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A microbiota bacterium protects the large intestine from inflammation

The microbiota, which is the term used to describe all micro-organisms living in the mucous membranes, is vital for our health and affects our development, metabolism, immune system etc. However, most of the mechanisms which allow it to play this important role have yet to be discovered. Researchers in Inserm Unit 892 "Nantes-Angers regional cancer research centre" have recently identified one of the mechanisms by which the microbiota enables our immune system to prevent inflammation of the large intestine. Their findings will be published on the [Plos Biology](#) website on 9 April.

The researchers identified a population of regulatory T cells hitherto undiscovered in humans - named DP8a - and demonstrated that an intestinal microbiota bacterium known as *Faecalibacterium prausnitzii* prompts their development.

Previous studies have revealed that this bacterium occurs in unusually low numbers in the faecal flora of patients suffering from inflammatory diseases of the digestive tract.

The researchers demonstrated in this study that the prevalence of DP8a lymphocytes specific to this bacterium is also lower in these patients, both in the mucous colic and the blood.

"The results show that this population of lymphocytes plays an important role in protecting the large intestine from inflammation. We have identified for the first time a mechanism in humans by which a microbiota bacterium contributes to the equilibrium of the mucous membrane it inhabits" explains Francine Jotereau, emeritus professor in the Inserm unit and co-author of this work.

These findings pave the way for developing markers and innovative therapies for preventing and treating inflammatory diseases of the digestive tract by restoring the anti-inflammatory activity of DP8a Treg cells in patients.

"These findings will also allow us not only to research the role of these regulatory T cells in controlling other conditions such as allergies or chronic infectious diseases but also to better understand the impact of the microbiota on the immune system" concludes Francine Jotereau.

Sources

CD4CD8 α lymphocytes, a Novel Human Regulatory T cell Subset induced by Colonic Bacteria and deficient in Inflammatory Bowel Disease patients

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