【LGS Report: Oversea Training 2019 （La Jolla, San Diego, USA）】

Date	August 25 – August 30, 2019
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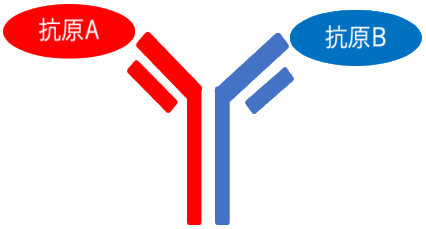
From August 25-30, 2019, we had an oversea training in San Diego, one of the three major biotech-regions in the United States. During our stay, we visited Tanabe Research Laboratories, University of California at San Diego, Kyowa Kirin Pharmaceutical Research institute, and BioLegend. At each institute, we were given lectures on their history and culture, and cutting-edge technologies of drug discovery. We also had the opportunity to listen to each presenter's career track. In the United States, according to their talks, it is easier for young researchers to conduct research in cooperation with researchers of other companies, or with their bosses. But there seemed to be more severe competition in the United States than in Japan. Some researchers from Asian countries also told us how they ended up coming to the United States, which made me think about my career path. The training was very exciting and stimulating.

At Tanabe Research Laboratories

【Important content】

At Tanabe Research Laboratories, we received lectures on the latest next-generation antibody drugs such as Bispecific antibodies and Antibody Drug Conjugates (ADCs).

Bispecific antibodies are antibody drugs created in order that one antibody molecule can bind to two independent target antigens. Simultaneous neutralization of different antigens should be able to enhance drug efficacy. In addition, it is expected that one of its functions to recognize different epitopes for the same target molecule might bring a new mechanism of action.



Schematic diagram of Bispecific antibody

ADC is an antibody drug composed of an antibody linked to an anticancer drug by a linker. After administration, ADC will be taken into the target cell. Then an enzyme in the lysosome will cut the linker to release the drug so that the drug starts exerting its medicinal effect. It is expected that systemic toxicity will be reduced due to the high antigen specificity of the antibody.

【Development of your research activities】

In the diagnosis and treatment of neuromuscular diseases, probably due to the development of diagnostic techniques, I see more cases of autoimmune diseases than before. I even treated neuromuscular disorders, which seemed to be side effects of antibody drugs. Moreover, there have been increasing cases which require not only corticosteroids but also immunosuppressants and molecular targeted drugs for refractory and progressive etiologies.

During this training, I could realize that research activities based on immunology are actively conducted in the field of drug discovery. This training gave me an opportunity to think about what I would need to address when conducting translational research in the future.