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Type 2 inflammation accelerates CD4$^+$ T-cell senescence in asthma

Key words: Asthma; Cellular senescence; T cells; Inflammation

Research Summary

This research mainly focused on asthma and $CD4^+$ T-cell senescence, and investigated the key roles of type 2 inflammation in accelerating $CD4^+$ T-cell senescence.

- **$CD4^+$ T-cell senescence is increased** in asthma patients (not $CD8^+$)
- $CD4^+$ Tsens correlate with **FeNO, eosinophils, and Th2**
- **Elevated $CD4^+$ Tsens also observed in an HDM-induced asthma mouse model**
- **IL-4 neutralization reduces $CD4^+$ Tsens and blocks p38 MAPK activation**
- Adoptive transfer of senescent $CD4^+$ T cells **worsens type 2 inflammation** in asthma.

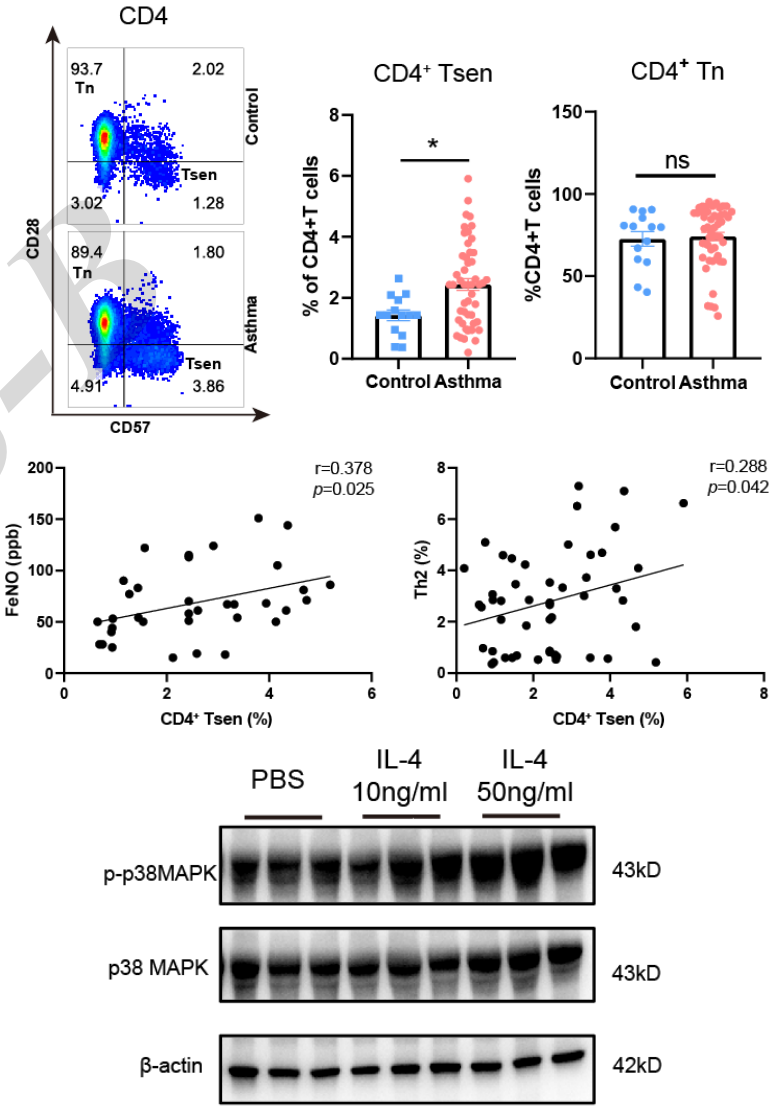
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Innovation / Significance

- **Establish** a direct link between type 2 inflammation and CD4⁺ T-cell senescence

- **Identify** the IL-4 / p38 MAPK pathway as a driver of T-cell senescence

- **Suggest** CD4⁺ Tsens as a potential biomarker and therapeutic target in asthma.



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