

## 第 71 回 生物科学フロンティアセミナー

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時間: 2014 年 4 月 7 日 (月) 15:00-16:00

場所: A13 棟-323 室 (3 階 講義室 B)

### ***Peptide-based strategies to treat inflammatory and autoimmune diseases: a translational experience from bench to clinical studies***

Current pharmacologic treatments for inflammatory diseases and autoimmune diseases are largely palliative rather than curative. Most of them result in nonspecific immunosuppression. This can be associated with disruption of natural and induced immunity with significant, sometimes dramatic, adverse effects, which can be irreversible. Among the novel strategies that are under development, tools that target specific molecular pathways and cells, and more precisely modulate the immune system to restore normal tolerance mechanisms, for instance, are central. In these approaches, peptide therapeutics do constitute a novel class of agents. They can be produced and purified in large amount and controlled conditions for a relatively moderate cost. They possess a number of intrinsic properties that are favorable for long-term treatments. In particular free peptide display poor immunogenicity. They are also versatile components that can be easily modified to improve their capacities without affecting their bioactivity. They can be synthesized with modified amino-residues mimicking crucial post-translational modifications. Peptide-mediated immunotherapy has been evaluated in several appropriate experimental animal models, and a few peptides are currently evaluated in clinical trials for the treatment of human chronic inflammatory diseases. It is anticipated that in the near future, therapeutic peptides might find many more important applications in addition to other strategies, which are currently more commonly put forward, such as gene and cellular therapies or therapies based on monoclonal antibodies. Our own experience of therapeutic intervention with a synthetic peptide called P140/Lupuzor endowed with immunomodulating properties in systemic lupus will be presented as a conducting thread to this presentation.

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