



# CDB SEMINAR

**Speaker:** Sachiko Suematsu

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**Title:** “Generation of a synthetic lymphoid tissue-like organoid using a stromal cell line and a biocompatible scaffold in mice ”

Date:	Wednesday, June 8
Time:	16:00 - 17:30
Place:	1F Auditorium of Building C, CDB

## Summary

During the last decade, remarkable progress has been made to understand important factors for functional biology of secondary lymphoid organs. Among of these, it is now known that stromal cells play an essential role in the formation of the normal organized microarchitecture of secondary lymphoid organs. Here we demonstrate that a tissue-engineered, lymphoid tissue-like organoid, which was constructed by transplantation of stromal cells embedded in biocompatible scaffolds into the renal subcapsular space in mice, had an organized tissue structure similar to secondary lymphoid organs. This organoid contained compartmentalized B-cell and T-cell clusters, high endothelial venule-like vessels, germinal centers and follicular dendritic cell (FDC) networks. Furthermore, the organoid was transplantable to naive normal or severe combined immunodeficiency (SCID) mice, and antigen-specific, IgG-isotype antibody formation could be induced soon after intravenous administration of the antigen. This simplified system of lymphoid tissue-like organoid construction will facilitate analyses of cell-cell interactions required for development of secondary lymphoid organs and efficient induction of adaptive immune responses, and may have possible applications in the treatment of immune deficiency.

ref) *Nature Biotech* 22, 1539 - 1545 (2004)

**Host :** Hitoshi Niwa <Pluripotent Cell Studies, CDB>  
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