

International Vaccine Design Center

Division of Systems Immunology (Human Immune-Profiling Team)

ヒト免疫プロファイリング系・数理免疫学分野

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The aim of this laboratory is to launch an interdisciplinary research network to “quantitatively” understand the behaviors of pathogens and the immune reaction against pathogen infection. Our study will connect microbiology and immunology, which will lead to the development of novel vaccines in the future.

1. Understanding the evolution of SARS-CoV-2

Yu Kaku, Arnon Plianchaisuk, Ziyi Guo, Alfredo Amolong Hinay, Jr., Kaoru Usui, Wilaiporn Sairuang, Spyridon Lytras, Keiya Uriu, Shusuke Kawakubo, Luca Nishimura, Yusuke Kosugi, Shigeru Fujita, Luo Chen, Jarel Elgin Tolentino, Lin Pan, Wenye Li, Maximilian Stanley Yo, Yukun Zhu, Yueying Zhang, Ruojin Tian, Mai Suganami, Adam Patrick Strange, Naomi Ohsumi, Shiho Tanaka, Eiko Ogawa, Mika Chiba, Kyoko Yasuda, Keiko Iida, Kaho Okumura, Tsuki Fukuda, Tamaki Yoshihara, Keiko Koizumi, Hiroaki Unno, Jumpei Ito, Kei Sato.

Severe acute respiratory syndrome coronavirus 2

(SARS-CoV-2) is a causative agent of coronavirus disease 2019 (COVID-19). SARS-CoV-2 emerged at the end of 2019 and has spread all over the world. Since then, more than 770 million people have been infected with this virus and more than 7 million people have died of COVID-19, meaning that COVID-19 is ongoing pandemic and a most urgent and crucial problem in the current human society. To proceed and accelerate COVID-19-related researches in Japan, we launched a consortium, called “The Genotype to Phenotype Japan (G2P-Japan) Consortium” in January 2021. As of December 2024, more than 10 principal investigators participate in this consortium and proceed fruitful collaboration. We aim to elucidate the virological characteristics of the SARS-CoV-2 variants continuously emerging in the world.

Publications

Yu Kaku, Kaho Okumura, Miguel Padilla-Blanco, Yusuke Kosugi, Keiya Uriu, Alfredo A. Hinay, Luo Chen, Arnon Plianchaisuk, Kouji Kobiyama, Ken J. Ishii, Genotype to Phenotype Japan (G2P-Japan) Consortium, Jiri Zahradnik, Jumpei Ito, Kei Sato. Virological Characteristics of the SARS-CoV-2 JN.1

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