Project number　14

The role of IL-17A-IL-17RA signaling in chronic lung allograft dysfunction

［1］Research group

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Expenditure report of research funds：
Consumables 46,360YEN
Travel cost　83,640YEN

［2］Research setup

Chronic lung allograft dysfunction (CLAD) limits long term survival after lung transplantation. The purpose of this research is to investigate the mechanism of CLAD with mouse model of lung transplantation.

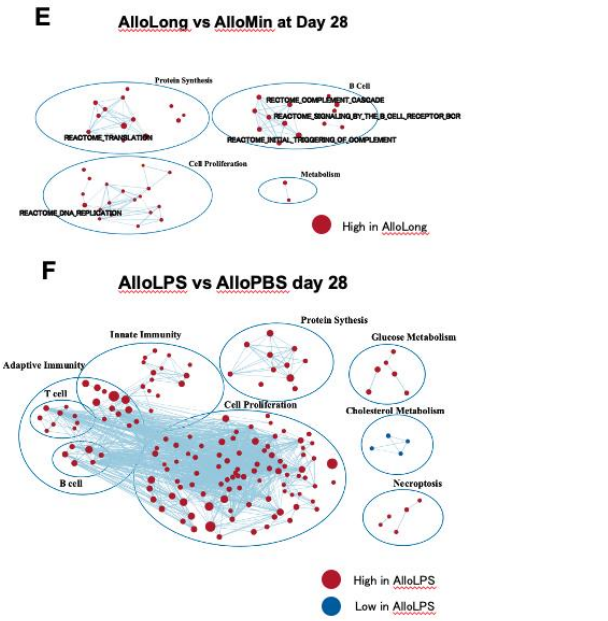
We had online meetings every 2 weeks. We have presented at the International Society for Heart and Lung transplantation annual meeting 2024 at Prague. Also, our other project has been accepted for publication by Science Advances.

［3］Research outcomes

（3－1）Results

We are analyzing RNA samples from two distinct mouse CLAD model. Also, human CLAD samples have been analyzed to connect mouse data and subtypes of human CLAD. This work will provide profound understanding of mythical mechanism of CLAD.

The figure below is a part of result regarding RNA sequence.



（3－2）Future perspectives

We are working on followings;

1) Further characterize innate immunity dependent mechanisms of CLAD by using mouse lung transplantation model.
2) Analyze our data by using RNAseq.
3) Link our findings generated with mouse model with the data obtained from human CLAD lung samples at Toronto General Hospital.

［4］ **List of research achievements**

(1) Watanabe T, Allen J, Keshavjee S, Okada Y, Yeung J, Martinu T, Juvet S. Divergent Transcriptional Features of Obstructive and Restrictive Forms of Chronic Lung Allograft Rejection Modeled in a Single Mouse Strain Combination. The 44th Annual meeting and scientific sessions of the International Society for Heart and Lung Transplantation, Virtual Experience, April 10-13, 2024. Prague, Czech. Oral presentation.

(2) Moshkelgosha S, Levy L, Safavi S, Karunagaran S, Wilson G, Renaud-Picard B, Madu G, Ramchandani R, Oliver J, Watanabe T, Bei KF, Joe B, Li Q, Huszti E, Cheung M, Hedley D, Yeung J, Keshavjee S, Martinu T, Juvet S. Emergence of a senescent and inflammatory pulmonary CD4+ T cell population prior to lung allograft failure. Science Advances. Accepted for publication