

## Medical Genetics

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### Other Faculty Members

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### Major Scientific Interests of the Group

Differences in our DNA sequence are responsible for the differences in our appearance, susceptibility to diseases, and variability to drug response. The focus of our research was to identify novel genetic variants associated with allergic diseases/immune-related diseases and to elucidate the associated pathways by genome analysis. Big genetic data has been generated by next generation sequencing and array-based genotyping technique in recent years. Using this big data, we aim to improve our ability to predict common diseases and new treatments.

### Projects for Regular Students in Doctoral or Master's Programs

- 1) Identification of susceptibility genes for allergic diseases
- 2) HLA-peptide binding assay for immune-related diseases

### Selected Publications

- 1) Koseki T, Morii W, Noguchi E, Ishikawa M, Yang L, Yamamoto-Hanada K, Narita M, Saito H, Ohya Y. Effect of filaggrin loss-of-function mutations on atopic dermatitis in young age: a longitudinal birth cohort study. *J Hum Genet*, 2019
- 2) Morii W, Sakai A, Ninomiya T, Kidoguchi M, Sumazaki R, Fujieda S, Noguchi E. Association of Japanese cedar pollinosis and sensitization with HLA-DPB1 in the Japanese adolescent. *Allergol Int*, 67: 61-66, 2018
- 3) Miyadera H, Ohashi J, Lernmark Å, Kitamura T, Tokunaga K. Cell-surface MHC density profiling reveals instability of autoimmunity-associated HLA. *J Clin Invest*. 2015, 125: 275–291
- 4) Noguchi E, Sakamoto H, Hirota T, Ochiai K, Imoto Y, Sakashita M, Kurosaka F, Akasawa A, Yoshihara S, Kanno N, Yamada Y, Shimojo N, Kohno Y, Suzuki Y, Kang M J, Kwon J W, Hong S J, Inoue K, Goto Y, Yamashita F, Asada T, Hirose H, Saito I, Fujieda S, Hizawa N, Sakamoto T, Masuko H, Nakamura Y, Nomura I, Tamari M, Arinami T, Yoshida T, Saito H, Matsumoto K. Genome-Wide Association Study Identifies HLA-DP as a Susceptibility Gene for Pediatric Asthma in Asian Populations. *PLoS Genet*, 7: e1002170, 2011