キチン化が消失し、c-SMAC が低形成となった。負の選択を誘導する高親和性ペプチド刺激でも c-SMAC は形成されず、TCR には活性化したシグナル分子が共局在していた。

【結論・考察】 選択前 DP 胸腺 T 細胞における TCR のインターナリゼーションは、c-Cbl が責任分子で K63 ポリユビキチン化を介して誘導していると考えられた。負の選択を誘導する高親和性ペプチド刺激でも c-Cbl 欠損による TCR の取り込み低下により c-SMAC は低形成となり TCR シグナルが持続していた。負の選択では一過性の強い TCR シグナルが、正の選択では弱い TCR シグナル持続していると考えられており、c-Cbl 欠損によるこの TCR シグナルの持続により胸腺選択がどう変化するのか、OT-I Tg $Cbl^{-/-}$選択前 DP 胸腺細胞を用いて検討中である。

P3-55

Differences in cytokine and chemokine levels among various diseases and between serum and plasma samples

（社会人大学院博士課程 2 年小児科・思春期科学）
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【Introduction】 The measurement of cytokines and chemokines play a large role in elucidation of the pathology of autoinflammatory and immune diseases. Although at present, cytokine and chemokine levels are measured using multiplex immunoassays, there has not been much discussion about the differences in results between plasma and serum sumples. Therefore, in this study, we compared the results of cytokine and chemokine levels measured in blood serum and plasma samples.

【Subjects and Methods】 The following patients（15 in total）were analyzed : 4 patients with periodic fever, 2 patients with acute encephalopathy, and patient each with aphthous stomatitis, pharyngitis and adenitis, Familial mediterranean fever, Crohn's disease, scleroderma, Juvenile idiopathic arthritis, West syndrome, lissencephaly, norovirus infection, Positive occipital sharp transients of sleep, and food allergy. At the time of blood collection, both plasma and serum with EDTA-2Na were collected. Measurements were performed using the 27-plex Human Cytokine Assay from Biorad.

【Results】 Levels of PDGF, G-CSF, IL- 1β 1, IL-1ra, IL-8, IL17, and MIP-1α, and MIP-1β were found to be different between serum and plasma.

【Discussion】 We demonstrated that patients with periodic fever, aphthous stomatitis, pharyngitis, adenitis, and FMF have high serum and plasma levels of various chemokines and cytokines compared with patients with other diseases. These results suggest the possibility of platelet function and macrophage involvement in the pathology of PFAPA and FMF.

P3-56

Molecular imaging of the hCD19 CAR signalosomes, "CAR microclusters"

（免疫学）
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横須賀　忠

CAR-T cell therapy is certainly one of the recent remarkable advantages in tumor immunotherapy. Human CD19 CAR is particularly shown to possess anti-tumor effects against CD19-positive B cell lymphomas and already applicated for clinical use in the United States. In comparison with its worthwhile evaluation, little is known about the molecular mechanisms how CAR introduces the activation signaling by T cells to kill the target cells and to develop into effector/memory CAR-T cells. To address these issues, we newly established hCD19 CAR imaging system by the combination of single molecule-based total internal reflection fluorescence microscopy（TIRFM）and hCD19-expressing lipid bilayers. We've really defined the distinct signalosomes, we-called "microclusters", and demonstrated that T cell activation is harmoniously regulated by microclusters constructed by not only TCRs but also immune checkpoint receptors in a spatio-temporal fashion. We this time identified "hCD19 CAR microclusters" by using that new imaging technique and

unveils the precise mechanism of T cell activation through hCD19 CAR microclusters. These results will further develop more efficient CAR-T cells and may lead to the next generation of immunotherapy.

国際交流学生報告：G-01～G-10

G-01
カンザス大学　留学報告

（医学部医学科第 6 学年）
○佐野　貴俊、深浦　将太

We had studied in the university of Kansas Medical Center, department of dermatology and anesthesiology for a month.

In the dermatology department, I chose a resident or a senior doctor each day and participated in the outpatient clinic that was held every weekday. I went into the patient exam room with the resident and observed them taking the history. They presented the patient to the faculty member, and the three of us went back in the room to finalize the plan and do any procedures such as biopsy, cryotherapy and so on if necessary.

In the anesthesiology department, morning starts quite early. I had to go to the OR at 6 : 00am every morning. I helped the residents to prepare for the surgery. First, I checked the operation of the mechanical ventilator. After that I prepared the medicines we used for the inductions of the anesthesia. When we finished setting up the OR, we went to the ICU and we met with the patients. We took the patients to the OR and we did general anesthesia. My most important job in the OR was intubation. I think I have done intubation about 20 times.

We really learned a lot from this rotation. Not only about medicine but also how the doctor's life will be in the United States. This was our first time challenging oversea program. To be honest, it was tough to get used to the foreign environment, doctor's medical conversation, and hospital system. However, we felt really comfortable working in the KUMC. Each time when we encountered difficulties, other international students, local students, and doctors helped us. We thought working in the United States is much more suitable for us than in Japan.

We think this experience was eye opening for our carrier.

G-02
ユトレヒト大学　留学報告

（医学部医学科第 6 学年）
○阿部　　怜

There are three main purposes of my exchange program. Developing practical knowledge about anesthesiology, improving English speaking skill, and finding solution to improve working circumstances of doctors in Japan.

Through the clinical clerkship at UMC Utrecht anesthesiology, I performed mask ventilation, laryngeal mask, endotracheal intubation, and IV line. I also have observed many anesthesiology, such as supraclavicular block, epidural and spinal anesthesia, pulsed radio-frequency, and nerve root and sympathetic block. I could participate in many surgeries. I could develop not only anesthetic but also all medical knowledge.

People in the Netherlands are very good at speaking English. They can discuss complex medical problems in English during the conference. Such circumstances improved my English skill.

In Japan, long working hours and its negative effect on health and well-being is a social problem. Especially the working environment of doctors is so severe that it is difficult for women doctor to continue working and childrearing at the same time. Through discussing about this problem with doctors in UMC, I could get some ideas which may solve it. First, nurses in the Netherlands are highly specialized and allowed to do wider range of practice than Japan. Anesthetic nurses