

# Chronic Inflammation

Creation of Basic Medical Technologies to Clarify and Control the Mechanisms Underlying Chronic Inflammation



## [Research and Development Objectives]

Creation of basic medical technologies for the prevention, diagnosis and treatment of cancer, arteriosclerotic diseases, and autoimmune disorders by the elucidation of the mechanisms underlying chronic inflammation

### Program Supervisor (PS)

#### MIYASAKA Masayuki

Professor Emeritus, Osaka University;  
FiDiPro Professor, Academy of Finland

The purpose of this R&D area is to elucidate the mechanisms through which inflammation becomes chronic, and to create basic technologies for the early detection, control, resolution, and reparation of chronic inflammation.

More specifically, this involves research aimed at: (1) identifying factors that induce and maintain the chronicity of inflammation by determining failure mechanisms of inflammation control; (2) clarifying the mechanisms through which specific diseases (including cancer, degenerative neurological disorders, and arteriosclerotic diseases) develop as a result of chronic inflammation, and to create basic technologies to control them; and (3) creating basic technologies that allow for the early detection and quantitative assessment of chronic inflammation. This not only involves established basic and clinical research, but also emphasizes research that sufficiently sublimates evidence-based findings for understanding higher order inflammation control mechanisms, and leads to the development of new preemptive basic medical technologies.

### R&D Area Advisors

INAGAKI Nobuya	Professor, Kyoto University
IMAMURA Takeshi	Professor, Ehime University
UEMATSU Satoshi	Professor, Chiba University
OHSUGI Yoshiyuki	Chairman&CEO, Ohsugi BioPharma Consulting Co., Ltd.
KOH Shosei	Director, Shironishi Hospital; Professor Emeritus, Shinshu University
TAKATSU Kiyoshi	Director, Toyama Prefectural Institute of Pharmaceutical Research
TAKAYANAGI Hiroshi	Professor, The University of Tokyo
YAMAUCHI-TAKIHARA Keiko	Professor, Osaka University
MURAKAMI Masaaki	Director, Hokkaido University
YOKOMIZO Takehiko	Professor, Juntendo University
YOSHIMURA Akihiko	Professor, Keio University

Started in 2010 ... 1st period

Regulation of inflammation time axis at RNA level

**ASAHARA Hiroshi**  
Professor, Tokyo Medical and Dental University

Started in 2010 ... 1st period

Next-generation imaging technology to ascertain the *in vivo* mode of action of chronic inflammatory macrophages

**ISHII Masaru**  
Professor, Osaka University

Started in 2010 ... 1st period

The research for the mechanism of chronically intractable pain based on the functions of microglia as brain immunocompetent cell

**INOUE Kazuhide**  
Professor, Kyushu University

Started in 2010 ... 1st period

Understanding of chronic inflammation for the development of new therapeutic strategies for intestinal inflammatory diseases

**KIYONO Hiroshi**  
Professor, The University of Tokyo

Started in 2010 ... 1st period

The role of microenvironmental niches for hematopoiesis in chronic inflammation

**NAGASAWA Takashi**  
Professor, Osaka University

Started in 2010 ... 1st period

Prostaglandin-mediated mechanisms of initiation and progression of chronic inflammation

**NARUMIYA Shuh**  
Professor, Kyoto University

Started in 2010 ... 1st period

Molecular and cellular bases of chronic inflammation associated-organ fibrosis

**MATSUSHIMA Kouji**  
Professor, The University of Tokyo

Started in 2011 ... 2nd period

Pathophysiological role of chronic inflammation in aging-associated diseases

**AKAZAWA Hiroshi**  
Lecturer, The University of Tokyo

Started in 2011 ... 2nd period

Regulation of chronic inflammation and the development of new strategies for treating airway inflammatory diseases

**NAKAYAMA Toshinori**  
Professor, Chiba University

Started in 2011 ... 2nd period

Structural basis for the pathogenic disease mechanisms caused by chronic inflammation

**NUREKI Osamu**  
Professor, The University of Tokyo

Started in 2011 ... 2nd period

Control of chronic inflammation through elucidation of organ-specific autoimmune disease mechanisms

**MATSUMOTO Mitsuru**  
Professor, Tokushima University

Started in 2011 ... 2nd period

Identification of critical genes involved in the pathogenesis of human chronic inflammatory diseases

**YASUTOMO Koji**  
Professor, Tokushima University

Started in 2011 ... 2nd period

Protective mechanisms against environmental stresses leading to therapeutic strategies for chronic inflammation

**YAMAMOTO Masayuki**  
Professor, Tohoku University

Started in 2012 ... 3rd period

The role of chronic inflammation in promotion and malignant progression of cancers

**OSHIMA Masanobu**  
Professor, Kanazawa University

Started in 2012 ... 3rd period

Investigation of pathological implications of guidance molecules in chronic inflammation

**KUMANOGOH Atsushi**  
Professor, Osaka University

Started in 2012 ... 3rd period

Devising novel methods to control chronic inflammation via regulatory T cells

**SAKAGUCHI Shimon**  
Professor, Osaka University

Started in 2012 ... 3rd period

Analysis of mechanisms suppressing chronic inflammation via posttranscriptional regulation in innate immunity

**TAKEUCHI Osamu**  
Professor, Kyoto University

※ The names of the position, institution and organization are as of the end of the R&D pursuit area year.