# Max Planck The University of Tokyo Center for Integrative Inflammology

## Report for project duration 01.01.2014 until 30.06.2016

**Tadatsugu Taniguchi**

**30.06.2017**

1. Short project description

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| Project name/-title<br><br>Max Planck-The University of Tokyo Center for Integrative Inflammology |
| Project place / city<br><br>Tokyo, Japan |
| Responsible person<br><br>Tadatsugu Taniguchi |
| Main targets of project<br>Inflammation is a complex biological response that is essential to protect the host from infection and other harmful stimuli. If left uncontrolled, however, inflammation can exacerbate illness, typically infection, allergy, autoimmunity, and cancer. In addition, inflammation underlies the development and/or aggravation of seemingly unrelated disorders such as cardiovascular, metabolic, and neuronal diseases. Therefore, the study of inflammation, and its linking together a multitude of research disciplines, is one of the most challenging and rapidly growing topics in medical research. Thus, the main targets of our Center are as follows. The Center consolidates seemingly distantly but inflammation-related research disciplines, which have previously been pursued by each individual organization by enhancing mutual cooperation between the two organizations. This facilitates a critical mass and concentrated research effort to spawn a highly attractive field we term “Integrative Inflammology”, the results of which contribute to the development of new methods for the diagnosis, prevention and treatment of inflammation-associated diseases. Thus, the Center expands and strengthens the mutual cooperation that exists between the Max Planck Socety and The University of Tokyo through joint symposia, research collaboration and education efforts by the participation of world-renown Principal Investigators (PIs) drawn from several institutions at the two parent organizations. |

2. Project content

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| Realized project contents<br><br>(1) The participating Pis.<br>The Center is operated by the participation of the following Pis in cooperation with their colleagues.<br>-From Max Planck Society- |

Thomas Boehm (Max-Planck Institute of Immunology and Epigenetics); Member of the Consulting Board
Rudolf Grosschedl (Max-Planck Institute of Immunology and Epigenetics); Co-Director and Member of the Consulting Board
Hartmut Wekerle (Max-Planck Institute of Neurobiology); Member of the Consulting Board
Reinhard Fässler (Max-Planck Institute of Biochemistry)
Thomas Meyer (Max-Planck Institute for Infection Biology)
Stefan Kaufmann (Max-Planck Institute for Infection Biology); Member of the Consulting Board
Dietmar Vestweber (Max-Planck Institute for Molecular Biomedicine); Deputy Director and Member of the Consulting Board
-From The University of Tokyo (UT)-
Ung-il Chung (Graduate School of Engineering)
Masanori Hatakeyama (Graduate School of Medicine); Deputy Director and Member of the Consulting Board
Hiroshi Kiyono (Institute for Medical Science)
Tatsuhiko Kodama (Research Center for Advanced Science and Technology)
Toru Miyazaki (Graduate School of Medicine)
Yasuyuki Sakai (Institute of Industrial Science); Member of the Consulting Board
Takao Shimizu (Graduate School of Medicine and National Center for Global Health and Medicine); Member of the Consulting Board
Tadatsugu Taniguchi (Institute of Industrial Science); Co-Director and Member of the Consulting Board
Kazuhiko Yamamoto (Graduate School of Medicine); Member of the Consulting Board

(2) The projects
To effectively organize and run the Center, participants are broadly categorized into three groups on the basis of research activities, namely, those focusing on (A) development and interplay of inflammation-related cells, (B) regulation of inflammatory responses, and (C) infection and inflammation. It must be emphasized, however, that these groups are cohesive and complementary to each other, constantly sharing ideas, information and technologies, and commonly aiming at establishing the field of integrative inflammology, wherein the Center will take the initiative of coordinating all activities. Furthermore, the participants of all groups will commonly seek to better our understanding of various inflammation-associated diseases as well as develop new strategies for the diagnosis, prevention, and treatment of these diseases. The Center will also coordinate an effective exchange of relevant materials and information for stimulating cooperation. Indeed, a participant is involved in more than one of these groups as cooperator.

(3) Joint meeetings
The Center will organize joint symposia in Japan or in Germany on relevant topics in the context of inflammation and its associated diseases. All members of the two organizations, senior and junior researchers, will be expected to actively participate. In addition, the attendance of graduate and undergraduate students will also be encouraged.

(4) Exchange of scientists
The Center will establish programs to coordinate the mutual exchange of Pis and research scholars, who will exchange ideas or conduct research at the Center in order to stimulate and facilitate the active collaboration among the participating laboratories.

(5) Max Planck Junior Fellows
The Center will provide a Max Planck Junior Fellowship(s), which is a non-tenure track position. Recipient(s) of this fellowship will be an exceptionally talented early-career

researcher, e.g., the postdoctoral or Assistant Professor level. The fellow may join one of the labs of the Center, but will work largely independently with his/her own research budget.

(6) Science diplomacy
Science diplomacy may consist of three aspects of activities: (A) Science provides advice to inform and support foreign policy objectives. (B) Diplomacy facilitates international scientific cooperation. (C) Scientific cooperation improves international relations. As we believe in that our Center can enhance scientific cooperation between Germany and Japan, we aimed at interacting representatives of bureaucrats and politicians so as to mutually stimulate the above-mentioned activities.

3. Project targets

Which concrete targets have been achieved within the mentioned period by using which methods?

Overall, we believe that we made substantial achievements within the Center. These are all introduced in the website of our Center; http://mputc.com/index.html

We published more than 15 scientific papers in high-standard journals with the name of the Center. Joint symposium was held each year by the participation of PIs, young investigators and students (Berlin in 2014, Tokyo in 2015, Berlin in 2016); all these symposia were very successful, particularly by the active participation of young researchers and students.

As a result, one Ph.D. student of one of the PI's lab at UT will start working as postdoctoral fellow at Max-Planck Institute of Immunology and Epigenetics (T, Boehm's lab). Another young researcher at UT visited some Max Planck Institutes for his future position at one of these Institutes. On the other hand, one of the young researchers from Prof. Grosschedl's lab visited our Institute in UT in August, 2016 for collaboration on the transcriptional regulation in lymphocyte development; the paper is in preparation as a joint paper between the two labs.

Further, Rudolf Grosschedl, Co-Director of the Center, visited our Institute in UT as Visiting Research Fellow between March 23 and April 7, 2015. He met with all PIs and their colleagues at UT to discuss about further collaborations within our Center and its future prospects. Tadatsugu Taniguchi is now planning to visit several Max Planck Institutes within this year to discuss about further cooperations within the Center.

As many as 16 lectures, termed "The Max Planck Lecture Series", were held in UT by inviting the world's most renown scientists in the related research fields, and all these lectures were attended very well with active discussions and information exchanges in the inflammology reserach. In addition, a mini-symposium with the name of our Center was held on September 6, 2014 on the topic of cancer research.

Regarding the Max Planck Junior Fellows, as many as 6 junior fellows were appointed, one of whom was already promoted to another organization. They wee selected among the applicants by the Consulting Board of the Mack Plank and UT sides. They all presented their research achievements in one or more of the above-mentioned joint symposia.

As for the science diplomacy, several events may be noteworthy as they may eventually affect the future of our Center as well as the enhancement of scientific interactions between Germany and Japan. During the Center's joint symposia, embassy representatives were invited and each of them gave opening speech. For the first symposium in Berlin, Ambassador Takeshi Nakane of the Japanese Embassy gave an opening speech, and for the second symposium in Tokyo, Mr. Stefan Moebs, Minister of Economic and Scientific Affairs of the German Embassy, gave the speech. In the last year's symposium held in Berlin, Ambassador Takeshi Kimura of the Japanese Embassy gave the opening speech; Ambassador Takeshi Nakane, who now serves as Ambassador of Science and Technology of the Japanese ministry of Foreign Affairs, also kindly attended the symposium-related event. The

interaction with these people for their continuous support to our Center. Finally, Taniguchi met with with Chancellor Dr. Angela Merkelduring her very brief visit to Tokyo and he explained to her about the Center's activities and discussed about the future prospect on how science can contribute to the betterment of the world. Taniguchi also met with German President Joachim Gauck and other dignitaries in 2016 and he explained the importance of this Max Planck Center.

Finally, Dr. Bill S. Hansson, Vice-President of Max Planck Society, visited our Center on June 9th, 2016. Dr. Hansson took this occasion to meet with Dr. Teruo Fujii, Director General of Institute of Industrial Science, and Dr. Kohei Miyazono, Dean of the Graduate School of Medicine, and discussed about issues related to the Center's future activities.