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Klamon Impact Award

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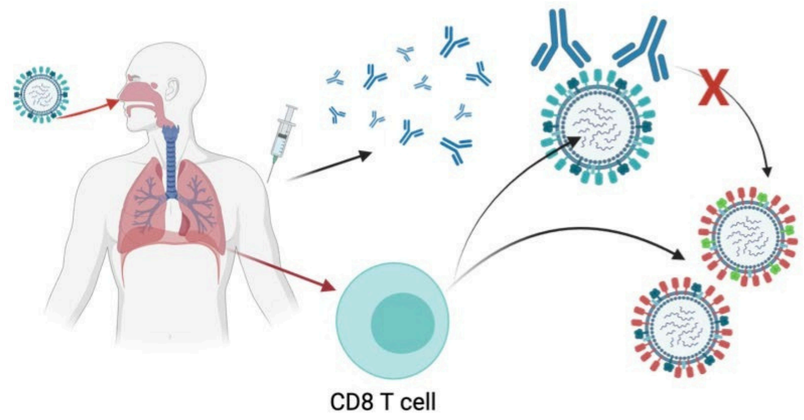
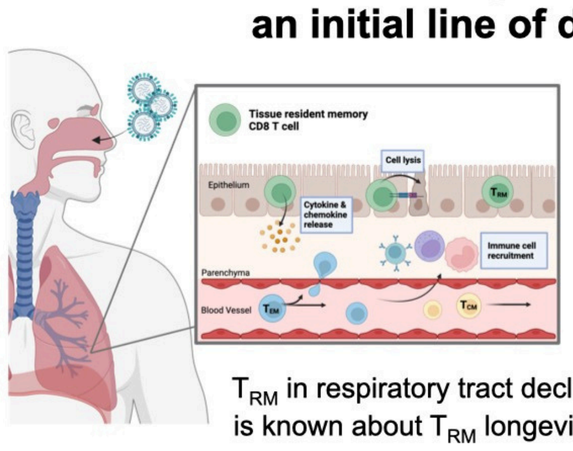
Duration and function of lung tissue resident CD8+ memory T cells

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.

CD8+ T cells provide protection against different strains of influenza



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



- Found at barrier sites such as lung, gut, skin, genital tract
- Mediate protection via cytokines, chemokines, direct lysis

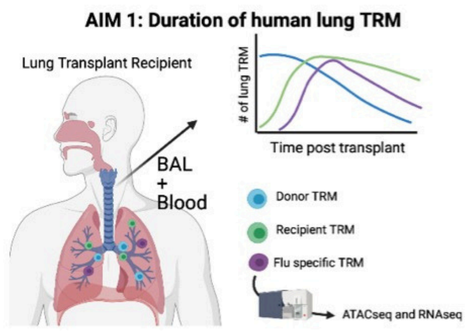
T_{RM} in respiratory tract decline overtime in mice, but little is known about T_{RM} longevity or function in human lungs

Aim 1: Examine the duration of human lung CD8+ T_{RM}

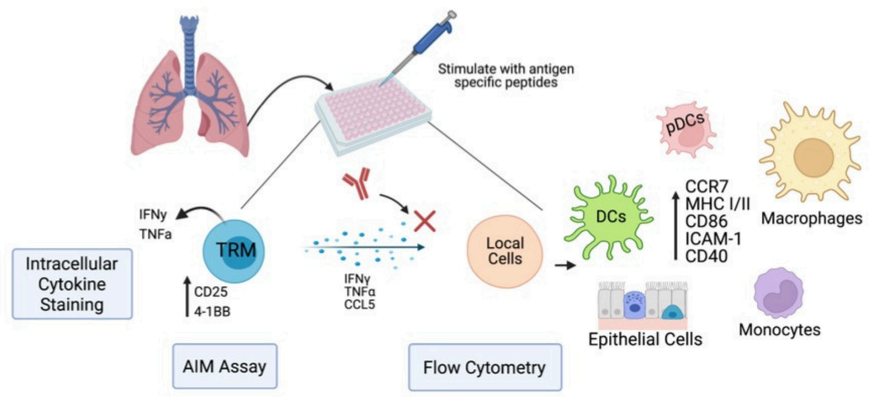
a) Track duration of donor CD8+ T_{RM} in lungs

b) Track generation and duration of recipient CD8 T_{RM} in lungs after influenza infection

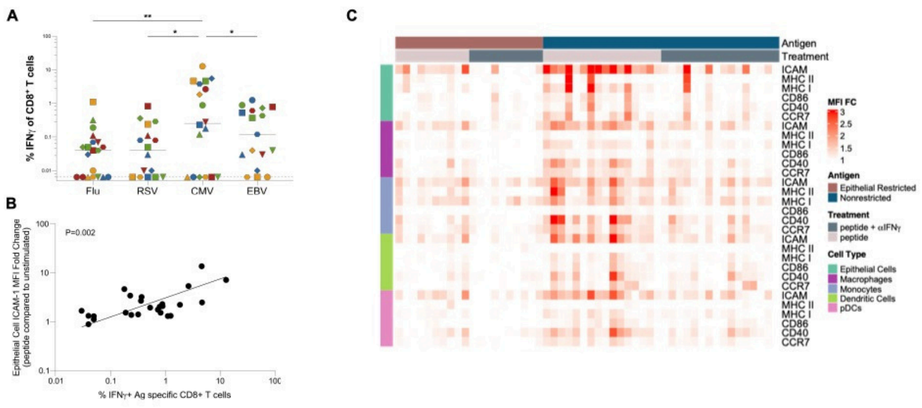
c) Understand the transcriptional and epigenetic profile of human lung CD8+ T_{RM}



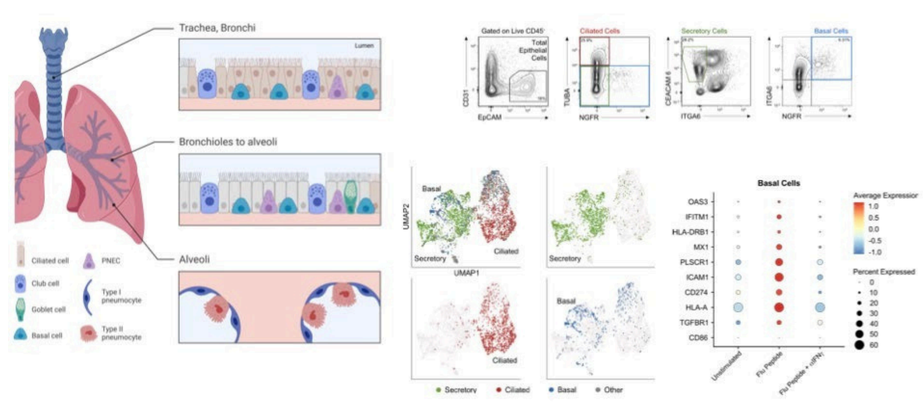
Aim 2: Examine the function of human lung CD8+ T_{RM}



CD8+ derived IFNγ is capable of widespread activation of innate cells in the lung



Basal cells exhibit an activated transcriptional profile in response to Flu specific CD8+ T cell derived IFNγ



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Scholar Awards Celebration
November 15, 2023

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