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**Name of Journal:** *World Journal of Gastroenterology*

**Manuscript NO:** 61811

**Manuscript Type:** REVIEW

**Incorporating mucosal-associated invariant T cells into the pathogenesis of chronic liver disease**

MAIT cells in chronic liver disease

### Abstract

Mucosal-associated invariant T cells have been described in liver and non-liver diseases, and they have been ascribed antimicrobial, immune regulatory, protective, and pathogenic roles. The goals of this review are to describe their biological properties, indicate their involvement in chronic liver disease, and encourage investigations that clarify their actions and therapeutic implications. English abstracts were identified in PubMed by multiple search terms, and bibliographies were developed. Mucosal-associated invariant T cells are activated by restricted non-peptides of limited diversity





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## Activation of mucosal-associated invariant T cells in the ...

<https://www.nature.com/articles/s41598-019-49903-6>

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Author: Hisayo Matsuyama, Takuma Isshiki, Taku...

Publish Year: 2019

## Circulating mucosal-associated invariant T cells in ...

<https://onlinelibrary.wiley.com/doi/full/10.1002/iid3.287>

When these bacteria traverse the urethra, they are challenged by innate defense mechanisms within the bladder. 8 Mucosal-associated invariant T (MAIT) cells are innate-like T cells that play a role in the antibacterial and antifungal response by recognizing riboflavin metabolites produced by these organisms. 9 MAIT cells comprise 0.1% to 10% of the circulating T-cell population, 10 are abundant in the liver, ...

Cited by: 2

Author: Matty L. Terpstra, Ester B. M. Remmers...

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## Intra-hepatic Depletion of Mucosal Associated Invariant T ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5669813>

Chronic hepatitis affects phenotypes of innate and adaptive immune cells. Mucosal associated invariant T (MAIT) cells are enriched in the liver as compared to the blood, respond to intra-hepatic cytokines, and (via the semi-invariant T-cell receptor) to bacteria translocated from the gut.

Cited by: 68

Author: Fabian J. Bolte, Ashley C. O'Keefe, Laur...

Publish Year: 2017

## Frontiers | Mucosal-Associated Invariant T Cells Improve ...

<https://www.frontiersin.org/articles/10.3389/fimmu.2018.01994> ▾

Mucosal-associated invariant T (MAIT) cells, a novel population of innate-like lymphocytes, have been involved in various inflammatory and autoimmune diseases. However, their role in the development of nonalcoholic fatty liver disease (NAFLD) remains unclear.

Cited by: 15

Author: Yanmei Li, Bingyuan Huang, Xiang Jiang, ...

Publish Year: 2018

## Mucosal-Associated Invariant T cell in liver diseases





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Sep 12, 2019 · **Mucosal-associated invariant T** (MAIT) cells are innate T cells that recognize bacterial riboflavin and rapidly produce cytokines such as interferon  $\gamma$  and tumor necrosis factor  $\alpha$ .

**Cited by:** 5

**Author:** Hisayo Matsuyama, Takuma Isshiki, Takum...

**Publish Year:** 2019

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## Mucosal-associated invariant T cells and disease | Nature ...

<https://www.nature.com/articles/s41577-019-0191-y>

Jul 15, 2019 · Mucosal-associated **invariant T cells** display innate, effector-like qualities and are involved, in various ways, in infectious and non-infectious diseases. Insights **into** their activation, tissue ...

**Cited by:** 91

**Author:** Amine Toubal, Amine Toubal, Isabelle Nel, I...

**Publish Year:** 2019

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**Cited by:** 80

**Author:** Fabian J. Bolte, Ashley C. O'Keefe, Lauren ...

**Publish Year:** 2017

## Mucosal-associated invariant T cells in Giant Cell ...

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May 14, 2021 · May 14, 2021 · CXCL12/CXCR4-Mediated Chemotaxis Supports Accumulation of Mucosal



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Cited by: 93

Author: Amine Toubal, Amine Toubal, Isabelle Nel, I...

Publish Year: 2019

[Mucosal-associated invariant T cells promote inflammation ...](#)

<https://onlinelibrary.wiley.com/doi/full/10.1002/art.33314>

## Mucosal associated invariant T cell

Mucosal associated invariant T cells make up a subset of T cells in the immune system that display innate, effector-like qualities. In humans, MAIT cells are found in the blood, liver, lungs, and mucosa, defending against microbial activity and infection. The MHC class I-like protein, MR1, is responsible for presenting bacterially-produced vitamin B metabolites to MAIT cells. After the presentation of foreign antigen by MR1, MAIT cells secrete pro-inflammatory cytokines and are capable of lysing bacterially-infected cells. MAIT cells can also be activated through MR1-independent signaling. In addition to possessing innate-like functions, this T cell subset supports the adaptive immune response and has a memory-like phenotype. Furthermore, MAIT cells are thought to play a role in autoimmune diseases, such as multiple sclerosis, arthritis and inflammatory bowel disease, although definitive evidence is yet to be published.

 Wikipedia

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