



第 296 回 つくば分子生命科学セミナー

TSUKUBA MOLECULAR LIFE SCIENCE SEMINAR

演題 : Gut instinct: Queuine's control of metabolism and behaviour.

演者 : Dr. Vincent Kelly

School of Biochemistry & Immunology,
Trinity College Dublin, Ireland.

日時 : 2009 年 10 月 8 日 (木) 17:00-18:30

会場 : 生命科学動物資源センター 発生工学棟 2 階
リフレッシュコーナー

要旨 :

Queuine is a molecule found in the transfer RNA of all eukaryotic species, with the exception of yeast and plant leaf cells. Surprisingly, queuine is only produced by eubacteria. In eukaryotes, including humans, queuine is obtained from food or bacteria that live in the gut (i.e. the microflora). The function of this ubiquitous molecule has remained elusive ever since its discovery in 1967 by three groups, among them, that of Dr. Susumu Nishimura. Our studies have focused on understanding how and why eukaryotic tRNA contains this unusual molecule.

Recently we identified the eukaryotic enzyme complex that inserts queuine into tRNA and showed it consists of two proteins, TGT and Qv1, both of which localise to the mitochondria. Knockout mice for the TGT gene are severely compromised in their ability to produce tyrosine from phenylalanine, similar to the human disease phenylketonuria. In addition, the knockout animals show changes in the brain levels of the im

参考文献 :

Boland C, et al. Queuosine formation in eukaryotic tRNA occurs via a mitochondria-localized heteromeric transglycosylase. *J Biol Chem.* 2009 Jul 3;284(27):18218-27.

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