Medicine, Rakuno Gakuen Univ.,
⁷Advanced Science Research Center, Fukuoka Dental College
- P-44** **Radiation hormesis: low-dose radiation from A-bombs elongates lifespan and reduces average cancer mortality**
Shizuyo SUTOU
 School of Pharmacy, Shujitsu University
- P-45** **Collaborative study of thresholds for mutagens: proposal of a typical protocol for detection of hormetic responses in cytotoxicity tests**
Shizuyo SUTOU¹, Akiko KOEDA², Kana KOMATSU², Toshiyuki SHIRAGIKU³, Hiroshi SEKI⁴, Kohji YAMAKAGE⁵, Takeru NIITSUMA⁵, Toshiyuki KUDO¹, Akihiro WAKATA⁶
¹Shujitsu University, ²Ina Research Inc., ³Otsuka Pharmaceutical Co., Ltd., ⁴BML Inc.,
⁵Food and Drug Safety Center, ⁶Astellas Pharma Inc.

Carcinogenesis

- P-46** **Bhas 42 CTA by the single protocol combined initiation assay and promotion assay**
Kohji YAMAKAGE
 Hatano Research Institute, Food and Drug Safety Center
- P-47** **Quantitative analysis of DNA adducts in dextran sulfate sodium-induced colitis**
Kengo IKEBATA¹, Atsushi HAKURA², Takehiko NOHMI³, Tomonari MATSUDA¹
¹Graduate School of Engineering, Kyoto University, ²Tsukuba Drug Safety, Eisai. Co. Ltd ,
³Division of Genetics and Mutagenesis, National Institute of Health Sciences
- P-48** (O-9) **Mechanism of radiation-induced tumor development in *Apc*^{Min/+} mice**
Megumi SASATANI¹, Daisuke IIZUKA², Hidehiko KAWAI³, Elena ZAHARIEVA¹, Kenji KAMIYA¹
¹Research Institute for Radiation Biology and Medicine,
²National Institutes for Quantum and Radiological Science and Technology,
³Graduate School of Biomedical and Health Sciences (Pharmaceutical Sciences), Hiroshima University
- P-49** (O-10) **Comprehensive DNA analysis for DNA modification and reporter gene mutation assay to investigate elemicin-induced hepatocarcinogenesis using gpt delta rats**
Yuji ISHII¹, Liang SHI¹, Shinji TAKASU¹, Aki KIJIMA¹, Takehiko NOHMI¹, Kumiko OGAWA¹, Takashi UMEMURA^{1,2}
¹Division of Pathology, National Institute of Health Sciences,
²Faculty of Animal Health Technology, Yamazaki University of Animal Health Technology
- P-50** **Stepwise change of DNA repair activities in mouse *in vitro* multi-step carcinogenesis**
Ryo BANBA, Masanobu KAWANISHI, Takashi YAGI
 Department of Biology, Graduate School of Science, Osaka Prefecture University

- P-51** **Analysis of chromosomal abnormality in *rev3l* mutants of Medaka fish**
(O-11) Yoshihiro FUJIKAWA¹, Tomoko FUJIWARA², Ayuko SATO³, Tetsushi SAKUMA⁴, Takashi YAMAMOTO⁴, Seiji KODAMA⁵, Tohru TSUJIMURA³, Takeshi TODO¹
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- P-52** **Whole genome sequencing analysis elucidates interactions between environmental factors and causes of human cancer**
(O-12) Yukari TOTSUKA¹, Haruna SATO¹, Tomonari MATSUDA², Mamoru KATO³, Asmaa ELZAWAHRY³, Osamu ENDO⁴
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Cell culture · Imaging

- P-53** **Establishment of substrata made of tissue/organ sections for histopathology-based systems for nanotoxicity**
Shungo SAITO^{1,2}, Hiroshi ITAGAKI², Masatoshi WATANABE³, Yukari TOTSUKA¹
¹National Cancer Center Research Institute, Div. Cancer Dev., ²Yokohama National University, ³Mie University
- P-54** **A trial study on the application of MPS (Microphysiological System) to mutagenicity assessment**
-"Liver-connected" *in vitro* micronucleus assay-
Katsunori SASAKI¹, Ryota KOBAYASHI¹, Kiyoshi HIGASHI¹, Sachiko KITAMOTO¹, Koichi SAITO¹, Taku SATOH², Kazumi SHIN², Shinji SUGIURA², Toshiyuki KANAMORI²
¹Sumitomo Chemical Co., Ltd., ²National Institute of Advanced Industrial Science and Technology (AIST)
- P-55** **Development of a novel *in vitro* micronucleus test using human iPS cell-derived lymphocytes**
(O-3) Ryota KOBAYASHI¹, Katsunori SASAKI¹, Sachiko KITAMOTO¹, Koichi SAITO¹, Ayako KUMAGAI², Shuichi KITAYAMA², Yohei KAWAI², Shin KANEKO²
¹Sumitomo Chemical, Co., Ltd., ²Center for iPS Cell Research and Application (CiRA), Kyoto University
- P-56** **Establishment of novel genotoxicity assay system using organoids derived from murine normal epithelial tissues**
Haruna SATO¹, Masako OCHIAI², Toshio IMAI², Yukari TOTSUKA¹
¹Division of Carcinogenesis and Prevention, National Cancer Center Research Institute, ²Department of Animal Experimentation, National Cancer Center Research Institute
- P-57** **Development of SA/NA automated discriminate system for *in vitro* micronucleus test using image analysis**
Toshihiko KASAHARA, Hiroe YOSHIKAWA, Sayaka WANIBUCHI, Miyuki AKIMOTO, Miyuki SHIMODA, Yusuke YAMAMOTO, Masaharu FUJITA, Shun MATSUDA
Safety Evaluation Center, Ecology&Quality Management Div. CSR Div

Environmental pollution · Bioassays

- P-58** **RNA transcriptomics and DNA adduct analyses to investigate the effects of naphthoquinone on bacterial cells**
Toshihide TAKESHITA¹, Yoshihiro TAKAKI², Kazunao MURAYAMA¹, Robert A. KANALY¹
¹Graduate School of Nanobioscience, Yokohama City University, ²Department of Subsurface Geobiological Analysis and Research (D-SUGAR), Japan Agency for Marine-Earth Science and Technology (JAMSTEC)
- P-59** **Establishment of reporter assay yeasts to detect ligands of human liver X receptors (LXRs)**
Tomofumi NOMURA¹, Sayoko ITO-HARASHIMA¹, Kazuhiro SHIIZAKI², Masanobu KAWANISHI¹, Takashi YAGI¹
¹Graduate School of Science, Osaka Prefecture University, ²Faculty of Life Science, Toyo University

- P-60** **Establishment of ligand assay yeasts expressing juvenile hormone and molting hormone receptors of an environmental indicator organism *Daphnia magna***
Erika SANO, Eiji TAKADA, Sayoko ITO-HARASHIMA, Masanobu KAWANISHI, Takashi YAGI
Graduate School of Science, Osaka Prefecture University
- P-61** **Improvement of yeast bioassay systems to detect ligands of thyroid hormone receptor of frogs, *Rana catesbeiana* and *Rana nigromaculata***
Nao MATSUSHITA, Sayoko ITO-HARASHIMA, Masanobu KAWANISHI, Takashi YAGI
Department of Science, Osaka Prefecture University
- P-62** (O-5) **Construction of DNA damage-sensing reporter assay yeasts and evaluation of heavy metal genotoxicity**
Motoshi NISHIMURA, Sayoko ITO-HARASHIMA, Masanobu KAWANISHI, Takashi YAGI
Department of Biological Science, Graduate School of Science, Osaka Prefecture University
- P-63** **Modifying activity of polycyclic aromatic compounds in antigen-induced response**
Kentaro MISAKI¹, Hirohisa TAKANO^{2,3}, Hiroaki KANAZAWA¹, Kenichiro INOUE¹
¹School of Nursing, University of Shizuoka, ²Graduate School of Global Environmental Studies, Kyoto University, ³Graduate School of Engineering, Kyoto University
- P-64** **DNA damage activity of PM 2.5 extracts from different origins**
Daisuke NAKAJIMA, Mayuko YAGISHITA, Miho YAMASAKI, Go SUZUKI, Tomohiro ITO, Akiko FURUYAMA, Kei SATO, Ramasamy SATHIYAMURTHI, Yoshinori KONDO, Yuji FUJITANI, Yoshiyuki TAKAHASHI, Akinori TAKAMI, Akihiro FUSHIMI
National Institute for Environmental Studies
- P-65** **Using RNA-Seq with 11 marker genes to evaluate 1,4-dioxane compared with typical genotoxic and non-genotoxic rat hepatocarcinogens**
Chie FURIHATA¹, Takeshi TOYODA², Kumiko OGAWA², Takayoshi SUZUKI¹
¹Div Mol Target Gene Therapy Products, National Institute of Health Sciences, ²Div Pathology, National Institute of Health Sciences

DNA repair and genome instability

- P-66** **PDIP38 controls the DNA damage tolerance pathways by increasing the relative usage of translesion DNA synthesis over template switching**
Masataka TSUDA¹, Hiroshi IDE¹, Fuchs P. ROBERT², Shunichi TAKEDA³
¹Department of Mathematical and Life Sciences, Graduate School of Science, Hiroshima University, ²Cancer Research Center of Marseille, CNRS, ³Department of Radiation Genetics, Graduate School of Medicine, Kyoto University
- P-67** (O-13) **Knockout of ribonuclease H2 increases ribonucleotides in the genome DNA of NIH3T3 cells**
Motoki TSUKIASHI, Misato BABA, Kohei HIMEDA, Kenji KOJIMA, Teisuke TAKITA, Kiyoshi YASUKAWA
Graduate School of Agriculture, Kyoto University
- P-68** (O-14) **Novel insight into the mechanism of fatty aldehyde metabolism involving Fanconi anemia proteins**
Wataru SAKAI^{1,2,3}, Yukie OTSUKI^{1,2}, Motonari GOTO^{1,2}, Megumi INUI^{1,3}, Shun MATSUDA⁴, Tomonari MATSUDA⁴, Kaoru SUGASAWA^{1,2,3,4}
¹Biosignal Research Center, Kobe University, ²Department of Biology, Graduate School of Science, Kobe University, ³Department of Biology, Faculty of Science, Kobe University, ⁴Research Center for Environmental Quality Management, Graduate School of Engineering, Kyoto University
- P-69** **Large deletion mutations induced by an abasic site analog in human cells**
Tetsuya SUZUKI^{1,2}, Yuri KATAYAMA², Yasuo KOMATSU³, Hiroyuki KAMIYA^{1,2}
¹Graduate School of Biomedical and Health Sciences, Hiroshima University, ²School of Pharmaceutical Sciences, Hiroshima University, ³Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)

- P-70 Roles of Histone Methyltransferase NSD2 in DNA double strand break repair**
Akari TOJO¹, Akira SASSA¹, Manabu YASUI², Masamitsu HONMA², Kiyoe URA¹
¹Graduate School of Science, Chiba University,
²Division of Genetics and Mutagenesis, National Institute of Health Sciences
- P-71 Unique mutations caused by a ribonucleotide in DNA and their induction mechanism**
Ayuna TAKEISHI¹, Manabu YASUI², Hiroyuki SASANUMA³, Shunichi TAKEDA³,
Kaoru SUGASAWA⁴, Masamitsu HONMA², Kiyoe URA¹, Akira SASSA¹
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²The Division of Genetics and Mutagenesis, National Institute of Health Sciences,
³Department of Radiation Genetics, Graduate School of Medicine, Kyoto University,
⁴Biosignal Research Center, Kobe University
- P-72 Function of each TLS polymerase in mutagenesis by various mutagens**
Naoko NAKATANI¹, Akane TAKENOKUCHI¹, Koudai FUKUMOTO¹, Isao KURAOKA²,
Takeji TAKAMURA³, Masanobu KAWANISHI¹, Takashi YAGI¹
¹Department of Biology, Graduate School of Science, Osaka Prefecture University, ²Fukuoka University,
³Kanagawa Institute of Technology
- P-73 The involvement of *E.coli* KsgA and its human homologs in maintenance of genomic stability**
Yuichiro HAYASHI, Qiu-Mei ZHANG-AKIYAMA
Graduate School of Science, Kyoto University
- P-74 Construction of mutagen assay considering transcription coupled DNA repair(TCR)**
Kohei SHIBATA, Kazuhiro SHIIZAKI
Toyo University
- P-75 EXO-3 is responsible for the decline of mobility in *C. elegans***
Xiangji JIANG, Akira YAMASAKI, Qiu-Mei ZHANG-AKIYAMA
Laboratory of Stress Response Biology, Graduate School of Science, Kyoto University
- P-76 Functional Analysis of Endonuclease V from *Arabidopsis thaliana***
Megumi ENDO¹, Shigenori IWAI¹, Isao KURAOKA²
¹Graduate School of Engineering Science, Osaka University, ²Department of Chemistry, Fukuoka University
- P-77 Cell toxicity evaluation of Ethidium Bromide**
Mizuki MORI, Takeji TAKAMURA
Department of Engineering, Kanagawa Institute of technology
- P-78 Oxidation resistance 1 contributes to maintenance of genome stability through regulation of G2/M arrest**
Qiu-Mei ZHANG-AKIYAMA, Ako MATSUI
Graduate School of Science, Kyoto University
- P-79 Purification and substrate specificity of nuclease from snake venom (Protobothrops flavoviridis)**
Yoshifumi ZAITSU, Narumi SHIOI, Isao KURAOKA
Fukuoka University, Faculty of Science, Department of Chemistry
- P-80 Functional analysis of novel human repair protein EEPD1**
Shota UEDA, Isao KURAOKA
Fukuoka University Department of Chemistry, Faculty of Science

Epigenetics · Histone modification

- P-81 Evaluation of an epigenetic mutagen detection system using yeast transformant carrying human DNMT genes**
(O-4) Kei-ichi SUGIYAMA, Hiroko FURUSAWA, Mawo KINOSHITA, Petr GRUZ, Masamitsu HONMA
Division of Genetics and Mutagenesis, National Institute of Health Sciences

P-82 (O-15) A low-dose bisphenol-A exposure during fetal stage might alter epigenome in the mouse hippocampusSeiichiroh OHSAKO¹, Hisaka KURITA³, Toshiyuki SAITO², Toshiki AIBA²¹Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo,²Department of Radiation Effects Research, National Institutes for Quantum and Radiological Science and Technology,³Laboratory of Medical Therapeutics and Molecular Therapeutics, Gifu Pharmaceutical University**P-83 (O-16) HDAC inhibitor enhances γ -H2AX induced by Benzo[a]pyrene**Miki TANAKA¹, Yukako KOMAKI¹, Tatsushi TOYOOKA², Yuko IBUKI¹¹Department of Environmental and Life Sciences, University of Shizuoka,²Japan Organization of Occupational Health and Safety**P-84 Histone methyltransferase NSD2 and DNA damage repair**Kaho HARADA¹, Akira SASSA¹, Shin TAKEUCHI¹, Noritaka ADACHI², Kiyoe URA¹¹Graduate School of Science, Chiba University,²Graduate School of Science of Nanobioscience, Yokohama City University**P-85 A comprehensive analysis of cellular responses to chronic DNA damage**Hidehiko KAWAI¹, Megumi SASATANI², Elena ZAHARIEVA², Hiroyuki KAMIYA¹, Kenji KAMIYA²¹Graduate School of Biomedical and Health Sciences (Pharmaceutical Sciences), Hiroshima University,²Research Institute for Radiation Biology and Medicine, Hiroshima University