Pediatrics

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Major Scientific Interests of the Group

Physiologic and pathologic processes of growth and development in terms of molecular mechanism in embryogenesis, differentiation, apoptosis and regeneration. Development of methods to improve human health and control diseases on the basis of the above results.

Projects for Regular Students in Doctoral or Master's Programs

1) Molecular and genetic mechanism of diseases of children.
2) Functional and quantitative analysis of the development of children with and without diseases.
3) Establishment of novel gene therapy.

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

1) Surface marker analysis of peripheral blood cells, and use of flow-cytometer for molecular functional analysis.
2) Genetic analysis of diseases of children.
3) Functional and quantitative analysis of child development.
4) Culture of stem cells and functional analysis of cord blood cells.
5) In vivo analysis using gene knockout mice.

Selected Publications

1) Flow cytometry-based diagnosis of primary immunodeficiency diseases. Kanegane H, Hoshino A, Okano T, Yasumi T, Wada T, Takada H, Okada S, Yamashita M, Yeh TW, Nishikomori R, Takagi M, Imai K, Ochs HD, Morio T. Allergol Int. 2018 Jan;67(1):43-54.
2) A nationwide survey of common viral infections in childhood among patients with primary immunodeficiency diseases. Nanishi E, Hoshina T, Takada H, Ishimura M, Nishio H, Uehara T, Mizuno Y, Hasegawa S, Ohga S, Nagao M, Igarashi M, Yajima S, Kusumoto Y, Onishi N, Sasahara Y, Yasumi T, Heike T, Hara T; PID-Infection Study Group. J Infect. 2016 Oct;73(4):358-68.
3) Immunoregulatory function of neonatal nucleated red blood cells in humans. Cui L, Takada H, Takimoto T, Fujiyoshi J, Ishimura M, Hara T. Immunobiology. 2016 Aug;221(8):853-61.
4) Insufficient immune reconstitution after allogeneic cord blood transplantation without chemotherapy conditioning in patients with SCID caused by CD3δ deficiency. Takada H, Ishimura M, Hara T. Bone Marrow Transplant. 2016

Aug;51(8):1131-3
5) Invasive Bacterial Infection in Patients with Interleukin-1 Receptor-associated Kinase 4 Deficiency. Takada H, Ishimura M, Takimoto T, Kohagura T, Yoshikawa H, Imaizumi M, Shichijyou K, Shimabukuro Y, Kise T, Hyakuna N, Ohara O, Nonoyama S, Hara T. Medicine (Baltimore). 2016 Jan;95(4):e2437.
6) Takimoto T, Takada H, Ishimura M, Kirino M, Hata K, Ohara O, Morio T, Hara T: Wiskott-Aldrich syndrome in a girl caused by heterozygous WASP mutation and extremely skewed X-chromosome inactivation: a novel association with maternal uniparental isodisomy 6. Neonatology, vol. 107, 185-190, 2015
7) Yamamura K, Takada H, Uike K, Nakashima Y, Hirata Y, Nagata H, Takimoto T, Ishimura M, Morihana E, Ohga S, Hara T: Early progression of atherosclerosis in children with chronic infantile neurological cutaneous and articular syndrome. Rheumatology (Oxford), vol. 53: 1783-1787, 2014
8) Eljaafari FM, Takada H, Tanaka T, Doi T, Ohga S, Hara T: Potent induction of IFN-γ production from cord blood NK cells by the stimulation with single-stranded RNA. J Clin Immunol, vol. 31, 728-735, 2011
9) Hoshina T, Takada H, Sasaki-Mihara Y, Kusuhara K, Ohshima K, Okada S, Kobayashi M, Ohara O, Hara T: Clinical and host genetic characteristics of Mendelian susceptibility to mycobacterial diseases in Japan. J Clin Immunol, vol. 31, 309-314, 2011
10) Takada H, Nomura A, Ishimura M, Ichiyama M, Ohga S, Hara T: NEMO mutation as a cause of familial occurrence of Behçet's disease in female patients. Clin Genet, vol. 78, 575-579, 2010
11) Minegishi Y, Saito M, Nagasawa M, Takada H, Hara T, Tsuchiya S, Agematsu K, Yamada M, Kawamura N, Ariga T, Tsuge I, Karasuyama H: Molecular explanation for the contradiction between systemic Th17 defect and localized bacterial infection in hyper-IgE syndrome. J Exp Med, vol. 206, 1291-1301, 2009
12) Takada H, Ishimura M, Inada H, Ohga S, Kusuhara K, Moroi Y, Furue M, Hara T: Lipopolysaccharide-induced monocytic cell death for the diagnosis of mild neonatal-onset multisystem inflammatory disease. J Pediatr, vol. 152, 885-887, 2008