

Japan-U.S. Brain Research Cooperation Program
Researchers Dispatched to the U.S. Program FY2018: Report

Field: Neurobiology of disease

1. Researcher

Name: Takeshi Takayasu

Title: Researcher

Affiliation: Department of Neurosurgery, Hiroshima University

2. Research Title: The use of CSF biomarkers in the management of American and Japanese patients with brain tumors

3. U.S. Joint Researchers/Institutes

Please give the name, title and affiliation.

Department of Pathology and Laboratory Medicine, University of Texas Health Science Center at Houston

Leomar Y. Ballester, M.D., Ph.D. Assistant Professor

4. Research Period, from/to (mm/dd/yyyy):

From 09/13/2018 to 03/15/2019

5. Abstract, Results, and Research Significance (300 Words):

In recent years, it has been reported that there is a difference between races in the prognosis of malignant glioma, and we focused on this point and analyzed patient data of the University of Texas. First of all, I was involved in the construction of a patient database. When the prognostic difference was examined by dividing into whites, hispanic, african american and Asians, hispanic tended to have a good prognosis but no significant difference was found. Analysis of the large volume data from the Texas Cancer Registry showed that, as in previous studies, the prognosis for Hispanics and Asians was significantly better. The data at the University of Texas includes additional gene mutation data for tumors, so these were additionally analyzed, but unfortunately gene mutations that differ between races were not identified. These results are in preparation for presentation and publication.

Cerebrospinal fluid samples are under analysis to examine differential diagnosis of tumors and changes after treatment, collected from patients with brain tumors of the University of Texas and Hiroshima University. Even for germ cell tumors that are infrequent in the United States, we transported patient samples from Hiroshima University. Sample analysis will include microRNAs, metabolites, etc. In addition to blood samples, blood, saliva and stool are being collected and will be used for future research such as cytokine analysis and microbiome analysis.

In addition, in order to compare glioma patients in Japan and the US, we are conducting research on gene mutations in ion channels, paying particular attention to the presence or absence of epilepsy. Therefore, I engaged in research work such as database construction of Texas University patients, growth suppression experiments by ion channel blockers using malignant brain tumor cell lines, and RNA extraction from tumor specimens of brain tumor patients.

6. Other (Research concerns, particular points of note):

I did not have any problems during my stay and doing research work. I really appreciate this great opportunity that I participated in sophisticated laboratory in USA.

*Please attach any reference materials as necessary.