

# 第44回日本免疫学会学術集会 テクニカルセミナーT4

日程 2015年11月19日(木) 13:00~14:00  
会場 札幌コンベンションセンター1F D会場 (104+105)

演題

## Regulation of ATP-dependent immune responses

—ATP 依存性の免疫応答の制御機構—

座長

### 西川 博嘉 先生

国立がん研究センター 先端医療開発センター 免疫TR 分野 分野長

Hiroyoshi Nishikawa

Director, Division of Cancer Immunology,

Exploratory Oncology Research & Clinical Trial Center, National Cancer Center

演者

### 竹田 潔 先生

大阪大学大学院医学系研究科

免疫制御学および免疫学フロンティア研究センター 粘膜免疫学 教授

Kiyoshi Takeda

Professor, Department of Microbiology and Immunology, Graduate School of Medicine,

Osaka University and WPI Immunology Frontier Research Center, Osaka University

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要旨

Adenosine 5'-triphosphate (ATP) mediates many cellular functions by providing energy through its hydrolysis. In addition, ATP in the extracellular compartment was shown to mediate cell-to-cell communication in the nervous system, where ATP is released at the neuronal synapse. Several purinergic receptors, such as P2X and P2Y, which sense extracellular ATP, are expressed in a variety of immune cells and regulate their immune functions. Thus, extracellular ATP mediates the immune responses.

Accordingly, extracellular ATP concentration is finely regulated by ATP-hydrolyzing ecto-enzymes expressed on the plasma membrane, including a family of ecto-nucleoside triphosphate diphosphohydrolases (E-NTPDases), which convert ATP to ADP as well as ADP to AMP, and a family of ecto-nucleotide pyrophosphatase/phosphodiesterases (E-NPPs), which hydrolyze ATP to AMP.

A series of studies on ATP-hydrolyzing ecto-enzymes have revealed that these ecto-enzymes play mandatory roles in the regulation of ATP-dependent immune responses. Here we show the functions of these ecto-enzymes focusing on E-NTPDase7, E-NTPDase8, and E-NPP3.

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