Oxygen as an immune checkpoint for CD8+ T-cell activity

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CD8+ T-cells can destroy cancer cells

T-cells experience a variety of oxygen concentrations

Oxygen suppresses effector differentiation

**HIF1α, but not HIF2α, plays a role in hypoxic T-cell differentiation**

**Oxygen as a checkpoint?**

**Hypothesis:** over-expression of HIFs in CD8+ T-cells increases anti-tumor function.

**Vectors for HIF over-expression in CD8+ T-cells**

**Probing the role of each HIF isoform and their regulation by FIH and VHL**

**HIF2α over-expression drives effector differentiation...**

**...and enhances anti-tumor function**

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**Response to low oxygen is driven by Hypoxia-inducible Factors (HIFs)**

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