



WAKATE INITIATIVE SPECIAL WINE AND CHEESE SEMINAR

演題： **How Biochemistry *in vitro* Can Differ
From Biochemistry *in vivo***

演者： Dr. Allen P. Minton,
Section on Physical Biochemistry, Laboratory of
Biochemistry and Genetics, NIDDK, NIH (USA)

日時： 2009年5月12日(かよび) 7:00pm – 8:00pm

会場： Room 311, Sogo-kenkyu (Building D)

要旨： Nonspecific interactions between individual macromolecules and their immediate surroundings ('background interactions') within a medium as heterogeneous and highly volume occupied as the interior of a living cell can greatly influence the equilibria and rates of reactions in which they participate. Background interactions may be either repulsive, leading to preferential size-and-shape dependent exclusion from highly volume-occupied elements of volume, or attractive, leading to nonspecific associations or adsorption. Nonspecific interactions with different constituents of the cellular interior lead to three classes of phenomena: macromolecular crowding, confinement and adsorption. Theory and experiment have established that predominantly repulsive background interactions tend to enhance the rate and extent of macromolecular associations in solution, whereas predominately attractive background interactions tend to enhance the tendency of macromolecules to associate on adsorbing surfaces. Greater than order-of-magnitude increases in association rate and equilibrium constants attributable to background interactions have been observed in simulated and actual intracellular environments.

Dr. Minton is one of America's most cited chemists (having numerous papers with greater than 300 citations). His research efforts can be read at the following website. After the seminar a short wine and cheese mixer will be provided so that audience members have a chance to meet the speaker in a relaxing environment.

<http://www2.nidk.nih.gov/NIDDKLabs/IntramuralFaculty/MintonAllen.htm>

連絡先： 若手イニシアティブ

Damien Hall TEL: 029-853-8008 Email: damienhall@md.tsukuba.ac.jp