

# Metabolic Reprogramming and Intervention During T Cell Exhaustion

Fei Li<sup>1</sup>, Huiling Liu<sup>2</sup>, Dan Zhang<sup>1</sup>, and Bingdong Zhu<sup>1</sup>

<sup>1</sup>Lanzhou University

<sup>2</sup>Gansu Provincial Hospital

September 24, 2021

## Abstract

Recent studies have shown that T cell metabolism has become a key regulator of T cell function and even can determine T cell function at last. Naïve T cells use fatty acid oxidation (FAO) to meet their energetic demands. Effector T cells mainly rely on aerobic glycolysis to supply energy and synthesize intermediate products. Similar to naïve T cells, memory T cells primarily utilize FAO for energy. Exhausted T cells, which can be induced by continuous activation of T cells upon persistently chronic infections such as tuberculosis, mainly rely on glycolysis for energy. The prevention and treatment of T cell exhaustion is facing great challenges. Interfering T cell metabolism may achieve the goal of prevention and treatment of T cell exhaustion. In this review, we compiled the researches related to exhausted T cell metabolism and put forward the metabolic intervention strategies to reverse T cell exhaustion at different stages to achieve the purpose of preventing and treating T cell exhaustion.

## Hosted file

manuscript 8.12.doc available at <https://authorea.com/users/435730/articles/538549-metabolic-reprogramming-and-intervention-during-t-cell-exhaustion>