

# PID Facilities in India

## Postgraduate Institute of Medical Education and Research, Chandigarh

Website: [www.pgimer.edu.in](http://www.pgimer.edu.in)

(ICMR-DHR Advanced Centre for Diagnosis and Research on Primary Immunodeficiency Diseases)



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### Diagnostic facilities available:

- **Nephelometry-based assays**
  - Serum Immunoglobulin estimation IgG, A, M
  - Serum immunoglobulin G subclass estimation
  - Serum Complement C3 and C4 estimation
- **Enzyme-linked immunosorbent based assays**
  - Serum IgE
  - Antibody to Diphtheria
  - Antibody response to polysaccharides
  - Complement C1q, C2, CH50, AP50
- **Flowcytometry based assays**
  - Surface expression**
    - Lymphocyte subset analysis: T, B and NK
    - T cell subsets (CD4, CD8, CD45RA)
    - Double negative T cells (CD3, TCR $\alpha\beta$ , CD4, CD8)
    - CD18, CD11a (LAD1)
    - CD132 (common  $\gamma$  chain SCID), CD127 (IL7R $\alpha$ ) for SCID
    - b558 (gp91phox/p22phox) for (CGD)
    - HLA DR (MHC class II deficiency, Omenn)

- IFN $\gamma$ R1, IL-12R $\beta$ 1 expression (MSMD)
- CD40 (AR HIGM)
- B cell immunophenotyping for CVID
  - Naïve and Memory B cells
  - Switched and unswitched memory B cells
  - Transitional cells
  - Plasmablasts
  - CD19<sup>+</sup> CD21<sup>low</sup>

#### **Intracellular antigens**

- Btk expression on monocytes (XLA)
- WAS protein on lymphocytes (Wiskott-Aldrich syndrome)
- p47phox, p67 phox (CGD)
- Perforin on NK cells and Cytotoxic T cells (HLH)
- SAP
- pSTAT3 (AD-HIES), pSTAT1 (MSMD)
- Th17 (AD-HIES, CMC)
- TReg (Foxp3)

#### **Functional assays**

- Dihydrorhodamine assay (DHR) (CGD)
- CD40L expression on activated T cells (X-HIGM)
- Apoptosis assay
- **Western blot assays:** STAT3 (total), pSTAT3
- **Molecular assays**
  - Gene sequencing for STAT3, BTK, CYBB, WAS, IL2RG, CD40L

