



## APSID Centre of Excellence

Department of Immunology  
National Center for Children's Health, Beijing Children's Hospital, Capital Medical University  
Beijing, China

Paediatric Immunology, Allergy and Infectious Diseases  
Department of Paediatrics and Adolescent Medicine, The University of Hong Kong  
Hong Kong, China

### Clinical

Exposure to a wide spectrum of patients with inborn errors of immunity (IEIs) that cause immunodeficiencies, autoinflammation and autoimmunity, rheumatologic, allergic and other immunodysregulatory disorders. Training includes inpatient consultations and rounds, multidisciplinary care with other subspecialists and allied health professionals (including credentialed paediatric respirologists, paediatric haematologists/oncologists, paediatric endocrinologists, paediatric neurologists, clinical microbiologists, adult immunologists, immunopathologists, physiotherapists, occupational therapists, speech therapists, dietitians, etc), HSCT units, inpatient day cases, outpatient clinics, personalised medicine and the use of targeted therapies and biologics.

### Laboratory

Diagnostic laboratories:

- Routine clinical investigations (flow cytometry, TRECs and newborn screening for SCID, nitroblue tetrazolium/dihydrorhodamine test, immunofluorescence, ELISA, anti-neutrophil antibodies, white blood cell adhesion function, vaccine serological responses, B cell subsets and proliferation, NK/CTL cell cytotoxicity, T cell subsets and proliferation, signalling pathway-based functional assays, HLA typing, bone marrow donor engraftment and chimerism testing, next-generation sequencing)
- Microbiological investigations (PCR including nasopharyngeal viral panel and molecular testing for *Mycobacterium tuberculosis* complex and *Pneumocystis jirovecii*, culture of microbes, serological testing)
- Pulmonary function testing facilities

Advanced basic and translational laboratories:

- Dry laboratory teams (investigation on genetic causes of IEI and gene discovery involved in immunity, with cutting edge technology in research on whole exome and genome sequencing, Sanger sequencing, single-cell transcriptomics, RNA sequencing, proteomics, CyTOF, bioinformatics),
- Wet laboratory teams (supported by cell culture and animal facilities, functional assays on human specimens including blood, bone marrow, skin fibroblasts, plaque reduction neutralization and T cell immunogenicity post-vaccination, functional validation of the disease-causative nature of variants in IEI patients)
- Information technology teams (epidemiology, public health, public policy and clinical research on IEI and vaccination outcomes with informatics, big data analysts and statisticians)

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