東北大学グローバルCOE

Network Medicine 創生拠点

NM高等教育セミナー

Thomas W. Kensler博士

(University of Pittsburgh,
Johns Hopkins Bloomberg School of Public Health・Professor)

「Keap1-Nrf2 Signaling: Targets for Disease Prevention」

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Keap1-Nrf2 regulatory system is an adaptive response to environmental and endogenous stresses and serves to render animals resistant to chemical carcinogenesis, other forms of toxicity and inflammation whilst disruption of the pathway exacerbates these outcomes. The cytoprotective effects of Nrf2 reflect responses mediated by direct activation of downstream effector genes and through cross-talk with other signaling networks contributing to cellular plasticity including AhR, NF-kB, p53 and Notch1. In addition to endogenous signaling molecules such as reactive oxygen and nitrogen species, growth factors and oxidized lipids, the Keap1-Nrf2 pathway can also be induced by thiol-reactive small molecules including dithiolethiones (e.g., oltipraz), isothiocyanates (e.g., sulforaphane) and triterpenoids (e.g., CDDO-Im) that demonstrate protective efficacy in preclinical chemoprevention models and in clinical trials. Thus, targeting the pathway may provide important opportunities for disease prevention.

参考文献

Shin, S., Wakabayashi, J., Yates, M., Wakabayashi, N., Dolan, P.M., Aja, S.M., Liby, K.T., Sporn, M.B., and Kensler, T.W. (2009) Role of Nrf2 in prevention of high-fat diet-induced obesity by synthetic triterpenoid CDDO-Imidazolide. Europ. J. Pharmacology 620: 138-144.

本セミナーは医学履修課程特別セミナーを兼ねています。受講学生は履修振替簿を持参し、セミナー修了後にサインを受けること。聴講は自由大歓迎です。学部生の皆さんもぜひどうぞ。

拠点リーダー **岡 芳知** ／ 世話人 **山本 雅之**(医化学分野 内線8089)