

Decoding the role of immune T cells: A new territory for improvement of metabolic-associated fatty liver disease

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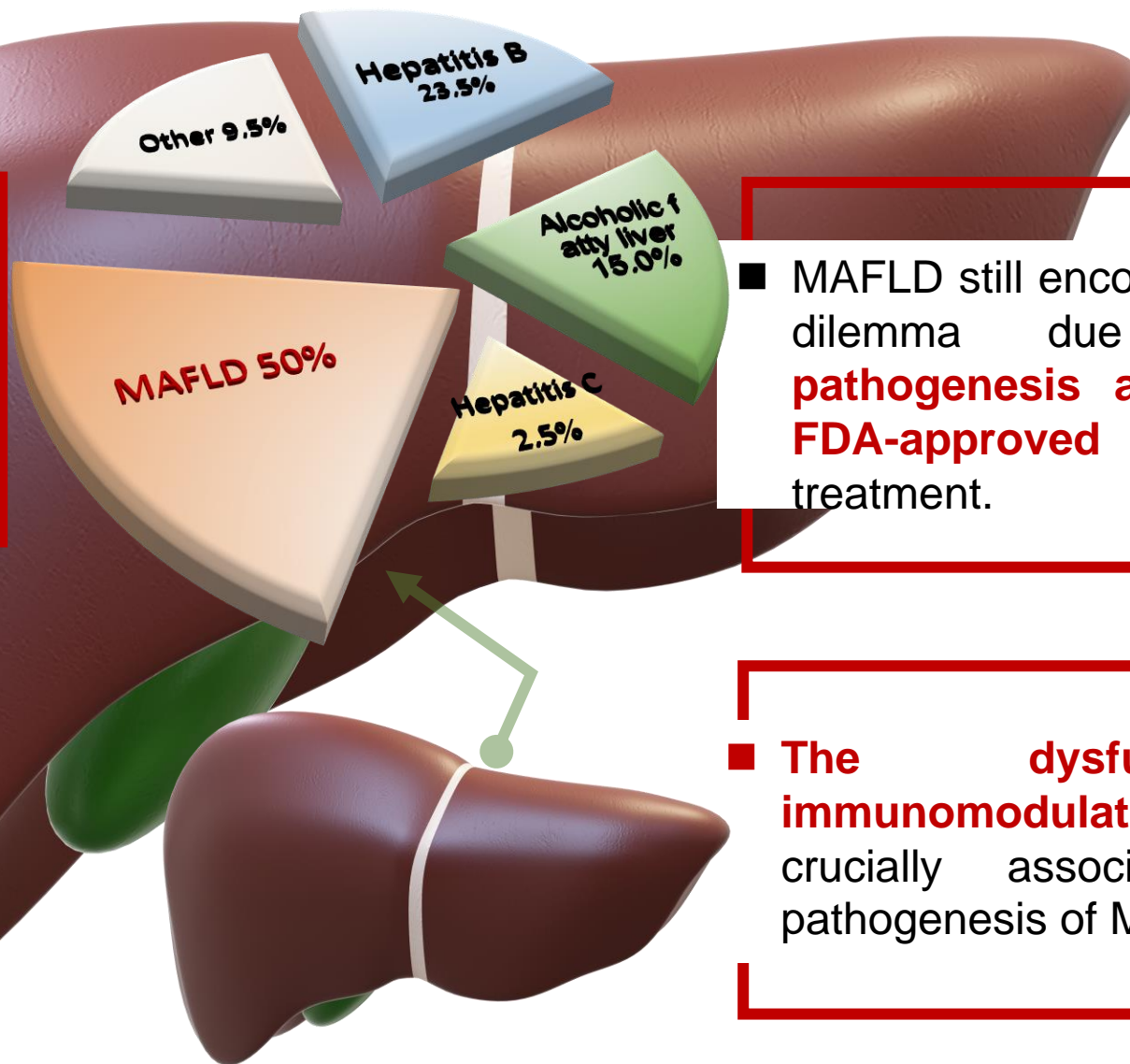
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Introduction



■ **Metabolic-associated fatty liver disease (MAFLD)** is a new emerging concept and associated with **metabolic dysfunction**.

■ MAFLD still encounters the current dilemma due to **unclear pathogenesis and the lack of FDA-approved drugs** in clinical treatment.

■ The number of **MAFLD** may **expand to 100.9 million cases in 2030**, affecting a quarter of the global population.

■ The **dysfunction of immunomodulatory T cells** is crucially associated with the pathogenesis of MAFLD.



T cell-specific immune responses

- Include innate immunity and adaptive immunity
- Introduce the diverse classification and pathophysiological effects of immune T cells
- Try to understand the intricacies of T cells involved in MAFLD progression

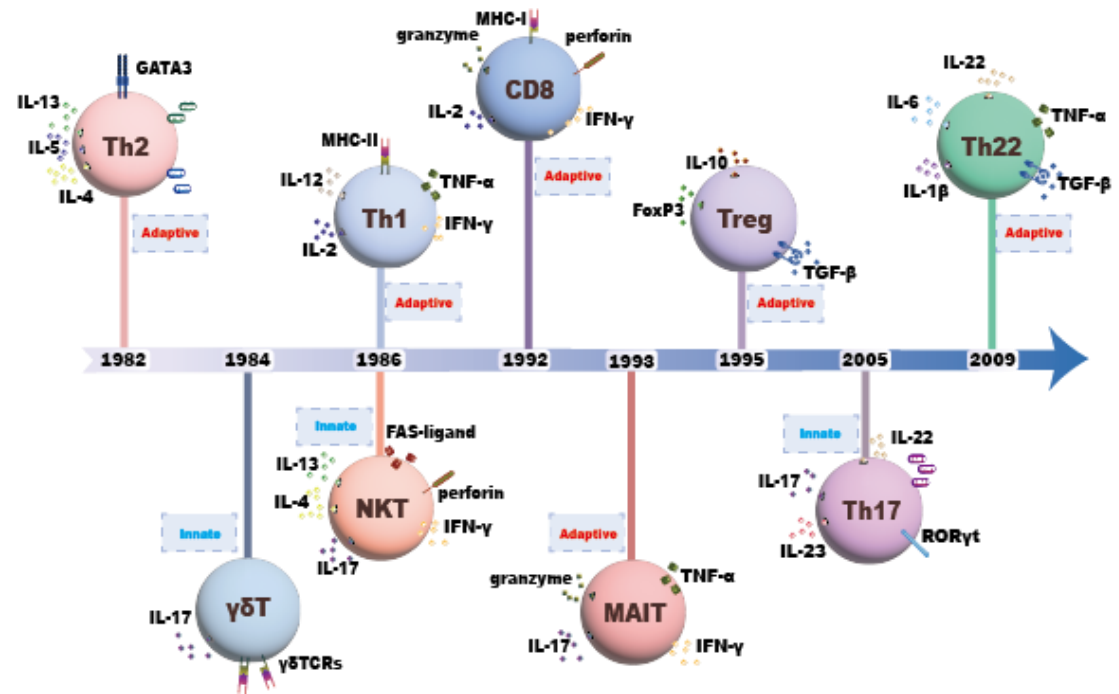
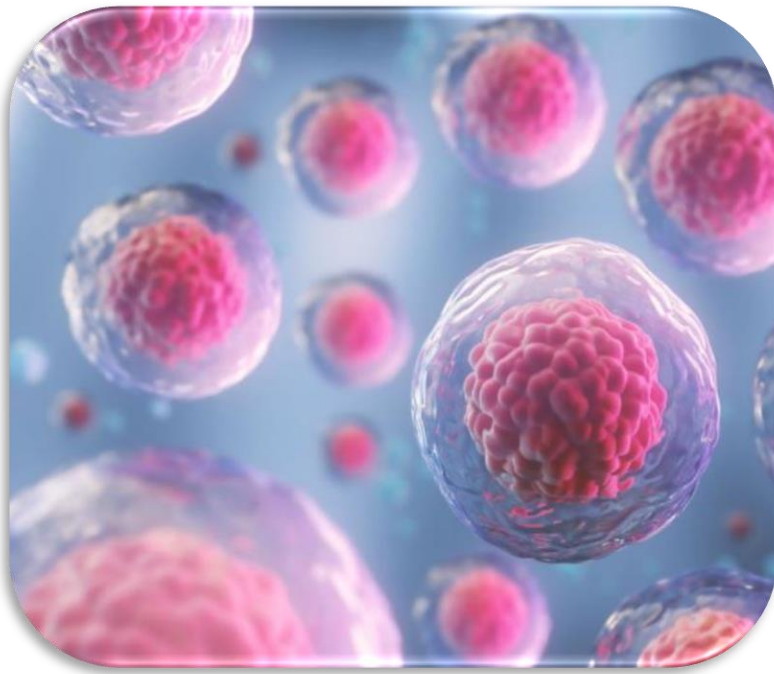


Figure 2. Physiological characteristics and function of different T cells and timeline of T cell development.



How T cells participate in MAFLD progression

01

Inflammatory cytokines- and chemokines-related signaling pathways



02

The destruction of immune homeostasis



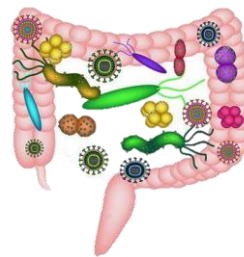
03

Metabolic disorders caused by knockouts of T cell-associated genes

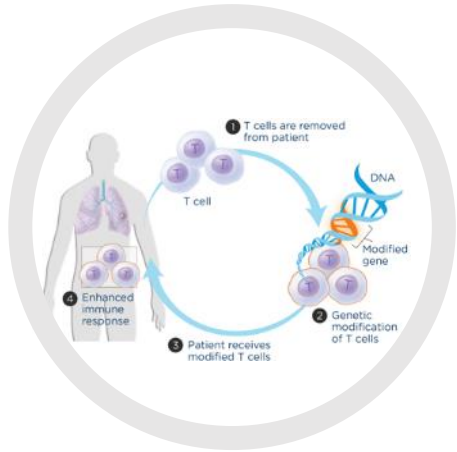


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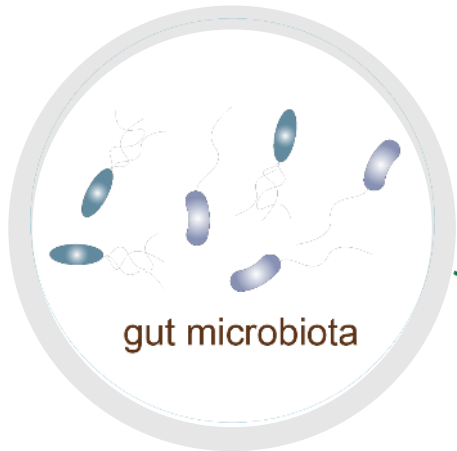
The intestinal dysbacteriosis



T cells-related therapeutic options for MAFLD



Adoptive transfer of T cells



healthy intestinal bacteria
Fecal microbiota transplantation



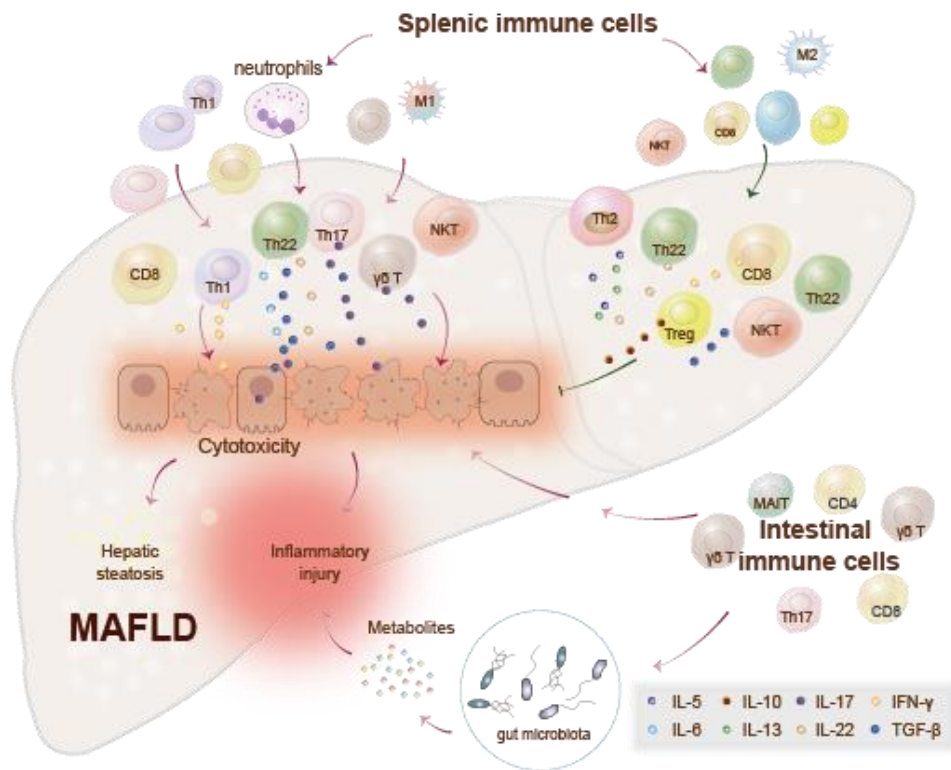
Chinese medicine
Chinese herbal prescriptions
Natural medicine



Inhibitor & neutralizer
Cytokines & chemokines



Summary



Highlights:

- Metabolic-associated fatty liver disease (MAFLD) is the most common fatty liver disease caused by metabolic dysregulation.
- The maladjustment of T cell homeostasis give rise to severe hepatic steatosis and fat accumulation.
- Intestinal flora regulation or pharmacotherapy restore the immune homeostasis of T cells to improve MAFLD.

Figure 3. Immune T cells are involved in MAFLD progression either in a positive or negative manner.

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