Program

Friday, Nov 3

Opening Remark 9:30-9:35

9:30 Masayuki YAMAMOTO
Department of Biochemistry and Molecular Biology, Tohoku Medical Megabank Organization

Keynote Lectures 9:35-11:05

Chairpersons: Masayuki YAMAMOTO (Tohoku Medical Megabank Organization, Japan)
Thomas W. KENSLER (Fred Hutchinson Cancer Center, USA)

KL-1 9:35 **Sixth Environmental Stress Symposium on the KEAP1-NRF2 System Regulating the Molecular Basis of Oxidative Stress Response and Its Perturbation**
Masayuki YAMAMOTO
Department of Biochemistry and Molecular Biology, Tohoku Medical Megabank Organization

KL-2 10:20 **How Important is NRF2 for the Pharmacodynamic Action of "NRF2 Inducers"?**
Thomas W KENSLER[1, 2]
[1]*Translational Research Program, Fred Hutchinson Cancer Center, USA,*
[2]*Department of Environmental Health and Engineering, Johns Hopkins Bloomberg School of Public Health, USA*

Co-sponsored by Chugai Pharmaceutical Co., Ltd.

Break 11:05-11:25

Session 1 11:25-12:25

Molecular Mechanisms of the KEAP1-NRF2 System Function 1

Chairperson: Donna D. ZHANG (University of Arizona, USA)

S1-1 11:25 **NRF2 Buddy for Transcriptional Activation**
Hozumi MOTOHASHI
Tohoku University

S1-2 11:55 **Proximity Proteomic Analysis Reveals Mechanisms of KEAP1 Inactivation by Cysteine Modification and New Connections for NRF2 in Parkinson's Disease**
Michael Ben MAJOR
Department of Cell Biology, Washington University in St. Louis School of Medicine, USA

Lunch time & Poster Discussion (ODD number) 12:25-13:55

Session 2 13:55-16:05

Molecular Mechanisms of the KEAP1-NRF2 System Function 2

Chairperson: Donna D. ZHANG (University of Arizona, USA)

S2-1 13:55 **Nrf2 depletion in the context of Keap1 loss-of-function leads to mitolysosome accumulation**
Albena T DINKOVA-KOSTOVA[1], Sharadha DAYALAN NAIDU[1], Plamena R ANGELOVA[2], Andrey Y ABRAMOV[2]
[1]*Division of Cellular and Systems Medicine, School of Medicine, University of Dundee, UK,*
[2]*UCL Queen Square Institute of Neurology, Queen Square, UK*

S2-2 14:35
Cross-talk of GCN1-GCN2 branch of ISR and Nrf2 pathway in environmental stress response
Ken ITOH
Department of Stress Response Science, Center for Advanced Medical Science, Hirosaki University Graduate School of Medicine

S2-3 15:05
Selenium in control of ferroptosis – potential roles and cross-talk between glutathione peroxidases and thioredoxin reductases
Elias S.J. ARNÉR[1, 2]
[1]Division of Biochemistry, Department of Medical Biochemistry and Biophysics, Karolinska Institutet, [2]Department of Selenoprotein Research and The National Tumor Biology Laboratory, National Institute of Oncology, Hungary

S2-4 15:35 **P-37**
Molecular Basis of Stress Response by the KEAP1-NRF2 System
Takafumi SUZUKI[1, 2], Masayuki YAMAMOTO[1]
[1]Department of Biochemistry & Molecular Biology, Tohoku Medical Megabank Orgnization, Tohoku University, [2]Department of Medical Biochemistry, Tohoku Medical Biochemistry, Tohoku University Graduate School of Medicine

Break 16:05-16:25

Session 3 16:25-18:15

Molecular Mechanisms of the KEAP1-NRF2 System Function 3

Chairperson: Ken ITOH (Hirosaki University, Japan)

S3-1 16:25
From Antioxidant Defense to Iron Homeostasis: NRF2's Multifaceted Guard Against Ferroptosis
Donna D ZHANG
University of Arizona

S3-2 16:55
Keap1-Nrf2 pathway in the cancer therapeutic resistance and anti-tumor immunity
Youngtae JEONG[1], Byungmoo OH[1], Ngoc HOANG[2], Jeongmin KIM[1], Maximilian DIEHN[2]
[1]Department of New Biology, DGIST, [2]Cancer Center, Stanford University

S3-3 17:15
Inhibition of liver fibrosis by Nrf2: antagonism of Nrf2 by TGF-beta
Boushra BATHISH[1], Sharadha DAYALAN NAIDU[1], Thomas S. DIXON[1], Abel ANG[1], Dorothy KISIELEWSKI[1], Pingting BIAN[1], Tadashi HONDA[2], Sourav BANERJEE[1], Albena T. DINKOVA-KOSTOVA[1], John D. HAYES[1]
[1]Division of Cellular Medicine, University of Dundee School of Medicine, [2]Department of Chemistry and Institute of Chemical Biology & Drug Discovery, Stony Brook University

S3-4 17:35 **P-11**
Forced Hepatic Expression of NRF2 or NQO1 Alleviates Hepatic Lipid Accumulation and Hepatocellular Damage in a Lipodystrophy Mouse Model
Nobunao WAKABAYASHI[1], Yoko YAGISHITA[1, 2], Tanvi JOSHI[1], Thomas W KENSLER[1]
[1]Fred Hutchinson Cancer Center, [2]Division of Endocrinology, Columbia University, USA

S3-5 17:55
Mechanisms underlying Nrf2 activation by non-lethal levels of hydrogen peroxide: roles of glutathione sensor neutral sphingomyelinase2, p38 and ERK MAP kinases and prolyl cis/trans isomerase Pin1
Tetsuro ISHII
School of Medicine, University of Tsukuba

Welcome Reception @Cafeteria 18:30-

Saturday, Nov 4

Session 4 9:00-11:00

The KEAP1-NRF2 System and Cancers 1

Chairperson: Hozumi MOTOHASHI (Tohoku University, Japan)

S4-1 9:00
NRF2 and Cancer Immunity
Anna-Liisa LEVONEN
University of Eastern Finland

S4-2 9:30
Pseudohypoxic stabilization of HIF-1α through direct interaction with NRF2 in hepatocellular carcinoma
Jie ZHENG, Su-Jung KIM, Soma SAEIDI, Seong Hoon KIM, Xizhu FANG, Yanymee N. GUILLEN-QUISPE, Hoang Kieu Chi NGO, Young-Joon SURH
College of Pharmacy, Seoul National University

S4-3 10:00
Distinct Nrf2 signaling thresholds mediate lung tumor initiation and progression
Gina M DENICOLA
Department of Metabolism and Physiology, H. Lee Moffitt Cancer Center, USA

S4-4 10:30
Identifying novel vulnerabilities to sensitise KEAP1 mutant lung adenocarcinoma to T cell mediated killing
Kate D. SUTHERLAND[1, 2]
[1]Cancer Biology and Stem Cells Division, The Walter and Eliza Hall Institute of Medical Research, [2]Department of Medical Biology, The University of Melbourne

Break 11:00-11:20

Session 5 11:20-12:50

The KEAP1-NRF2 System and Cancers 2

Chairperson: Anna-Liisa LEVEON (University of Eastern Finland, Finland)

S5-1 11:20 **P-55**
Functional Characterization of CNC-sMAF Heterodimers by the Tethered Dimer Rescue System
Fumiki KATSUOKA[1, 2], Masayuki YAMAMOTO[1, 2]
[1]ToMMo, Tohoku University, [2]INGEM, Tohoku University

S5-2 11:40 **P-54**
Immunoediting of KEAP1-NRF2 mutant tumours is required to circumvent NRF2-mediated immune surveillance
Liam BAIRD
INGEM, Tohoku University

S5-3 12:00
Uncovering Metabolic Bottlenecks in KEAP1-mutant Lung Cancer
Thales PAPAGIANNAKOPOULOS
NYU Grossman School of Medicine

S5-4 12:30
NRF3: The NRF2-Related Transcription Factor Responding to Arginine Depletion in Cancer
Akira KOBAYASHI
Laboratory for Genetic Code, Graduate School of Life and Medical Sciences, Doshisha University

Lunch time & Poster Discussion (EVEN number) 12:50-14:20

Session 6 14:20-15:40

The KEAP1-NRF2 System and Diseases 1

Chairperson: Keiko TAGUCHI (The University of Tokyo, Japan)

S6-1 14:20
NRF1 and NRF2 coordinate osteoclastogenesis and bone remodeling
Zhiyuan LIU[1, 2, 3], Jinzhi WU[1, 2, 3], Wei SHEN[1, 2, 3], Zhe DONG[1, 2, 3], Yanshuai WANG[1, 2, 3], Gang WANG[4], Chengjie CHEN[1, 2], Yiying BIAN[1, 2, 3], Shengnan LIU[1, 2, 3], Huihui WANG[1, 2, 5], Lei ZHANG[6], Jingqi FU[1, 2, 3], Masayuki YAMAMOTO[7], Qiang ZHANG[8], Yuanyuan XU[1, 2, 5], Jingbo PI[1, 2, 3]
[1]Key Laboratory of Environmental Stress and Chronic Disease Control & Prevention Ministry of Education (China Medical University),
[2]Key Laboratory of Liaoning Province on Toxic and Biological Effects of Arsenic (China Medical University),
[3]Program of Environmental Toxicology, School of Public Health, China Medical University,
[4]Experimental and Teaching Center, School of Public Health, China Medical University,
[5]Group of Chronic Disease and Environmental Genomics, School of Public Health, China Medical University,
[6]Center for Genetic Epidemiology and Genomics, School of Public Health, Medical College of Soochow University, China,
[7]Department of Medical Biochemistry, Tohoku University, Japan,
[8]Gangarosa Department of Environmental Health, Rollins School of Public Health, Emory University, USA

S6-2 14:50
New roles of Keap1/Nrf2 signaling in thyroid gland function and thyroid pathophysiology
Gerasimos SYKIOTIS[1], Georgios PSARIAS[1], Sheng HUANG[1], Dionysios CHARTOUMPEKIS[1], Massimo BONGIOVANNI[2], Panos ZIROS[1]
[1]Service of Endocrinology, Diabetology & Metabolism; Lausanne University Hospital and University of Lausanne,
[2]Synlab Pathology, Switzerland

S6-3 15:20
NRF2 and HIF-2α-induced cancer stem cell phenotypes in chronic hypoxic conditions
Mi-Kyoung KWAK, Steffanus P. HALLIS
The Catholic University of Korea, College of Pharmacy

Break 15:40-16:00

Session 7 16:00-17:50

The KEAP1-NRF2 System and Diseases 2

Chairperson: John D. HAYES (University of Dundee, UK)

S7-1 16:00
Pharmacology & toxicology of Nrf2 in the liver
Ian COPPLE
Department of Pharmacology & Therapeutics, University of Liverpool, UK

S7-2 16:30
Defining the role of the NRF2 transcription factor in synaptic maintenance in Alzheimer's disease
Ana I ROJO[1, 2, 3], Daniel CARNICERO-SENABRE[1, 2, 3], Mariana A BARATA[4], Cláudia GIUMAS ALMEIDA[4], Antonio CUADRADO[1, 2, 3]
[1]Department of Biochemistry and Instituto de Investigaciones Biomédicas Alberto Sols UAM-CSIC, Faculty of Medicine, Autonomous University of Madrid, Spain,
[2]Centro de Investigación Biomédica en Red Sobre Enfermedades Neurodegenerativas (CIBERNED),
[3]Instituto de Investigación Sanitaria La Paz (IdiPaz),
[4]iNOVA4Health, CEDOC, NOVA Medical School, NMS, Universidade Nova de Lisboa, Portugal

S7-3 16:50
NRF2 in stress, ageing and disease
Ioannis TROUGAKOS
Faculty of Biology, National and Kapodistrian University of Athens
P-6

S7-4 17:10 **P-14**

The small MAF transcription factor MAFG is a potent driver of melanoma

Florian A KARRETH, Olga VERA, Michael MARTINEZ, Xiaonan XU
Department of Molecular Oncology, H. Lee Moffitt Cancer Center & Research Institute

S7-5 17:30 **P-17**

The efficacy of the novel NRF2 activator CH0924 for acute kidney injury

Masaki HOSHINO[1], Yukari YASUI[1], Shun MITSUMATA[1], Manami IIDA[1], Yui SUGAWARA[1], Atsushi KIMBARA[1], Yuko ITO[2], Hitoshi HAGITA[3], Naoshi HORIBA[1]
[1]Research Division, Chugai Pharmaceutical Co., Ltd., Japan,
[2]Translational Research Division, Chugai Pharmaceutical Co., Ltd., Japan,
[3]Chugai Research Institute for Medical Science Inc., Japan

Round-Table Discussion @ ToMMo atrium 18:15-

Sunday, Nov 5

Session 8 8:40-10:10

The KEAP1-NRF2 System and Drug Development 1

Chairperson: Antonio CUADRADO (Autonomous University of Madrid, Spain)

S8-1 8:40
Developing therapies to target NRF2
Karen T. LIBY
Department of Medicine, Indiana University School of Medicine

Co-sponsored by Kyowa Kirin Co.,Ltd.

S8-2 9:20
Non-Electrophilic NRF2 Activators Promote Wound Healing in Human Keratinocytes and Diabetic Mice and Demonstrate Selective Downstream Gene Targeting
Terry W MOORE[1, 2], May BARAKAT[3, 4], Lin CHEN[3], Brian P DAVID[1], Junhe SHI[3], Angela XU[3], Kornelia J SKOWRON[1], Tatum JOHNSON[1], Reginald WOODS[3, 4], Aparna ANKIREDDY[5], Sekhar P REDDY[2, 5], Luisa A DIPIETRO[3]
[1]Department of Pharmaceutical Sciences, University of Illinois College of Pharmacy, USA,
[2]University of Illinois Cancer Center, USA,
[3]Center for Wound Healing and Tissue Regeneration, University of Illinois Chicago College of Dentistry, USA,
[4]Medical Scientist Training Program, University of Illinois College of Medicine, USA,
[5]Department of Pediatrics, University of Illinois Chicago College of Medicine, USA

S8-3 9:50 **P-30**
ibSLS database: an integrated database for the exploration of environmental stress response during space flight
Akihito OTSUKI[1], Yuichi AOKI[1, 2], Akira URUNO[1], Risa OKADA[3], Dai SHIBA[3], Fumiki KATSUOKA[1, 4], Kengo KINOSHITA[1, 2, 4], Masayuki YAMAMOTO[1]
[1]Tohoku Medical Megabank Organization, Tohoku University,
[2]Graduate School of Information Sciences, Tohoku University,
[3]Japanese Experiment Module Utilization Center, Human Spaceflight Technology Directorate, Japan Aerospace Exploration Agency,
[4]Advanced Research Center for Innovations in Next-Generation Medicine, Tohoku University

Break 10:10-10:30

Session 9 10:30-12:00

The KEAP1-NRF2 System and Drug Development 2

Chairperson: Albena T. DINKOVA-KOSTOVA (University of Dundee, UK)

S9-1 10:30 **P-28**
Nrf2 Activation Improves Experimental Rheumatoid Arthritis
Anqi ZHANG[1, 2], Takafumi SUZUKI[1, 2], Saki ADACHI[2], Eiki YOSHIDA[2], Masayuki YAMAMOTO[1, 2, 3]
[1]Departments of Biochemistry and Molecular Biology, Tohoku Medical Megabank Organization, Tohoku University,
[2]Departments of Medical Biochemistry, Tohoku University Graduate School of Medicine,
[3]The Advanced Research Center for Innovations in Next-Generation Medicine (INGEM), Tohoku University

S9-2 10:45 **P-9**
Pharmacologic and genetic activation of Nrf2 confers anti-fibrotic effects
Sharadha DAYALAN NAIDU[1], Ralitsa R. MADSEN[2], Iain PHAIR[1], Boushra AL-BATHISH[1], Abel D. ANG[1], Maureen HIGGINS[1], Pingting BIAN[1], Dorothy KISIELEWSKI[1], Terry W. MOORE[3], W. Christian WIGLEY[4], John D. HAYES[1], Albena T. DINKOVA-KOSTOVA[1, 5]
[1]Division of Cellular & Systems Medicine, School of Medicine, University of Dundee, Ninewells Hospital and Medical School, UK,
[2]Medical Research Council Protein Phosphorylation and Ubiquitylation Unit, School of Life Sciences, University of Dundee, UK,
[3]Department of Pharmaceutical Sciences, College of Pharmacy, University of Illinois Chicago, USA,
[4]Reata Pharmaceuticals, USA,
[5]Department of Pharmacology and Molecular Sciences and Department of Medicine, Johns Hopkins University School of Medicine, USA

S9-3 11:00 **P-32**
Sexual dimorphism of NRF2 target gene modulation
Aikseng OOI, Ben STANSFIELD, Anandhan ANNADURAI, Jinjing CHEN, Donna D ZHANG
University of Arizona

S9-4 11:15 **P-7**
Small Molecule Screen Identifies Pyrimethamine as an Inhibitor of NRF2-driven Esophageal Hyperplasia
Xiaoxin Luke CHEN[1, 2, 5], Chorlada PAIBOONRUNGRUANG[1, 2], Zhaohui XIONG[1, 2], Kevin P WILLIAMS[3], M Ben MAJOR[4]
[1]Coriell Institute for Medical Research,
[2]Cancer Research Program, Julius L. Chambers Biomedical Biotechnology Research Institute, North Carolina Central University,
[3]Department of Pharmaceutical Sciences, Biomanufacturing Research Institute and Technology Enterprise, North Carolina Central University,
[4]Department of Cell Biology and Physiology, Department of Otolaryngology, Washington University in St. Louis,
[5]Surgical Research Lab, Department of Surgery, Cooper University Health Care

S9-5 11:30
Targeting the NRF2/beta-TrCP axis in liver disease
Antonio CUADRADO, Raquel FERNANDEZ-GINES, Ana Isabel ROJO
Department of Biochemistry, Medical College, Autonomous University of Madrid

Closing Remark 12:00-12:15

12:00 Masayuki YAMAMOTO
Department of Biochemistry and Molecular Biology, Tohoku Medical Megabank Organization

Lunch 12:15-13:30

Public Lecture “Space & Health” 13:30-15:00

* see page 10 & 11

Excursion Tour “Towards Building the Future of Healthcare” 16:00-

* see page 12 & 13

Poster Session

Friday, Nov 3

12:25-13:55 Poster presentation (Odd numbers)

Saturday, Nov 4

12:50-14:20 Poster presentation (Even numbers)

P-1 **The mechanism of aerobic glycolysis mediated malignant behavior of bladder epithelial cells induced by arsenic**

Shuhua XI[1, 2, 3], Shan Zhu FU[1, 2, 3]

[1]Key Laboratory of Environmental Stress and Chronic Disease Control and Prevention ,Ministry of Education,
[2]Department of Environmental Health, School of Public Health, China Medical University,
[3]Key Laboratory of Arsenic Biology and Arsenic Poisoning in Liaoning Province

P-2 **NRF1 facilitates DNA Repair via interaction with PARP1 in protection against lung carcinogenesis**

Yuanyuan XU[1, 2, 3], Xin FANG[1, 2, 3], Yuxin HU[1, 2, 3], Yongfang LI[1, 2, 3], Junyi WANG[1, 2, 3], Huihui WANG[1, 2, 3], Jingqi FU[1, 2, 3], Yongyong HOU[1, 2, 3], Jingbo PI[1, 2, 3]

[1] School of Public Health, China Medical University,
[2]Key Laboratory of Environmental Stress and Chronic Disease Control & Prevention (China Medical University), Ministry of Education, [3]Key Laboratory of Liaoning Province on Toxic and Biological Effects of Arsenic

P-3 **Pharmacological NRF2 activation by PPI inhibitors: KEAP1- but not NRF2-specific**

Miroslav NOVAK[1], Sharadha DAYALAN NAIDU[1], Dina DIKOVSKAYA[1], Albena T. DINKOVA-KOSTOVA[1, 2]

[1]Division of Cellular Medicine, School of Medicine, Jacqui Wood Cancer Centre, Ninewells Hospital and Medical School, UK,
[2]Department of Pharmacology and Molecular Sciences and Department of Medicine, Johns Hopkins University School of Medicine, USA

P-4 **Deficiency of Nrf2 exacerbates the osteoclastogenesis and osteoporosis induced by prolonged cadmium exposure: involvement of long isoforms of NRF1 activation**

Zhiyuan LIU[1, 3, 4], Jinzhi WU[1, 3, 4], Zhe DONG[1, 3, 4], Yanshuai WANG[1, 3, 4], Gang WANG[3, 4, 5], Chengjie CHEN[1, 3, 4], Huihui WANG[2, 3, 4], Yang YANG[6], Yongxi SUN[6], Maowei YANG[7], Jingqi FU[1, 3, 4], Jiliang LI[8], Qiang ZHANG[9], Yuanyuan XU[2, 3, 4], Jingbo PI[1, 3, 4]

[1]Program of Environmental Toxicology, School of Public Health, China Medical University, China,
[2]Group of Chronic Disease and Environmental Genomics, School of Public Health, China Medical University, China,
[3]Key Laboratory of Environmental Stress and Chronic Disease Control & Prevention Ministry of Education (China Medical University), China,
[4]Key Laboratory of Liaoning Province on Toxic and Biological Effects of Arsenic (China Medical University), China,
[5]Experimental and Teaching Center, School of Public Health, China Medical University, China,
[6]Department of Rehabilitation, The First Affiliated Hospital of China Medical University, China,
[7]Department of Orthopedics, The First Affiliated Hospital of China Medical University, China,
[8]Department of Biology, Indiana University Purdue University Indianapolis, USA,
[9]Gangarosa Department of Environmental Health, Rollins School of Public Health, Emory University, USA

P-5 **Nrf2 Activation in Atopic Dermatitis**

Tomohiro EDAMITSU[1], Keiko TAGUCHI[1], Eisaku OGAWA[2], Ryuhei OKUYAMA[2], Masayuki YAMAMOTO[1]

[1]Department of Biochemistry and Molecular Biology, Tohoku Medical Megabank Organization, Tohoku University,
[2]Department of Dermatology, Shinshu University School of Medicine

P-6 **NRF2 in stress, ageing and disease**
S7-3

Ioannis TROUGAKOS

Faculty of Biology, National and Kapodistrian University of Athens

P-7 **S9-4**
Small Molecule Screen Identifies Pyrimethamine as an Inhibitor of NRF2-driven Esophageal Hyperplasia

Xiaoxin Luke CHEN[1, 2, 5], Chorlada PAIBOONRUNGRUANG[1, 2], Zhaohui XIONG[1, 2], Kevin P WILLIAMS[3], M Ben MAJOR[4]
[1]*Coriell Institute for Medical Research,*
[2]*Cancer Research Program, Julius L. Chambers Biomedical Biotechnology Research Institute, North Carolina Central University,*
[3]*Department of Pharmaceutical Sciences, Biomanufacturing Research Institute and Technology Enterprise, North Carolina Central University,*
[4]*Department of Cell Biology and Physiology, Department of Otolaryngology, Washington University in St. Louis,*
[5]*Surgical Research Lab, Department of Surgery, Cooper University Health Care*

P-8
The transcription factor NRF1 (NFE2L1) activates aggrephagy by inducing p62 and GABARAPL1 after proteasome inhibition to maintain proteostasis

Atsushi HATANAKA[1], Sota NAKADA[2], Gen MATSUMOTO[3], Katsuya SATOH[1], Iori AKETA[1], Akira WATANABE[4], Tomoaki HIRAKAWA[5, 6], Tadayuki TSUJITA[5, 6], Tsuyoshi WAKU[2], Akira KOBAYASHI[1, 2]
[1]*Laboratory for Genetic Code, Graduate School of Life and Medical Sciences, Doshisha University,*
[2]*Laboratory for Genetic Code, Department of Life and Medical Sciences, Doshisha University,*
[3]*Department of Anatomy and Neurobiology, Nagasaki University School of Medicine,*
[4]*Graduate School of Medicine, Kyoto University,*
[5]*Laboratory of Biochemistry, Faculty of Agriculture, Saga University,*
[6]*The United Graduate School of Agricultural Sciences, Kagoshima University*

P-9 **S9-2**
Pharmacologic and genetic activation of Nrf2 confers anti-fibrotic effects

Sharadha DAYALAN NAIDU[1], Ralitsa R. MADSEN[2], Iain PHAIR[1], Boushra AL-BATHISH[1], Abel D. ANG[1], Maureen HIGGINS[1], Pingting BIAN[1], Dorothy KISIELEWSKI[1], Terry W. MOORE[3], W. Christian WIGLEY[4], John D. HAYES[1], Albena T. DINKOVA-KOSTOVA[1, 5]
[1]*Division of Cellular & Systems Medicine, School of Medicine, University of Dundee, Ninewells Hospital and Medical School, UK,*
[2]*Medical Research Council Protein Phosphorylation and Ubiquitylation Unit, School of Life Sciences, University of Dundee, UK,*
[3]*Department of Pharmaceutical Sciences, College of Pharmacy, University of Illinois Chicago, Chicago, IL, USA,*
[4]*Reata Pharmaceuticals, USA,*
[5]*Department of Pharmacology and Molecular Sciences and Department of Medicine, Johns Hopkins University School of Medicine, USA*

P-10
Mathematical modeling reveals origins of bistability and circadian oscillation of cellular H2O2 and quantitative properties of KEAP1-NRF2 signaling

Shengnan LIU[1, 2], Jingbo PI[1, 2], Qiang ZHANG[3]
[1]*Key Laboratory of Environmental Stress and Chronic Disease Control & Prevention Ministry of Education, China Medical University,*
[2]*School of Publich Health, China Medical University,*
[3]*Gangarosa Department of Environmental Health, Rollins School of Public Health, Emory University*

P-11 **S3-4**
Forced Hepatic Expression of NRF2 or NQO1 Alleviates Hepatic Lipid Accumulation and Hepatocellular Damage in a Lipodystrophy Mouse Model

Nobunao WAKABAYASHI[1], Yoko YAGISHITA[1, 2], Tanvi JOSHI[1], Thomas W KENSLER[1]
[1]*Fred Hutchinson Cancer Center,* [2]*Division of Endocrinology, Columbia University, USA*

P-12
A tryptophan metabolite, L-Kynurenine, activates Nrf2 in human and mouse macrophages

Jialin FENG[1], Sharadha Dayalan NAIDU[1], Oliver READ[1], Ying ZHANG[1], Albena DINKOVA-KOSTOVA[1, 2]
[1]*University of Dundee,* [2]*Johns Hopkins University*

P-13 **6-(methylsulfinyl)hexyl isothiocyanate as a modulator of NRF2 and protector against tauopathy**

Ángel Juan GARCíA-YAGüE[1, 2, 3], Manuel DEBASA-MOUCE[1, 2, 3], Daniel CARNICERO-SENABRE[1, 2, 3], Antonio CUADRADO[1, 2, 3]

[1]Departament of Biochemistry, School of Medicine, Autonomus University of Madrid, UAM, Instituto de Investigaciones Biomédicas "Alberto Sols" (CSIC-UAM),
[2]Instituto de Investigación Sanitaria La Paz (IdiPaz),
[3]Centro de Investigación Biomédica en Red de Enfermedades Neurodegenerativas (CIBERNED)

P-14 **S7-4** **The small MAF transcription factor MAFG is a potent driver of melanoma**

Florian A KARRETH, Olga VERA, Michael MARTINEZ, Xiaonan XU

Department of Molecular Oncology, H. Lee Moffitt Cancer Center & Research Institute

P-15 **Accelerated mutagenesis of 5'-GAA-3' sequence in the lung of Nrf2-KO *gpt* delta mice**

Yasunobu AOKI[1], Kenichi MASUMURA[2], Mizuki OHNO[3], Takehiko NOHMI[4], Masayuki YAMAMOTO[5]

[1]Health and Environmental Risk Division, National Institute for Environmental Studies, Japan,
[2]Division of Risk Assessment, National Institute of Health Sciences, Japan,
[3]Faculty of Medical Sciences, Kyushu University, Japan,
[4]Division of Pathology, National Institute of Health Sciences, Japan,
[5]Department of Medical Biochemistry, Tohoku University Graduate School of Medicine, Japan

P-16 **Immunological Features of NRF2-Activated Non-Small Cell Lung Cancers**

Madoka KAWAGUCHI[1], Keito OKAZAKI[1], Haruna TAKEDA[1], Kento IIDA[1], Shigeyuki SHICHINO[2], Kazuki HAYASAKA[1, 3], Chikara SAKAI[1, 3], Yoshinori OKADA[3], Takashi SUZUKI[4], Shohei MURAKAMI[1], Hozumi MOTOHASHI[1]

[1]Department of Gene Expression Regulation, Division of Aging Science, Institute of Development, Aging and Cancer, Tohoku University,
[2]Division of Molecular Regulation of Inflammatory and Immune Diseases, Research Institute of Biomedical Sciences, Tokyo University of Science, Japan,
[3]Department of Thoracic Surgery, Institute of Development, Aging and Cancer, Tohoku University, Japan,
[4]Department of Anatomic Pathology, Tohoku University Graduate School of Medicine, Japan

P-17 **S7-5** **The efficacy of the novel NRF2 activator CH0924 for acute kidney injury**

Masaki HOSHINO[1], Yukari YASUI[1], Shun MITSUMATA[1], Manami IIDA[1], Yui SUGAWARA[1], Atsushi KIMBARA[1], Yuko ITO[2], Hitoshi HAGITA[3], Naoshi HORIBA[1]

[1]Research Division, Chugai Pharmaceutical Co., Ltd., Japan,
[2]Translational Research Division, Chugai Pharmaceutical Co., Ltd., Japan,
[3]Chugai Research Institute for Medical Science Inc., Japan

P-18 **KEAP1-NRF2 System Mutation Detection by a Splicing Junction Aberration-based Classifier**

Raúl Nicolás MATEOS[1], Wira WINARDI[2], Ai OKADA[1], Naoko IIDA[1], Yoshitaka SAKAMOTO[1], Wataru NAKAMURA[1], Masahiro SUGAWA[1], Kenichi CHIBA[1], Yoichiro MITSUISHI[2], Yuichi SHIRAISHI[1]

[1]Div. Genome Analysis Platform Development, National Cancer Center Japan, Research Institute, Japan,
[2]Department of Respiratory Medicine, Juntendo University Graduate School of Medicine

P-19 **Design, synthesis and biological evaluation of novel Hsp90 inhibitors with reduced toxicity.**

Russ KITSON[1], Chuan-Hsin CHANG[3], Rui XIONG[3], Donna L. DEHN[3], David SIEGEL[3], David ROSS[3], Christopher J MOODY[2]

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P-20 Nrf2 Activation and Liver Fibrosis: An Investigation of the Effects of TBE-31 on CCl4-Induced Liver Injury

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P-21 Knockout of KEAP1 in lung cancer cells promotes an immunosuppressive phenotype

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P-22 Unraveling the Mechanisms of Cisplatin Resistance in Nasopharyngeal Carcinoma: A Focus on NRF2-Mediated Cytoprotection and ErbB Family Dysregulation

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P-23 The NRF2-p97-NRF2 negative feedback loop

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P-24 Functional analysis of NRF2-related factor NRF3 in pancreatic tumor growth and malignancy

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P-25 The NRF2-related transcription factor NRF3 protects pancreatic cancer cells from ferroptosis by inducing expression of redox related genes

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P-26 Macrophage polarization affects basal and inducible NRF2 signalling

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P-27 The roles NRF2 plays in microglia in Alzheimer's disease

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P-28 Nrf2 Activation Improves Experimental Rheumatoid Arthritis
S9-1

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P-29 The triterpenoid CDDO-Methyl ester decreases tumor burden, alters the tumor microenvironment, and protects from chemotherapy-induced toxicity in a preclinical model of late-stage lung cancer

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P-30 S8-3 ibSLS database: an integrated database for the exploration of environmental stress response during space flight

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P-31 Compensatry Activation of Nrf2 in Selenoprotein Deficiency Requires Keap1 Cys226/ Cys613 Residues

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P-32 S9-3 Sexual dimorphism of NRF2 target gene modulation

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P-33 Hepatocyte-specific deficiency of Nrf2 alters cholesterol metabolism leading to mitigated atherosclerosis in ApoE-knockout mice

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P-34 NF-E2-related factor 1 suppresses the expression of a spermine oxidase and the production of highly reactive acrolein

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P-35 Podocyte-specific Nrf2 deficiency aggravates high-glucose-induced kidney injury in Akita diabetic mice

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P-36 The role of Nrf2 in diabetic kidney disease of *Akita* mice

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P-37 Molecular Basis of Stress Response by the KEAP1-NRF2 System

S2-4

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P-38 NRF2 protects against TiO2NP-induced arteriovenous thrombosis

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P-39 Withdrawal

P-40 JAXA Space rodent research II: Space flight habitation and Scientific outcomes

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P-41 Pulmonary effect of exposure to Fe3O4-PEG-PLGA nanoparticles and the role of Nrf2

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P-42 JAXA Space rodent research I: Pre-Flight preparation

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P-43 Squamous cell carcinogenesis elicited by NRF2^{L30F} plus Trp53^{R172H} mutations

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P-44 Investigation of relationship between GCN1 and NRF1 expression during aging in aging model mice and siRNA knockdown cells

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P-45 Selenophosphate synthetase 1 (SEPHS1) coordinates NRF2-mediated redox homeostasis

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P-46 Anti-cancer effect of 19-position substituted geldanamycin derivatives depends on NQO1 protein expression in esophageal squamous cell carcinoma cells

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P-47 Modifying the Genetic Codon Redefines the Expression of Recombinant Selenoproteins in Engineered E. coli Strains, Including an Artificial E. coli Strain

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P-48 Overcoming Resistance to KRAS Inhibitors: Insights from Nrf2 activation and targeting additional mutations

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P-49 Leucine 305 and 309 Residues Contribute to the Formation of Two Human NRF2 bands in SDS-PAGE

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P-50 Narciclasine Inhibits NRF2 by Targeting WDR43 to Sensitize Cisplatin-induced Cell Death in A549 Cells

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P-51 Contribution of NRF2 to cisplatin resistance in head and neck squamous cell carcinoma

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P-52 Role of NRF2 in HIF-2α-Mediated Cancer Phenotypes in Renal Carcinoma

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P-53 Nrf2 Dependent/Independent Regulations of the Expression of Selenoprotein P by Sulforaphane

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P-54 S5-2 Immunoediting of KEAP1-NRF2 mutant tumours is required to circumvent NRF2-mediated immune surveillance

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P-55 S5-1 Functional Characterization of CNC-sMAF Heterodimers by the Tethered Dimer Rescue System

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P-56 Neuroprotective effects of sulforaphane on benzo(a)pyrene-induced neurotoxicity in mice

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P-57 Dual role of the Keap1-Nrf2 system in a rat liver cirrhosis model that is influenced by hepatic iron condition

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P-58 Characterization of 4NQO-induced mouse tongue cancer cells with different Nrf2 activation levels

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P-59 Metabolic Reprogramming in Nrf2-driven Proliferation of Normal Rat Hepatocytes by Lead Nitrate

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