# FROM BASIC TO APPLIED SCIENCE IN IMMUNOLOGY

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The scientific mission of the Animal Immunology at Seoul National University for the last few years has been (1) Developmental and functional aspect of immune cells, (2) Host-microbiota interaction, and (3) Action mechanism of vaccine/adjuvant.

For the developmental and functional aspect of immune cells, B cells and T cells were investigated in immune systems of mouse and chicken; a number of genes and proteins during the developmental process and thereof function were changed.

Next, impact of probiotic mixture on the regulation of T cell balance (i.e., increase of regulatory T cells) coincident with the reduction of symptoms in mice with atopic dermatitis was evident that verify the theme of host-microbiota interaction. Furthermore, a model for microbiota-removed chickens suggested a regulatory role on the population changes of specific T cells where acetate is responsible for the induction of such cells in cecal tonsils.

Developing effective mucosal subunit vaccine and adjuvant has been unsuccessful mainly because of their insufficient memory T and B cell responses. Recently, we have introduced nano- and bio-materials that can enhance immunity and could serve as mucosal adjuvant for a subunit vaccine.

The goal of the Animal Immunology at Seoul National University, Korea are (1) increase of health status on animals and human, (2) enhancement of scientific knowledge on vaccine/adjuvant immunity, and (3) development of feed-supplement or therapeutic approaches through illuminating a host-microbiota interaction.