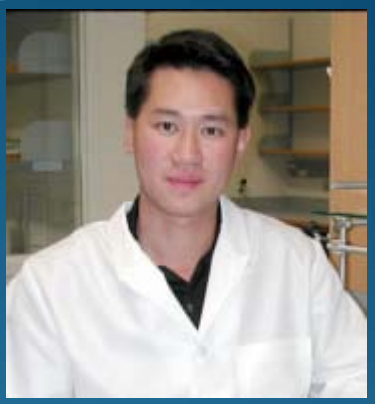
TIMS/MANA Joint Seminar



題目： **Utilizing ECM-mimics to study monocyte-centered wound healing and host response to biomaterials.**

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日時： **7月6日(月)　16:00-18:00**

場所： **総合研究棟B　0112教室**

Abstract

Monocytes/macrophages are critical in mediating several disease etiologies, the host reaction to the biomedical devices employed for intervention, and the eventual material biocompatibility. The focus of our effort continues to address the role of monocytes in material-centered host response and wound healing. Specifically, we endeavor to understand important aspects of the cell-surface and cell-cell interaction leading to monocyte activation and to exploit this knowledge in the design of materials that would lead to favorable monocyte-surface interaction. To do so, we developed a platform material of extracellular matrix (ECM)-inspired mimics to explore receptor-ligand complexation, post-ligation signaling events, gene and protein expressions, and cell-cell regulation in vitro with model cell types for selected critical stages of healing (i.e., monocytes for inflammation, fibroblasts for granulation and fibrosis, and keratinocytes for end-stage healing by normal parenchymal cells). The impact of this ECM mimic on wound healing was also examined in several animal models. ECM-derived components such as the RGD oligopeptide are extensively employed in the formulation of biofunctionalized materials for tissue engineering, nanomaterials, and novel biomaterials. Hence, the mechanism and the possible deleterious effect of these peptides on modulating monocyte function need to be fully understood.

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