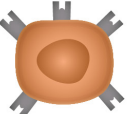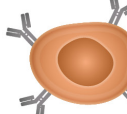# Phenotype Finder

Immune Cell Phenotyping Key Markers
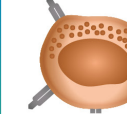
Lymphocytes

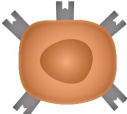**T Cell**
- CD3
- CD4
- CD8

B Cell
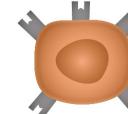- CD19
- CD20
- CD21

Natural Killer Cell
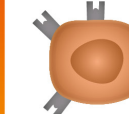- CD56
- CD335
- CD8

CD3+ CD4+ T Cells

Naïve
- CD45RA
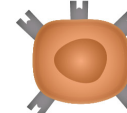- CCR7
- CD62L
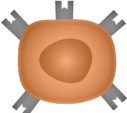
Regulatory
- FOXP3
- CD103

Memory
- CD25
- CD45RO
- CD62L

CD3+ CD8+ T Cells
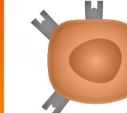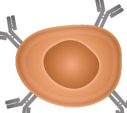
Naïve
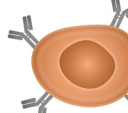- CD45RA

Cytotoxic
- Granzyme A
- Granzyme B

Memory
- CD45RO

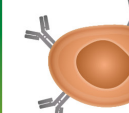### CD19+ CD20+ B cells

Follicular
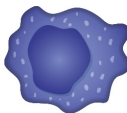- CD21
- CD22
- CD23

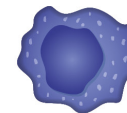**Activated**
- CD25
- CD27
- CD69

Memory
- CD40
- CXCR4
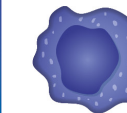- CXCR5

CD14+ CD11b+ Macrophages
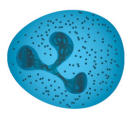
M1
- CD68
- CD86
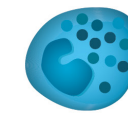- CD282

M2
- CD163
- CD200R
- CD206

TAM
- CD81
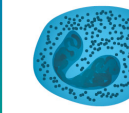- CD106
- Dectin-1

Granulocytes

Neutrophils
- CD13
- CD15
- CD33

Basophils
- CD69
- CD123
- Fcε R1α

Eosinophils
- CD9
- CD23
- Siglec 8

Apoptosis Analysis by Western Blotting

Intrinsic Pathway

Early
- Bcl-2
- BID
- BAX
- PUMA

Mid
- Cytochrome C
- APAF-1
- Caspase-9

Late
- DFF40
- DFF45
- PARP-1

Extrinsic Pathway

Early
- RIPK3
- RIPK4
- FADD
- Caspase-8

Mid
- Caspase-3
- Caspase-7

Late
- DFF40
- DFF45
- PARP-1

Apoptosis Analysis by Flow Cytometry

Intrinsic Pathway

Early
- Bcl-2

Mid
- Mitochondrial Membrane Potential Kit
- Mitochondrial Permeability Transition Kit

Late
- DAPI
- Hoechst
- PI
- 7AAD

Extrinsic Pathway

Early
- Caspase-3/7 Kits
- Caspase-8 Kits

Mid
- Caspase-9*
- Poly Caspase*
- Annexin V*
- FLISP Serine Protease*
- Cathepsin B*

*Kits

Late
- DAPI
- Hoechst
- PI
- 7AAD

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