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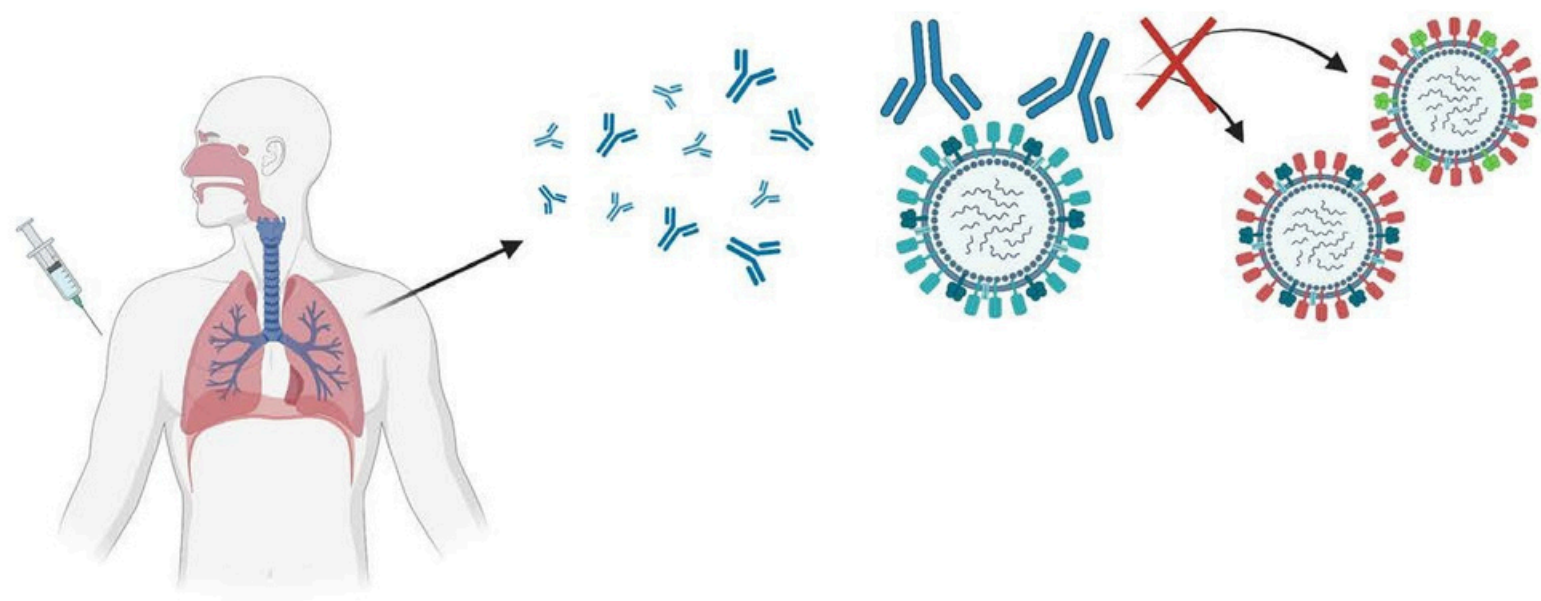


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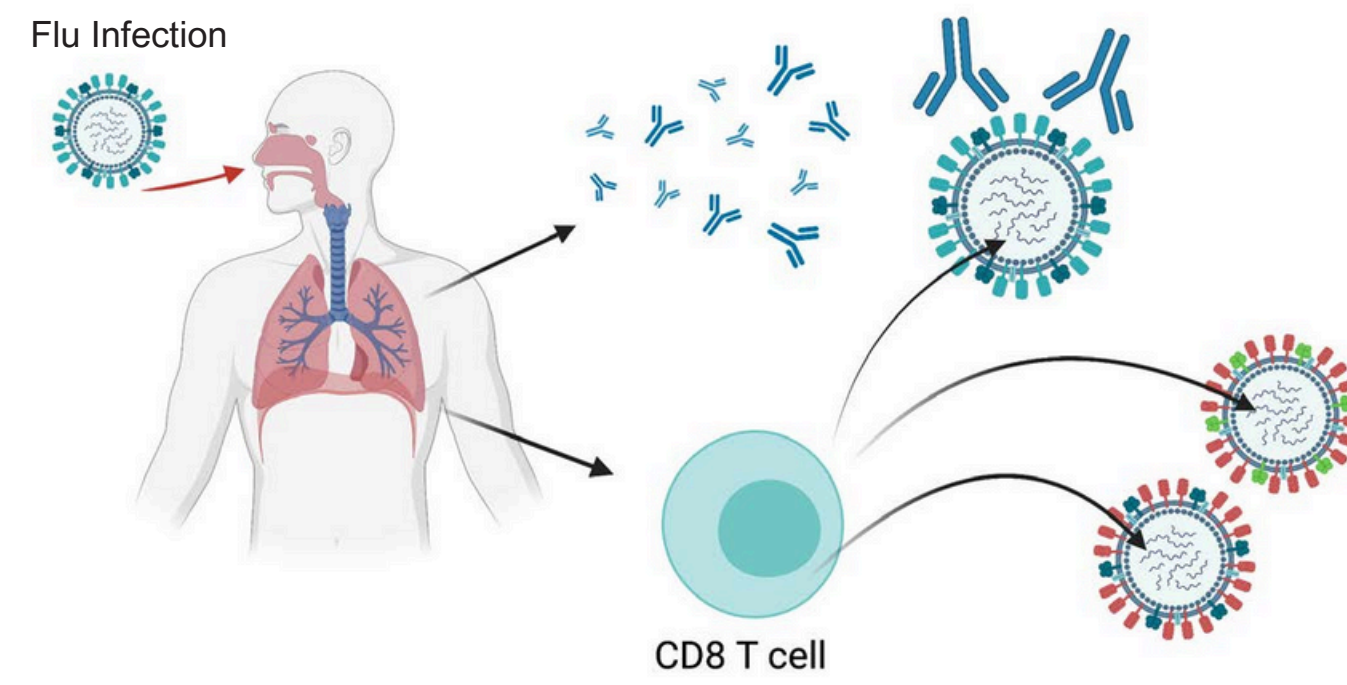
Duration and Function of Lung Tissue Resident CD8⁺ Memory T Cells

Examine the role that lung T_{RM} play in the immune response to respiratory viruses in order to harness their potential for a vaccine that has increased efficacy and broader protection.

Immune response in current flu vaccines primarily produce antibodies

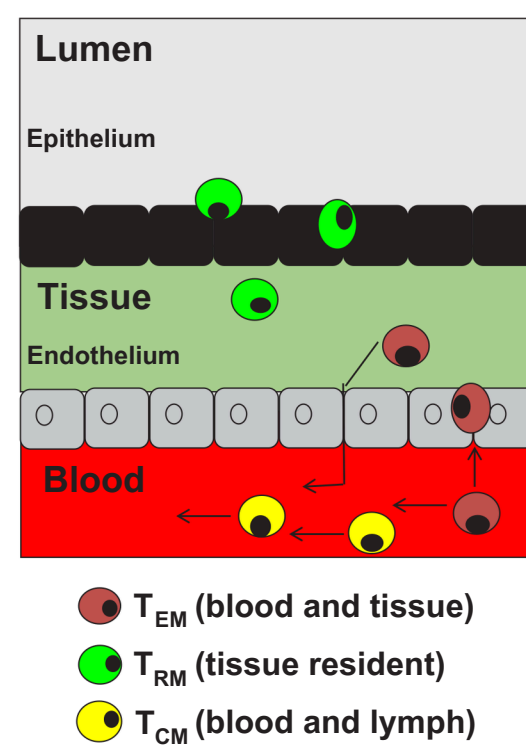


CD8⁺T cells provide protection against different strains of influenza



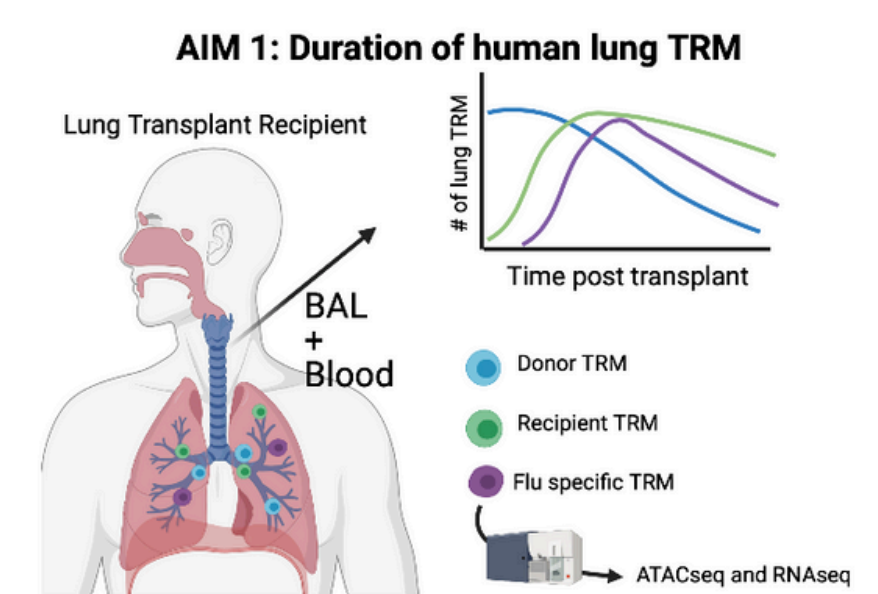
Tissue-resident memory T cells (T_{RM}) provide an initial line of defense

- Form at common sites of pathogen entry
- Mediate protection via cytokines, chemokines, direct lysis
- Canonical markers CD69, CD103
- TRMin gut, skin, genital tract remain relatively stable over time, but TRMin respiratory tract decline overtime

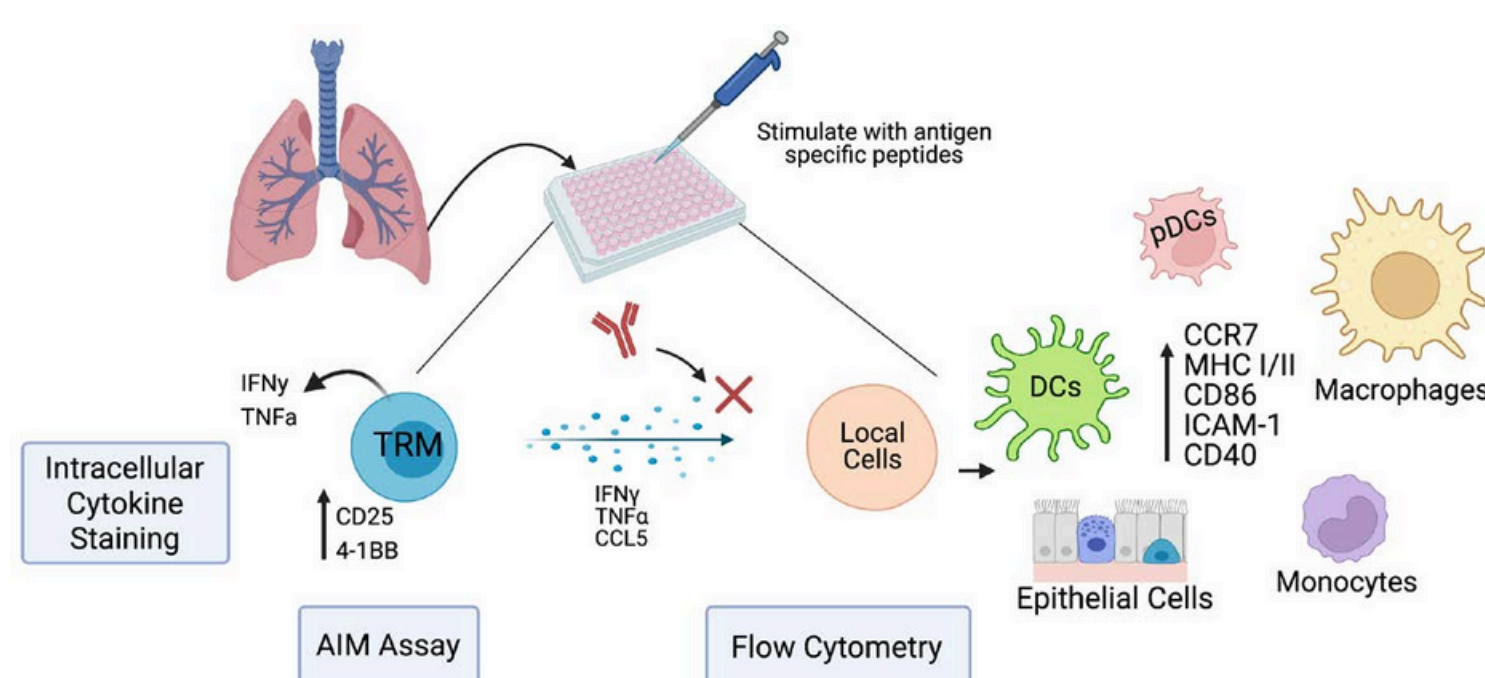


Aim 1: Examine the duration of human lung CD8⁺ TRM

- Track duration of donor CD8⁺ TRM in lungs
- Track generation and duration of recipient CD8⁺ TRMin lungs after influenza infection
- Understand the transcriptional and epigenetic profile of human lung CD8⁺TRM



Aim 2: Examine the function of human lung CD8⁺ TRM



IFN γ is made by CD8⁺lung TRM of diverse antigen specificity

