## Metabolism in regulating T cell function: How to measure it?

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**Abstract**  
Metabolism is the set of biochemical reactions that allows cells to acquire and utilize nutrients needed to sustain life. Accessing adequate nutrients and meeting metabolic demands are necessary for cells to grow, survive, proliferate, and to properly perform their intended functions. The comprehensive understanding of the interface of immune and metabolic responses in disease has become important. T cells are key players in immune response to infectious diseases, autoimmunity, and cancer. In this seminar we will introduce modern technology used for measuring cellular metabolism. It contains several protocols to determine the energy utilization of T cells in real-time using a Seahorse Extracellular Flux Analyzer. Real-time bioenergetic responses to T cell activation allows for the analysis of immediate metabolic changes after T cell receptor stimulation. Specific substrate utilization can be determined by the use of differential assay media, or the injection of drugs that specifically affect certain metabolic processes. Accurate cell numbers, purity, and viability are critical to obtain reliable results. More application on other cell types and limitations of the technology will be discussed in the seminar.

**References**


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**Day / Date / Time:**  
*Thursday*  
15th October 2015  
12pm – 1pm

**All students are welcome & Refreshments will be provided**

**Venue:**  
Dept of Microbiology  
Seminar Room @ 5 Science Drive 2, Blk MD4A, Level 2, Singapore 117545

**Convener:**  
A/Prof Kevin Tan

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