第１５７回

東北大学加齢医学研究所

集談会

プログラム

157th IDAC Biannual Meeting

Program

日時：令和４年２月４日（金曜日）13:00～

February 4, 2022,13:00~ at Web conference

共催：東北大学加齢医学研究所

Institute of Development, Aging and Cancer, Tohoku University

東北大学加齢医学研究所研究会同窓会

Society of Institute of Development, Aging and Cancer, Tohoku University

13:00－13:05 Opening remarks　Dr. Ryuta Kawashima

第 29 回加齢医学研究所研究奨励賞受賞記念講演

29th IDAC Young Investigator Award Lecture

13:05－13:45　Lecture　　Chair: Dr. Yasuyuki Taki

Persistent activation of NRF2 causes enhancer remodeling which promotes tumor-initiating activity and drug metabolism in cooperation with CEBPB

Department of Gene Expression Regulation, Institute of Development, Aging and Cancer, Tohoku University

Keito Okazaki

NRF2 (Nuclear Factor Erythroid 2 Like 2; NFE2L2) is a master transcription regulator that coordinately regulates many cytoprotective genes and plays a central role in defense mechanisms against oxidative and electrophilic insults. While increased NRF2 activity is principally beneficial for our health, outcome of NRF2 activation in cancer cells is detrimental which is observed in almost 15% of non-small cell lung cancer (NSCLC). We conducted an unbiased approach by investigating NRF2-dependent transcriptome in NSCLC cell lines with NRF2-activated NSCLCs, and in those with NRF2-normal NSCLCs. We identified a battery of genes that are regulated by NRF2 specifically in NRF2-activated NSCLCs and found that these genes are accompanied by unique NRF2-dependent enhancers. CEBPB accumulation in NRF2-activated NSCLCs is found to be one of the prerequisites for the establishment of the unique enhancers, in which *NOTCH3* enhancer is critical for the promotion of tumor-initiating activity. To understand NRF2-CEBPB cooperativity precisely in NRF2-activated NSCLCs, we comprehensively explored NRF2-CEBPB-coregulated genes by comparing the NRF2- and CEBPB-dependent transcriptomes in NRF2-activated NSCLC cell lines. Genes involved in drug metabolism and detoxification were found to be enriched in the coregulated genes

accompanied by NRF2-CEBPB-coregulated enhancers. These results suggested that enhanced activity of stem-like phenotype, drug metabolism and detoxification is achieved by the cooperative function of NRF2 and CEBPB in NRF2-activated NSCLCs.

Core belief disruption amid the COVID-19 pandemic in Japanese adults

Smart-Aging Research Center,
Institute of Development, Aging, and Cancer, Tohoku University

Izumi Matsudaira

Due to the rapid spread of the novel coronavirus disease (COVID-19) worldwide, most people have been forced to alter their lifestyles. This situation may affect the mental health of individuals through the disruption of core beliefs about humans, the world, and the self. Therefore, in this study, an online survey of Japanese adults was conducted to investigate the associations between subjective achievement and the burden of cooperation in preventive measures, disruption of core beliefs, and psychological distress. The results showed that pandemic-induced disruption of core beliefs occurred at a relatively low level in the general population of Japan. In addition, the achievement and psychological burden of preventive measures, reduced income due to the pandemic, and stressfulness of the pandemic were significantly associated with the level of the disruption of core beliefs. Moreover, the greater the disruption of core beliefs, the greater the psychological distress. These findings indicate that the violation of fundamental assumptions about life are an important factor determining mental health during a pandemic.

13:45－13:55　*break*

13:55－14:40　Session 1　　Presentations 1-3

Chairs: Toshimi Ogawa, Noriki Yamaya

1．Analysis of large multimers of von Willebrand factor in the patients with venovenous extracorporeal membrane oxygenation in lung transplantation

Hisashi Oishi[1], Yoshinori Okada[1], Yamato Suzuki[1], Takashi Hirama[1], Yutaka Ejima[2], Shin-ichi Fujimaki[3], Shingo Sugawara[3], Noriyuki Okubo[3], Mihoko Yamashita[4], Hisanori Horiuchi[4]

[1]Department of Thoracic Surgery, Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan

[2]Department of Anesthesiology, Tohoku University Hospital, Sendai, Japan

[3]Department of Laboratory Medicine, Tohoku University School of Medicine, Sendai, Japan

[4]Department of Molecular and Cellular Biology, Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan

2．Myeloid immune checkpoint ILT3/LILRB4/gp49B tether fibronectin with integrin on macrophages

So Itoi,[1, 2] Naoyuki Takahashi,[1] Haruka Saito,[1] Yusuke Miyata,[1] Mei-Tzu Su,[1] Shota Endo,[1] Hiroshi Fujii,[2] Hideo Harigae,[2] Yuzuru Sakamoto,[3] And Toshiyuki Takai[1]

[1]Department of Experimental Immunology, Institute of Development, Aging and Cancer, Tohoku University

[2]Department of Hematology and Rheumatology, Tohoku University Graduate School of Medicine

[3]Department of Human Science, Faculty of Liberal Arts, Tohoku Gakuin University

3．Altered gene expression due to aberrant DNA methylation correlates with responsiveness to anti-EGFR antibody treatment

Yasufumi Otsuki[1,2], Kota Ouchi[1,2], Shin Takahashi[1,2], Keiju Sasaki[1,2], Yasuhiro Sakamoto[3], Akira Okita[3] and Chikashi Ishioka[1,2,4]

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[3]Department of Medical Oncology, Osaki Citizen Hospital, Miyagi, Japan

[4]Department of Clinical Oncology, Tohoku University Graduate School of Medicine, Miyagi, Japan

14:40－14:50　*break*

14:50－15:35　Session 2　　Presentations 4-6

Chairs:　Shota Endo, Yumi Hamamoto

4．**The influence of heterozygous mutations of CHAMP1, a factor involved in intellectual disability,on DNA double-strand break repair**

Yunosuke Ouchi, Masanori Ikeda, Kozo Tanaka

Department of Molecular Oncology, Institute of Development, Aging and Cancer, Tohoku Universit

5．**Deficiency of Cystine Transporter xCT Limits Expression of NRF2 Target Genes in Peritoneal Macrophages during Inflammatory Response**

Haruna Takeda, Hiroki Sekine, Hozumi Motohashi

Department of Gene Expression Regulation, Institute of Development, Aging and Cancer, Tohoku University

6．**The Molecular Mechanism of Autophagosome-Lysosome Fusion by Ykt6**

Masaki Tateishi, Ryutaro Shirakawa, and Hisanori Horiuchi

Department of Molecular and Cellular Biology, Institute of Development, Aging and Cancer, Tohoku University

15:35－15:45　*break*

15:45－16:15　Session 3　　Presentations 7-8

Chairs:　Koyu Ito, Zhenzhou Fang

7．**Analysis of a transcription factor involved in skeletal muscle atrophy**

Atsushi Kubo, Toshihiko Ogura

Department of Developmental Neurobiology, Institute of Development, Aging and Cancer, Tohoku University

８． **A novel metabolic pathway related with immunometabolism in fatty liver and NASH aggravation**

Tomoki Yagai , Takahisa Nakamura
Department of Metabolic Bioregulation, Institute of Development, Aging and Cancer, Tohoku University

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一般口演について
発表時間１２分，討論３分とします。時間厳守にてお願いします。
座長は研究員会集談会コンテスト審査員が行ないます。

16:15－16:20　Closing remarks　Dr. Hozumi Motohashi

集談会終了後の研究員会主催新年会は中止です。