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**Role of gut microbiota via the gut-liver-brain axis in digestive diseases**

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**Abstract**

The gut-brain axis is a bidirectional information interaction system between the central nervous system (CNS) and the gastrointestinal tract, in which gut microbiota plays a key role. The gut microbiota forms a complex network with the enteric nervous system, the sympathetic and parasympathetic of the autonomic nervous system, and the neuroendocrine and neuroimmunity of the CNS, which is called the microbiota-gut-brain axis. Due to the close anatomical and functional interaction of the gut-liver axis, the microbiota-gut-liver-brain axis attracts increased attention in recent years. The microbiota-gut-liver-brain axis regulates the occurrence and development of many

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A series of provocative preclinical studies have suggested a prominent role for the gut microbiota in these gut-brain interactions. Based on studies using rodents raised in a germ-free environment, the gut microbiota appears to **influence the development of emotional behavior, stress- and pain-modulation systems, and brain neurotransmitter systems.**

**Author:** Emeran A. Mayer, Kirsten Tillisch, Arpana Gupta

**Cited by:** 711

**Publish Year:** 2015

[Gut/brain axis and the microbiota](#)

[www.ncbi.nlm.nih.gov/pmc/articles/PMC4362231/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4362231/)

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Jun 01, 2012 · In summary, the **gut microbiota**, by regulating metabolic, trophic, immune and barrier **function**, protects the host against **digestive** and extra-**digestive diseases**. **Gut–liver axis** The occurrence of a cross-talk between the **gut** and the liver is an intriguing hypothesis that could account for the hepatobiliary alterations observed in several ...

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**Publish Year:** 2012

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**Author:** Lijun Wang, Lijun Wang, Yu-Jui Yvonne ...

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