

" RNA modified bases & grammar education for the naïve immune system"

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Date: Jul 11th Monday

Time: 11:00 to 12:00

Location: Biken Hall, 1st Floor, Main building, Research Institute for Microbial Diseases (微研ホール、微生物病研究所 本館 1F)

RNA modified bases encompass over 100 different chemical structures, the majority of which are associated with transfer RNA (tRNA). The modifications in tRNA provide structural integrity to the molecule, act as molecular handles for interacting proteins and contribute to the fidelity and efficiency of protein synthesis. In this presentation I will discuss our continuing efforts to understand the function and activity of a highly unusual RNA base referred to as queuine. Queuine is supplied to eukaryotic organisms, including humans, exclusively by bacteria for incorporation into the 'wobble-position' of the tRNA molecule (position 34). I will describe our studies on queuine's role in metabolism, proliferation, and cancer and present new data showing how variation of the wobble base elicits dramatic changes to the immune response.

References:

1. Fergus C, Barnes D, Alqasem MA, Kelly VP. (2015) The queuine micronutrient: charting a course from microbe to man. *Nutrients*. 7(4):2897-929.
2. Rakovich T, Boland C, Bernstein I, Chikwana VM, Iwata-Reuyl D and Kelly VP (2011) Queuosine deficiency in eukaryotes compromises tyrosine production through increased tetrahydrobiopterin oxidation. *J Biol Chem*. 286(22):19354-63
3. Boland C, Hayes PA, Santa-Maria I, Nishimura S and Kelly VP. (2009) Queuosine formation in eukaryotic tRNA occurs via a mitochondrial localized heteromeric transglycosylase. *J. Biol. Chem*. 284:18218-27.

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※医学系研究科単位認定の対象となるセミナーです。