

## Pulmonary Medicine

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### Major Scientific Interests of the Group

- 1) Genetic basis of asthma and COPD
- 2) Helper T cell paradigm in respiratory diseases
- 3) Cross-talk between pro-inflammatory transcription factors and respiratory diseases
- 4) Oxidative stress in the pathogenesis of respiratory diseases
- 5) Molecular targeting for lung cancer
- 6) Psycho-oncology and palliative care research

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

Students in doctoral and master's programs conduct translational research projects to elucidate the aspects described above using genetic, molecular biological and biochemical techniques. Multidisciplinary clinical research studies are also conducted. Students are expected to develop study design, give presentations on their research topics and write scientific papers.

### Study Programs for Short Stay Students (one week – one trimester)

Our short term programs present opportunities for students to learn how to handle animal research models and to advance their basic laboratory skills. Those who wish to gain additional experience in clinical respiratory medicine may also participate in educational rounds and conferences.

### Selected Publications

- 1) Hayashi S, Matsuno Y, Tsunoda Y, et al. Transcription Factor T-Bet Attenuates the Development of Elastase-Induced Emphysema in Mice. *Am J Respir Cell Mol Biol*. [Epub ahead of print], 2019.
- 2) Kanazawa J, Masuko H, Yatagai Y, et al. Association analyses of eQTLs of the TYRO3 gene and allergic diseases in Japanese populations. *Allergol Int*. 68: 77-81, 2019.
- 3) Sakurai H, Morishima Y, Ishii Y, et al. Sulforaphane ameliorates steroid insensitivity through an Nrf2-dependent pathway in cigarette smoke-exposed asthmatic mice. *Free Radic Biol Med*. 129:473-485, 2018.

- 4) Matsuyama M, Martins AJ, Shallom S, et al. Transcriptional Response of Respiratory Epithelium to Nontuberculous Mycobacteria. *Am J Respir Cell Mol Biol.* 58: 241-252, 2018.
- 5) Nakajima M, Kawaguchi M, Matsuyama M, et al. Transcription Elongation Factor P-TEFb Is Involved in IL-17F Signaling in Airway Smooth Muscle Cells. *Int Arch Allergy Immunol.* 176: 83-90, 2018.
- 6) Yatagai Y, Hirota T, Sakamoto T, et al. Variants near the HLA complex group 22 gene (HCG22) confer increased susceptibility to late-onset asthma in Japanese populations. *J Allergy Clin Immunol.* 138: 281-283, 2016.
- 7) Yamada H, Masuko H, Yatagai Y, et al. Role of Lung Function Genes in the Development of Asthma. *PLoS One.* 11: e0145832, 2016.
- 8) Shiozawa T, Iyama S, Toshima S, et al. Dimethylarginine dimethylaminohydrolase 2 promotes tumor angiogenesis in lung adenocarcinoma. *Virchows Arch.* 468: 179-190, 2016.
- 9) Kiwamoto T, Katoh T, Evans CM, et al. Endogenous airway mucins carry glycans that bind Siglec-F and induce eosinophil apoptosis. *J Allergy Clin Immunol.* 135:1329-1340, 2015.
- 10) Tamura T, Kurishima K, Watanabe H, et al. Characteristics of clinical N0 metastatic non-small cell lung cancer. *Lung Cancer.* 89: 71-75, 2015.
- 11) Nakazawa K, Kurishima K, Tamura T, et al. Survival difference in NSCLC and SCLC patients with diabetes mellitus according to the first-line therapy. *Med Oncol.* 30:367, 2013.
- 12) Hirota T, Takahashi A, Kubo M, et al. Genome-wide association study identifies eight new susceptibility loci for atopic dermatitis in the Japanese population. *Nat Genet.* 44:1222-1226, 2012.
- 13) Hirota T, Takahashi A, Kubo M, et al. Genome-wide association study identifies three new susceptibility loci for adult asthma in the Japanese population. *Nat Genet.* 43: 893-896, 2011.
- 14) Hizawa N, Yamaguchi E, Takahashi D, et al. Functional polymorphisms in the promoter region of macrophage migration inhibitory factor and atopy. *Am J Respir Crit Care Med.* 169: 1014-1018, 2004.
- 15) Hizawa N, Yamaguchi E, Konno S, et al. A functional polymorphism in the RANTES gene promoter is associated with the development of late-onset asthma. *Am J Respir Crit Care Med.* 166: 686-90, 2002.
- 16) Hizawa N, Yamaguchi E, Jinushi E, et al. Increased total serum IgE levels in patients with asthma and promoter polymorphisms at CTLA4 and FCER1B. *J Allergy Clin Immunol.* 108: 74-79, 2001.
- 17) Hizawa N, Yamaguchi E, Jinushi E, et al. A common FCER1B gene promoter polymorphism influences total serum IgE levels in a Japanese population. *Am J Respir Crit Care Med.* 161: 906-909, 2000.