Feeding an army: understanding how nutrient conditions affect T cells

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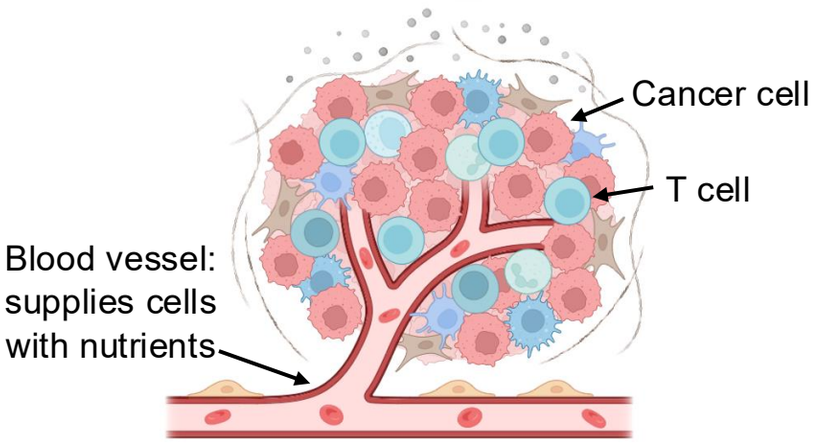
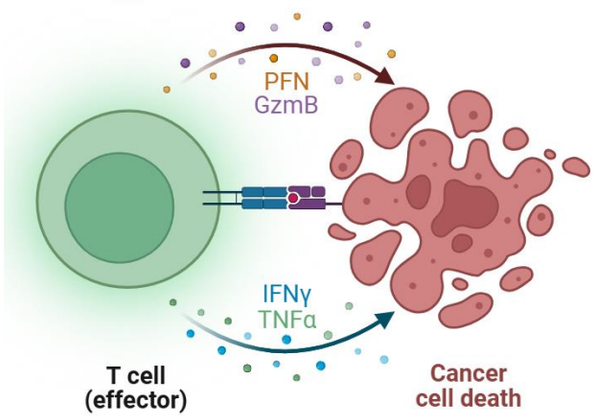
BACKGROUND

Tumours are very 'hungry' cells: they consume lots of nutrients and produce waste by-products



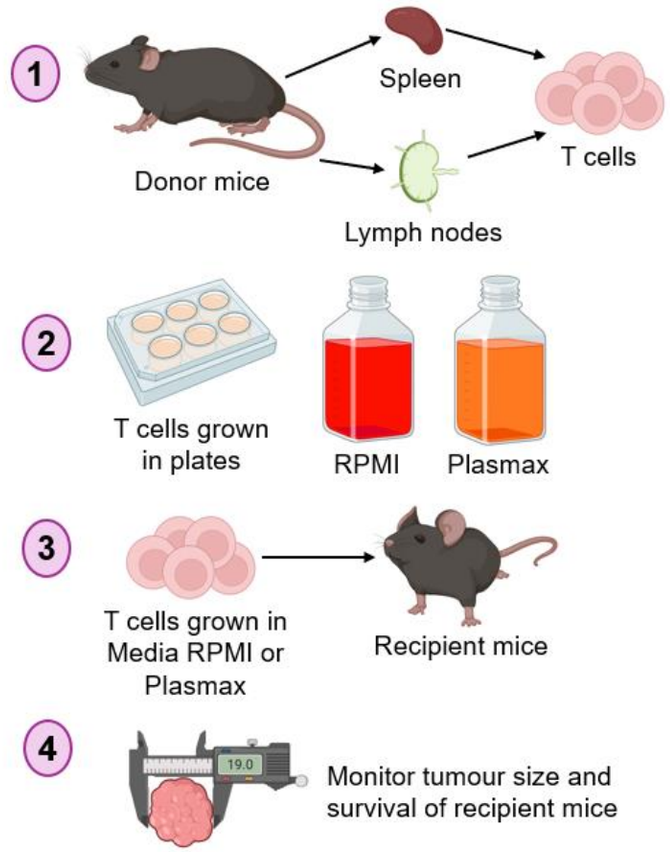
External signals, such as nutrient availability, can affect the ability of T cells to kill tumours



AIM & HYPOTHESIS

- **Aim:** Can we improve the ability of T cells to eliminate tumours by modifying the nutrient environment they are exposed to?
- **Hypothesis**: Exposing T cells to nutrient conditions more similar to physiological conditions will improve their ability to kill tumours.

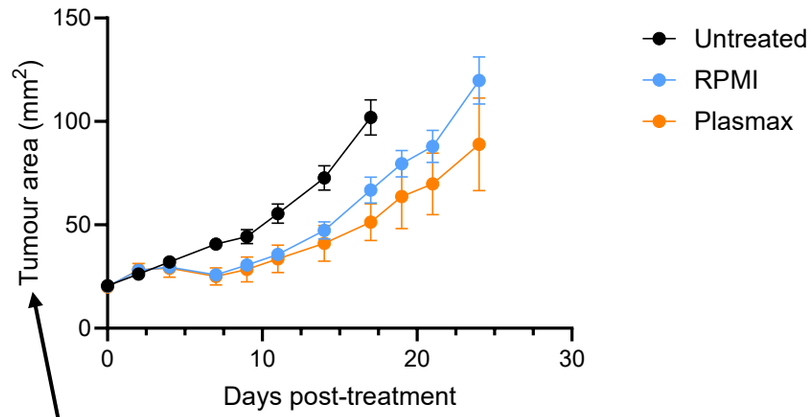
METHODS



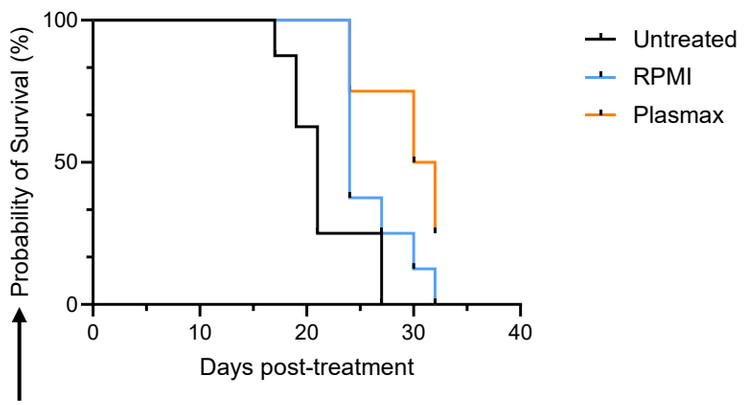
RESULTS

We used a breast cancer model. s.c. stands for **subcutaneous** and indicates that the tumour cells were injected under the skin.

AT3-OVA s.c.



The tumour area is obtained by multiplying the length by the width of tumour.



This indicates the % of mice in each group that remain alive at any point in time during the experiment.

KEY TAKEAWAYS

- T cells grown in **Plasmax**, which mimics the nutrient conditions in healthy human plasma, show a moderate improvement in their ability to eliminate tumours in mice. **What specific nutrients are driving this effect?**