Featuring a Review Article by Dr. Shohei Yokota upon Receiving the JCA-CHAAO Award 2020 on"Research on FLT3 Mutations and Targeted Therapeutics"from the Japanese Cancer Association

As you may know, Dr. Shohei Yokota of The Department of Hematology, Kyoto Prefectural University of Medicine, recently won the "JCA-CHAAO (Japanese Cancer Association-Chugai Academy for Advanced Oncology) Award" in 2020 with Professor Emeritus Tomoki Naoe and Professor Hitoshi Kiyoi of Nagoya University as a joint award. In response to this event, The Journal of Kyoto Prefectural University of Medicine is pleased to publish an invited review article entitled "FLT3 Mutation in Leukemia and the Emerging Targeting Therapies" by Dr. Yokota at the beginning of Volume 130 (2021 issue).

The JCA-CHAAO Award is a medical award established in 2011 with the message of honoring "the achievements by individuals or groups who have conducted research and development related to new anti-cancer drugs and treatment methods, and created products that greatly contribute to the development of cancer medicine in Japan." Although it is a relatively new award, many great medical researchers have been awarded. For example, Distinguished Professor Tasuku Honjo of Kyoto University, who was awarded for the "Discovery of Cancer Immunotherapy with PD-1 Antibody" in 2014, received the Nobel Prize in Physiology or Medicine shortly thereafter.

Dr. Yokota started researching leukemia stem cells when he was a graduate student. Thereafter, when studying in Germany, he demonstrated that clonality analysis and detection of minimal residual diseased of acute lymphocytic leukemia (ALL), which had been possible in only a few cases, were theoretically possible in almost all ALL cases by utilizing clone-specific genomic rearrangement at the immunoglobulin locus or T cell receptor locus as a marker (**Yokota** et al., ***Blood***, **77**: 141, 1991).

After returning to our university, KPUM, Dr. Yokota started searching for genomic markers for acute myeloid leukemia (AML) clones. He discovered that gene duplication occurs in-frame at the genomic locus of the transmembrane tyrosine kinase FLT3 (*FLT3*-ITD) in cases of AML, which was later reported to be the most frequent mutation in human acute leukemia. Thereafter, the Nagoya University group found that point mutations also occur at FLT3, with all of them being activation mutations, and this joint award was related to the development of therapeutic methods by controlling these mutations.

The study of FLT3 gene mutations in AML originated from a paper published by Dr. Yokota's group in December 1996 (Nakao, **Yokota** et al., ***Leukemia***, **10**: 1911, 1996). The number of citations of this paper is approaching 1000 (SCOPUS). According to the PubMed database, medical publications including both "FLT3" and "ITD" first appeared in 1997 after Dr. Yokota's first publication; however, the number since has exceeded 2000 and is increasing. I would like to celebrate by reading Dr. Yokota's review article of the high-impact medical research conducted in a laboratory at our university.

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