Meet the Editorial Board Member

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Dr. Yoshihiro Oka started his research activities at Osaka University Medical School (Japan) in 1983, followed by the continuation of the activities at Basel Institute for Immunology (Switzerland) from 1992 to 1995. The main research field during these periods was B-cell development.

After he came back to Osaka University in 1995, he changed his research field from B-cell development to tumor immunology which is more closely related to clinical medicine, due to the fact that he is a physician scientist and wanted to start basic research with a possibility of leading to translational research.

He paid attention to the expression of Wilms’ tumor gene (WT1) and the gene product in various kinds of malignancies, and started research aiming at the development of WT1-targeting immunotherapy for malignancies. He and his colleagues identified human WT1 peptides which could induce WT1-specific cytotoxic T lymphocytes (CTLs), namely, WT1 CTL epitope peptides, and also showed that WT1 could serve as a target antigen for cancer immunotherapy in vivo using a mouse model. These research results were published in 2000. Subsequently, based on these results, the group started the clinical studies and demonstrated that WT1 peptide vaccination could reduce tumor burden in human cases, including the first-in-human case, which established “proof of concept” of the therapeutic potential of WT1 peptide vaccine.

Following the success of these studies accomplished by Oka et al., research about WT1-targeting cancer immunotherapy, such as WT1 peptide vaccine, WT1 peptide-based dendritic cell (DC) therapy, WT1 mRNA-based DC therapy and WT1-specific T cell receptor-based cell therapy is being performed by multiple research groups, including the group of Osaka University, in the world. Consistent with the spread of the WT1-targeting immunotherapy research, WT1 was rated as the most promising target antigen for cancer immunotherapy in an article of a prestigious journal (Clinical Cancer Research).

He is actively and continuously performing basic and clinical research about the WT1-targeting immunotherapy. He is an expert on tumor immunology and immunotherapy, and served as the president of the 12th annual meeting of Japanese Society of Immunotherapy for Hematological Disorders (JSIHD) held in 2020. He is now at the position of Endowed Chair Professor, Department of Cancer Stem Cell Biology, Osaka University Graduate School of Medicine, Japan.

SELECTED PUBLICATIONS


