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Proapoptotic protein Bim regulates the suppressive function of Treg cells

Key words: Regulatory T cells, Bim, Tumor immune therapy, Senescence of immune system

Research Summary

This research focus on the regulation of Treg cells, which is an immunosuppressive subpopulation of $CD4^+$-T lymphocytes.

Innovation points

- Researched the function of Bim in Treg cells using *Foxp3*^{Cre};*Bim*$^{fl/fl}$ conditional knockout mice and systematically investigated the underlying mechanism by performing a transcriptional analysis.
- Found that the deletion of *Bim* in Treg cells slows tumor growth and prolongs survival in mice, which suggests that the inhibition of Bim in Treg cells is a new potential strategy for tumor immunotherapy.
- Investigated the relationship between Bim-downregulation and Treg cell aging and found that the deletion of Bim in Treg cells does not recapitulate the transcriptional characteristics of the Treg cells of aged mice, which suggests that Bim-downregulation is a downstream event in Treg cell aging.

Innovation points

The transcriptional data of aged Treg cells generated by this work are also valuable for further research related to senescence of Treg cells.