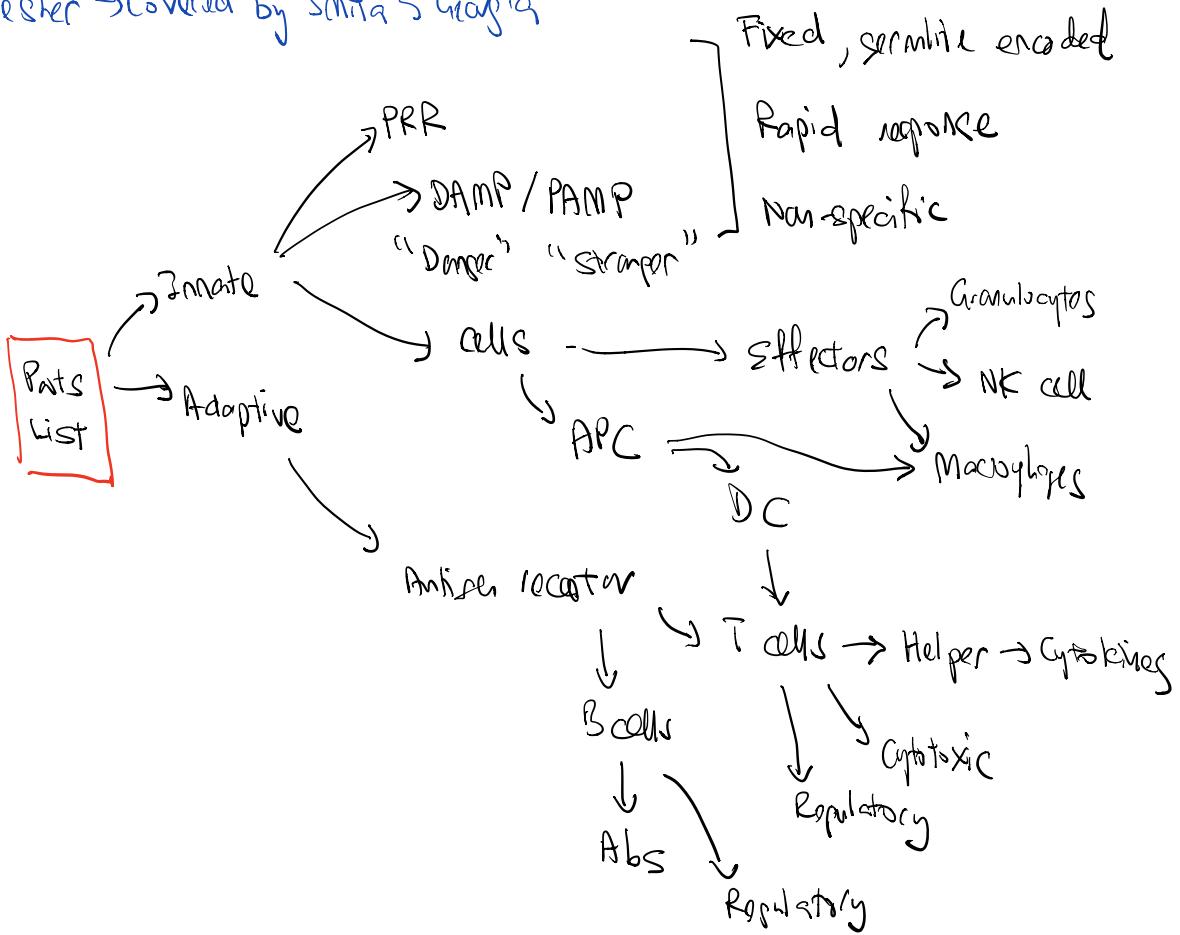
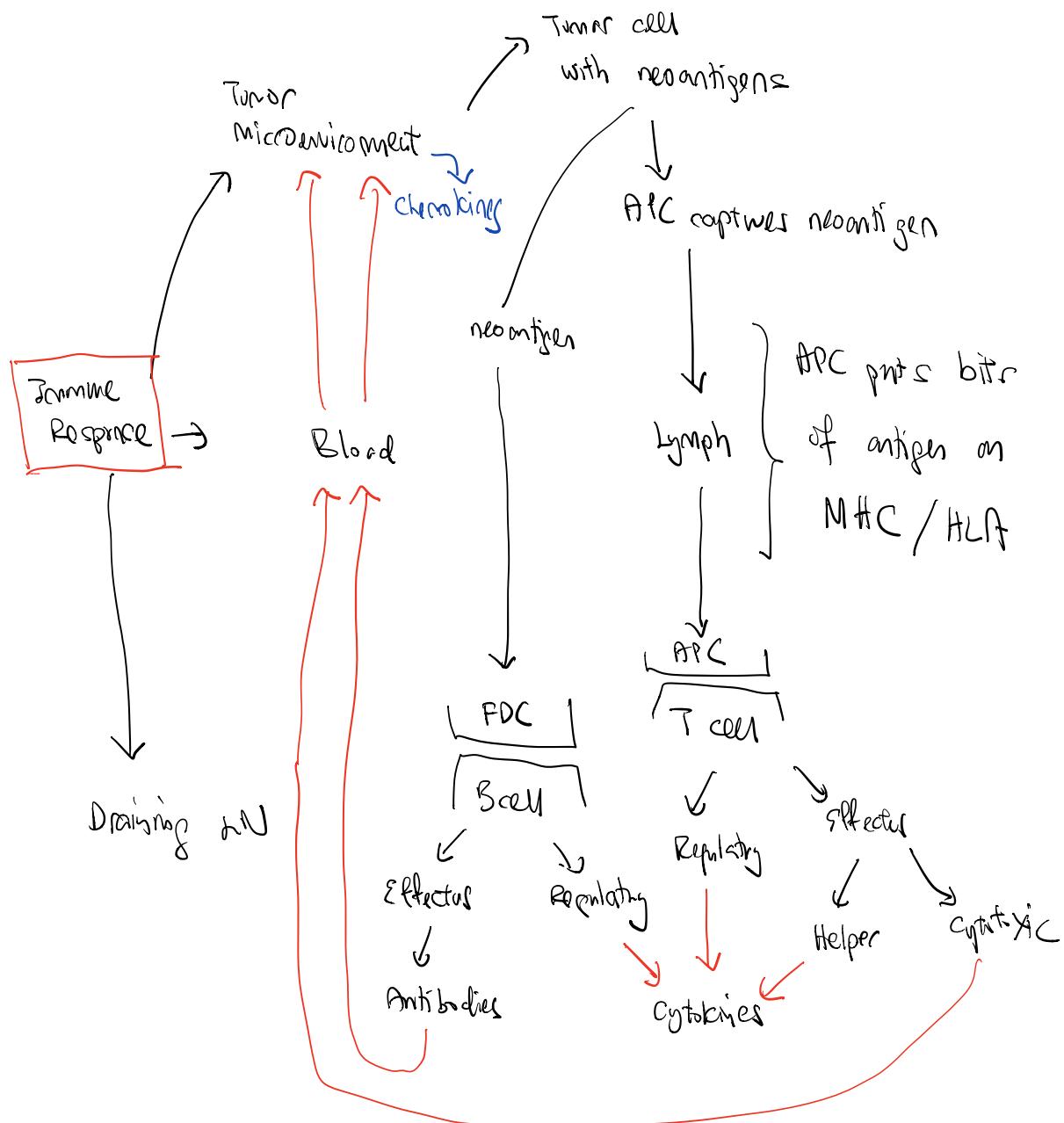


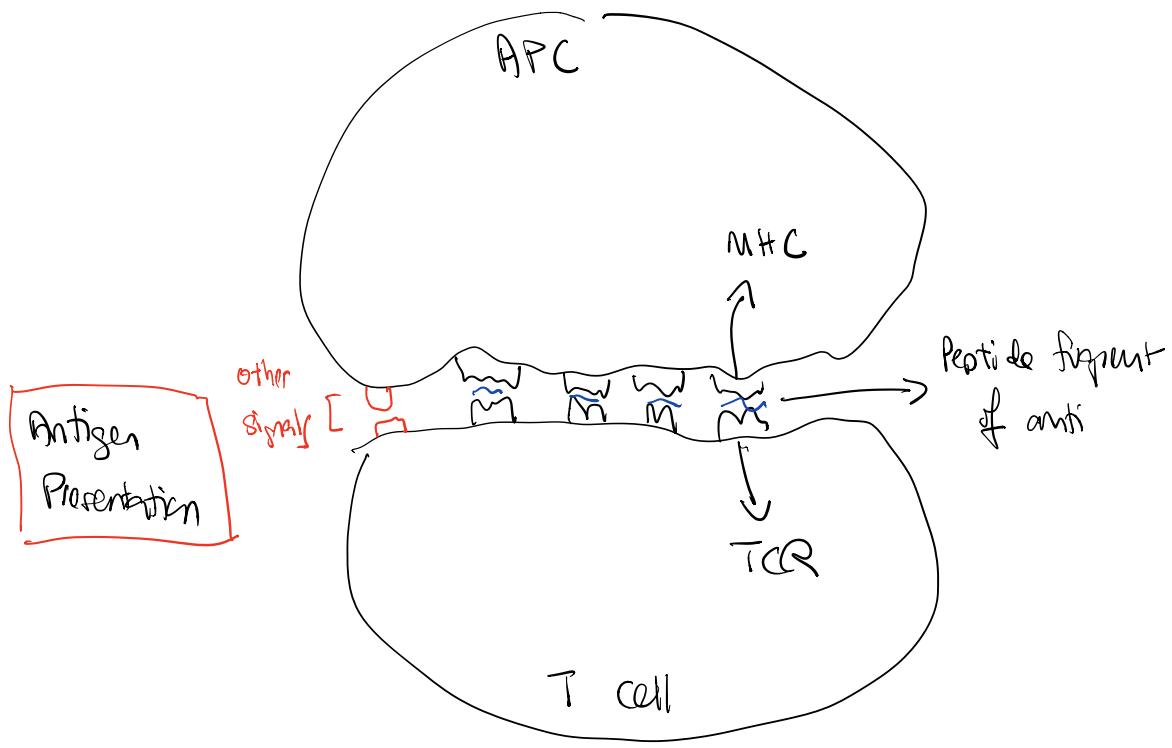
① Focus on "big picture" concepts,
not details of assays

② will skip sequencing based assays
⇒ Josh will cover

Refresher → Covered by Smita's Graph







Presentation

Many types of bns in population

MHC
(aka HLA in humans) = Hot dog bun
small # of bun type in individual

Peptide
(from cancer cell protein) = Sausage
Sausages only stick to
"compatible" bun types

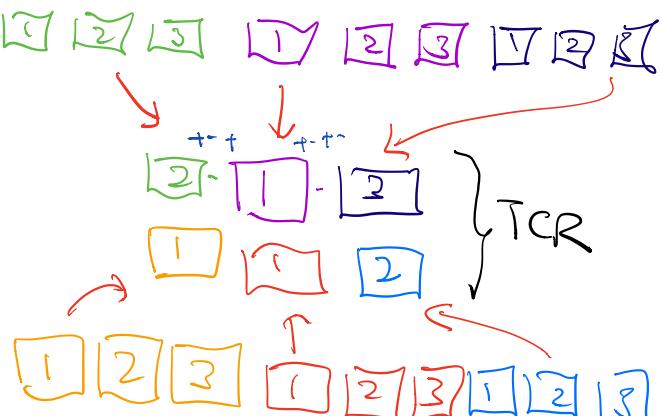
Antigen Presentation
T and B cell perspective

Each T cell has

many copies of one TCR

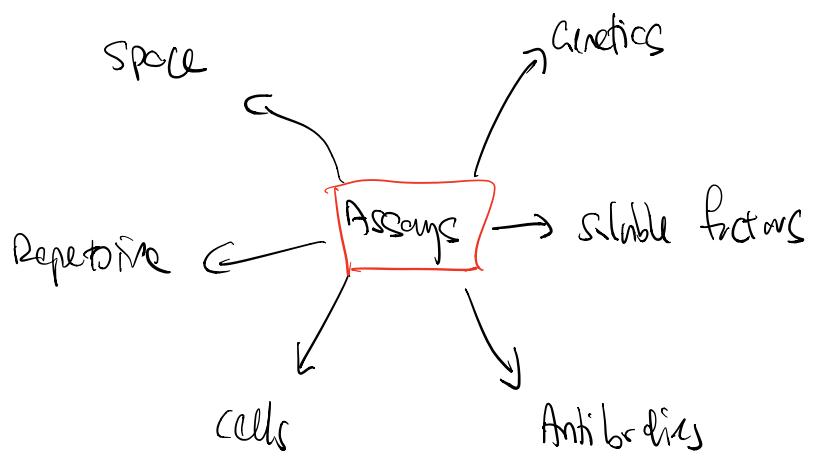
Randomly made

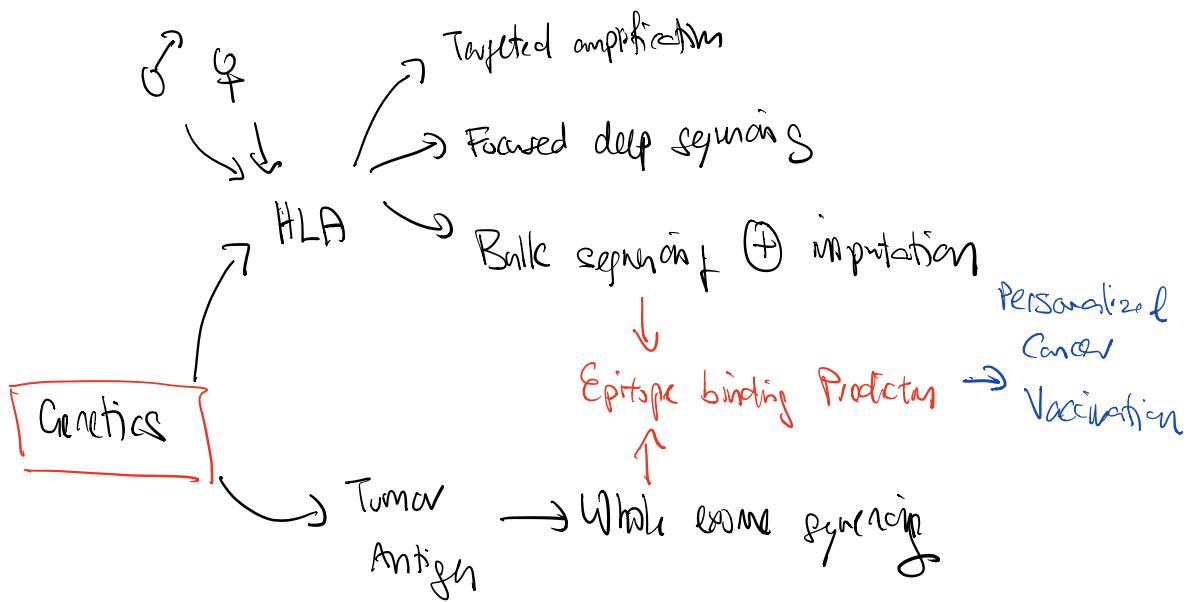
by combining V(D)J gene segments

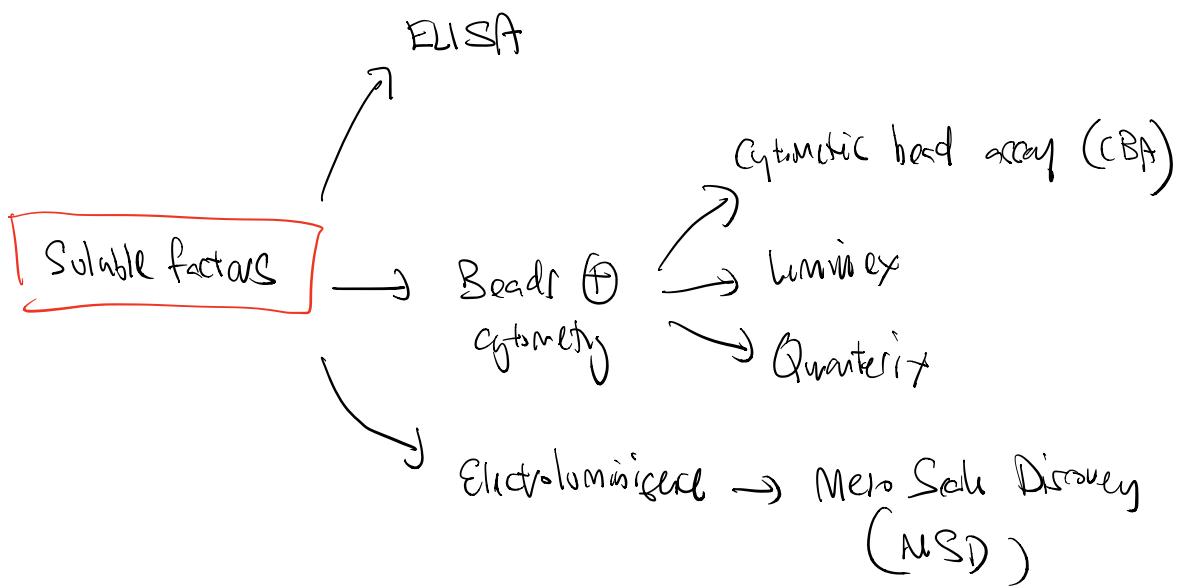


Implications

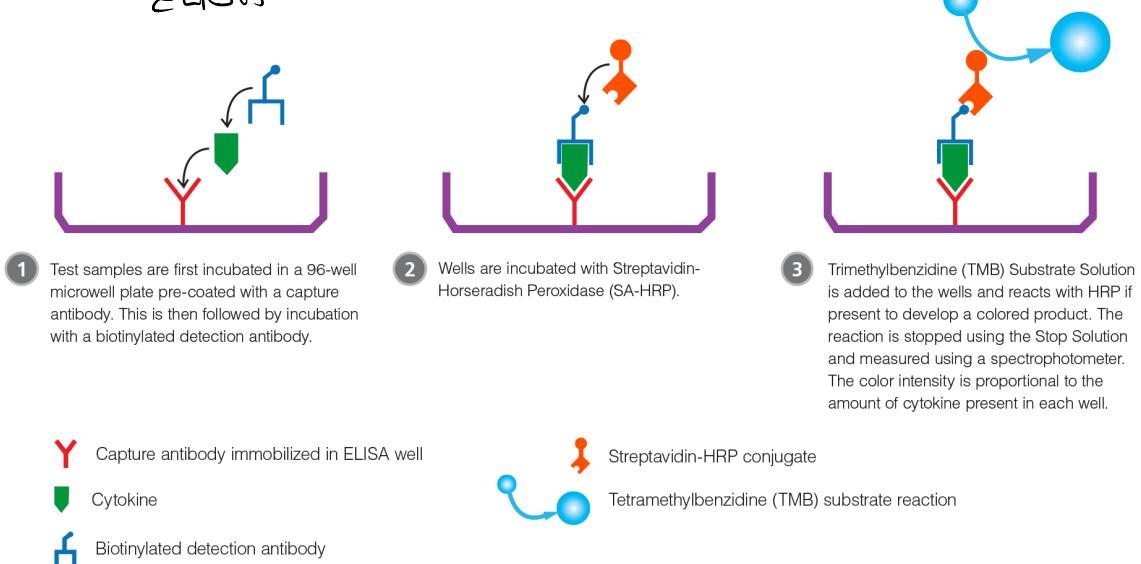
- ① Almost limitless different TCR types
- ② Each T cell is born with a unique TCR type
- ③ Huge diversity of T cells in body
- ④ T cell binding to peptide:MHC = random
 - ↳ many children
 - ↳ strong binding
- ⑤ T cell kindergarten } central tolerance
 - } clones
- ⑥ Importance of neoantigen from tumor



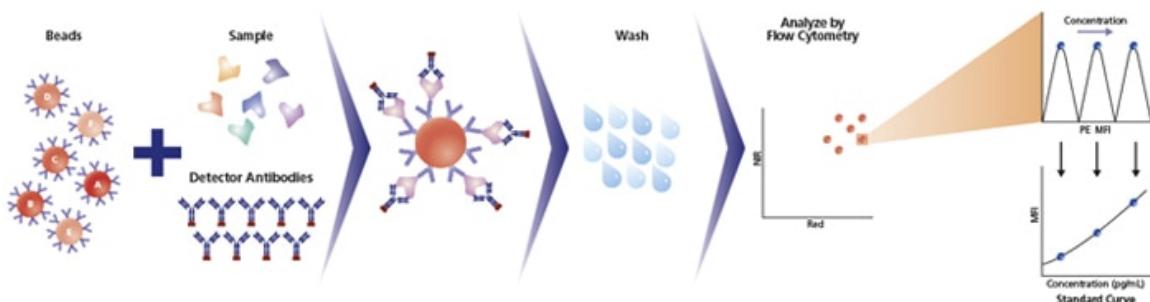




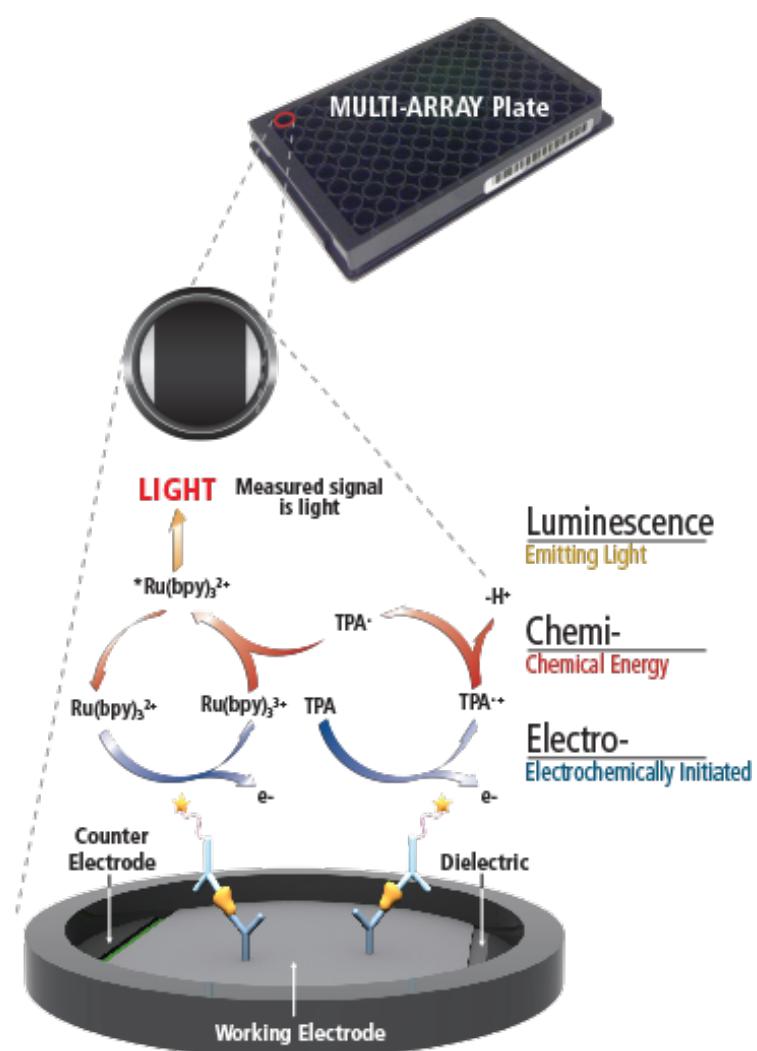
ELISA

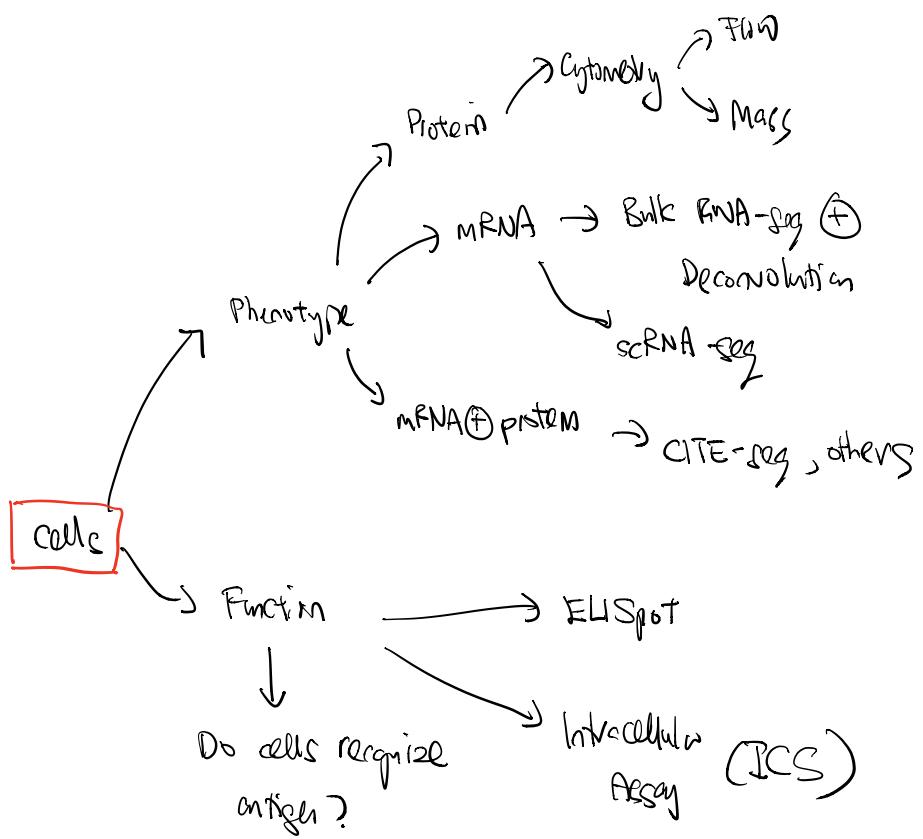


Cytokine beads ~ Luminex etc

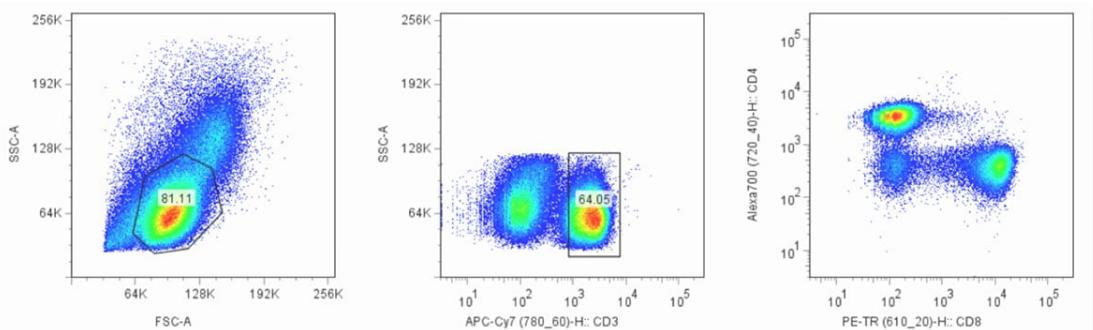
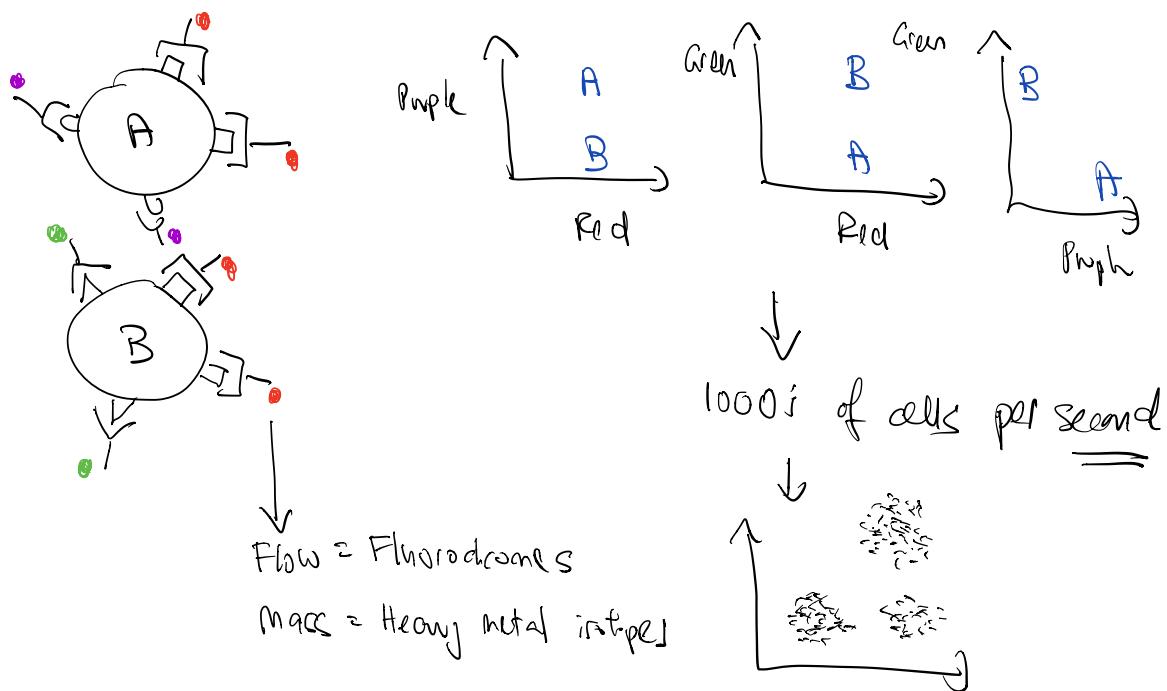


M&D



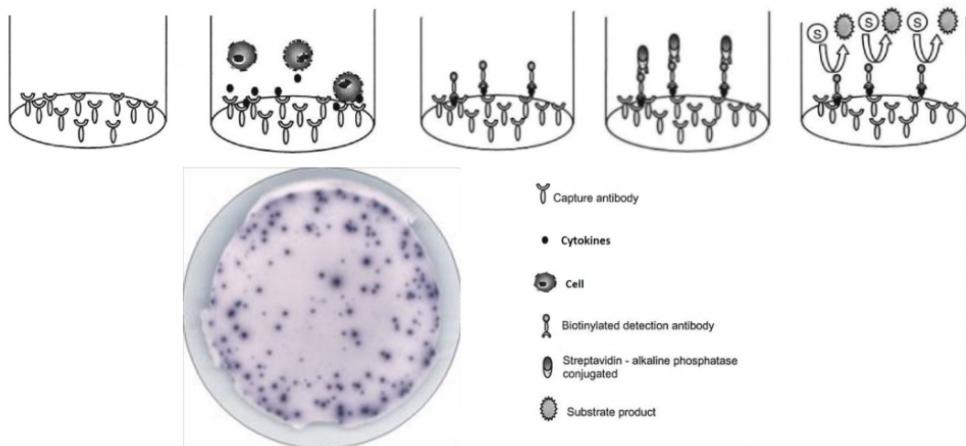


Cytometry

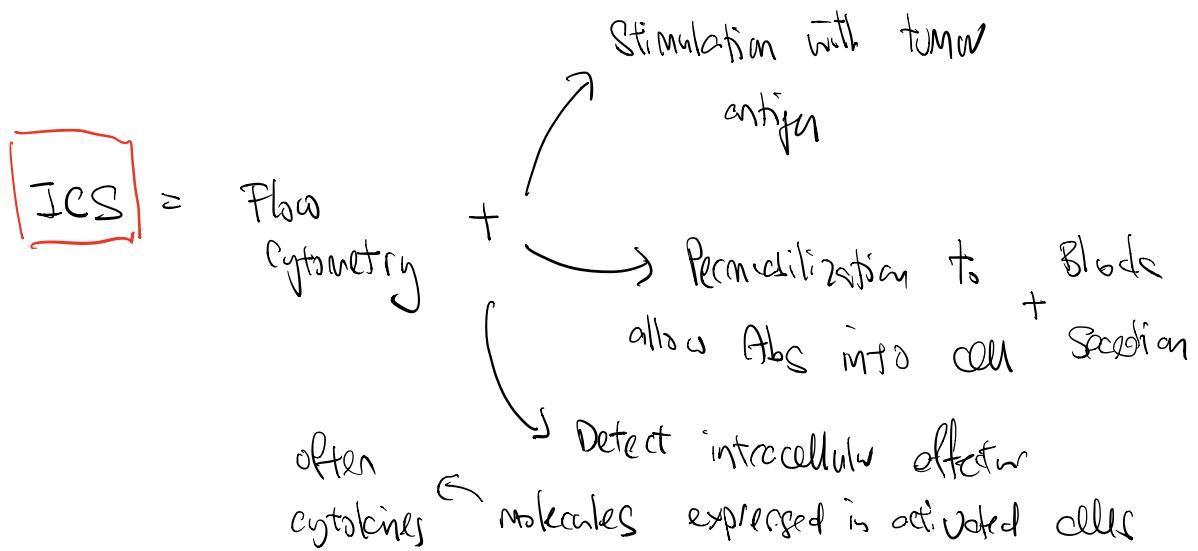


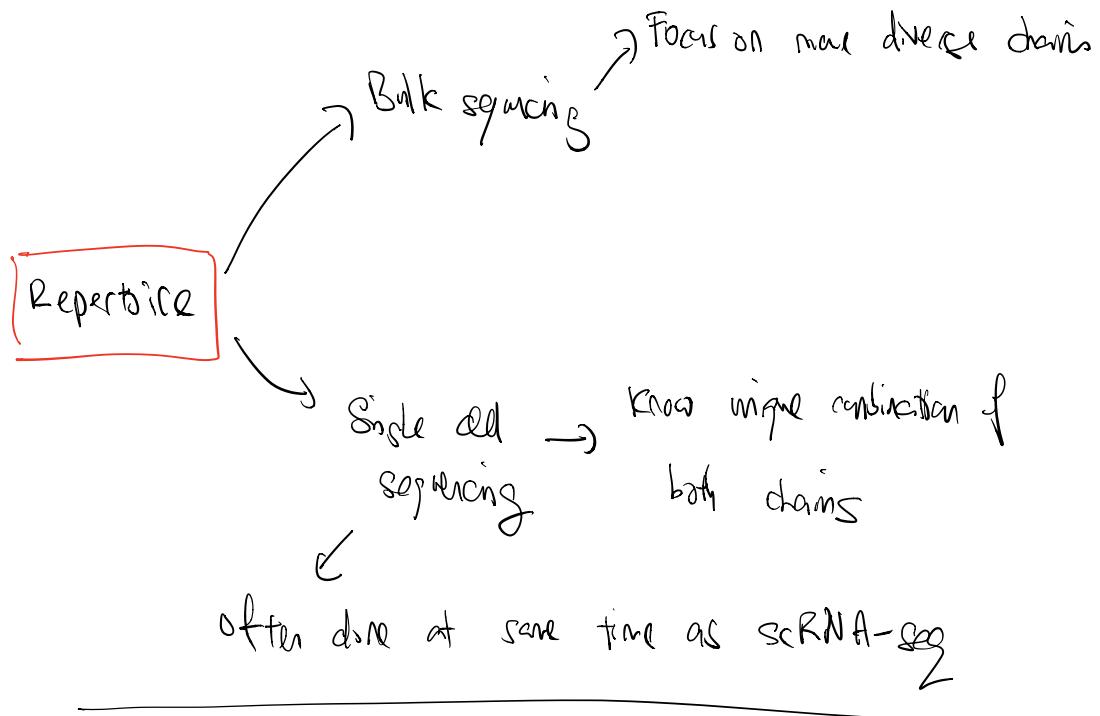
Functional Assay

ELISpot Procedure



- ① Stimulate with tumor antigen.
- ② Highly sensitive ~ 1 in 10^6 antigen-specific cells

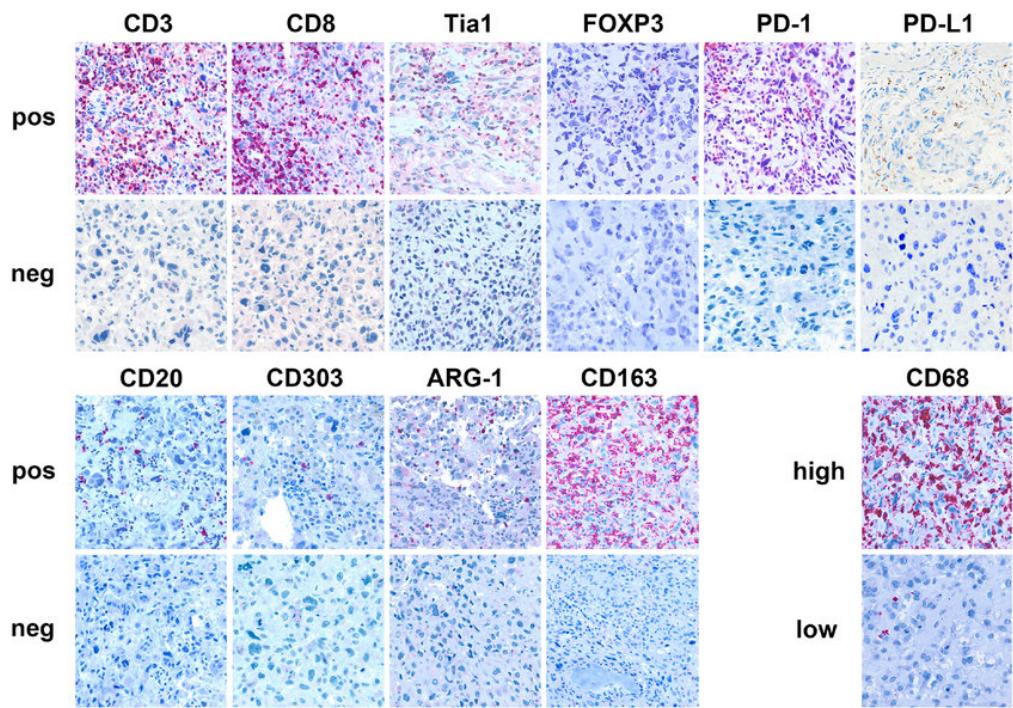




Distribution of clones and their activation/function/
status

Warning: Expanded clones in tumor are not necessarily tumor-specific
Can result from bystander activation

Spatial



TCR Repertoire - Intratumor heterogeneity

