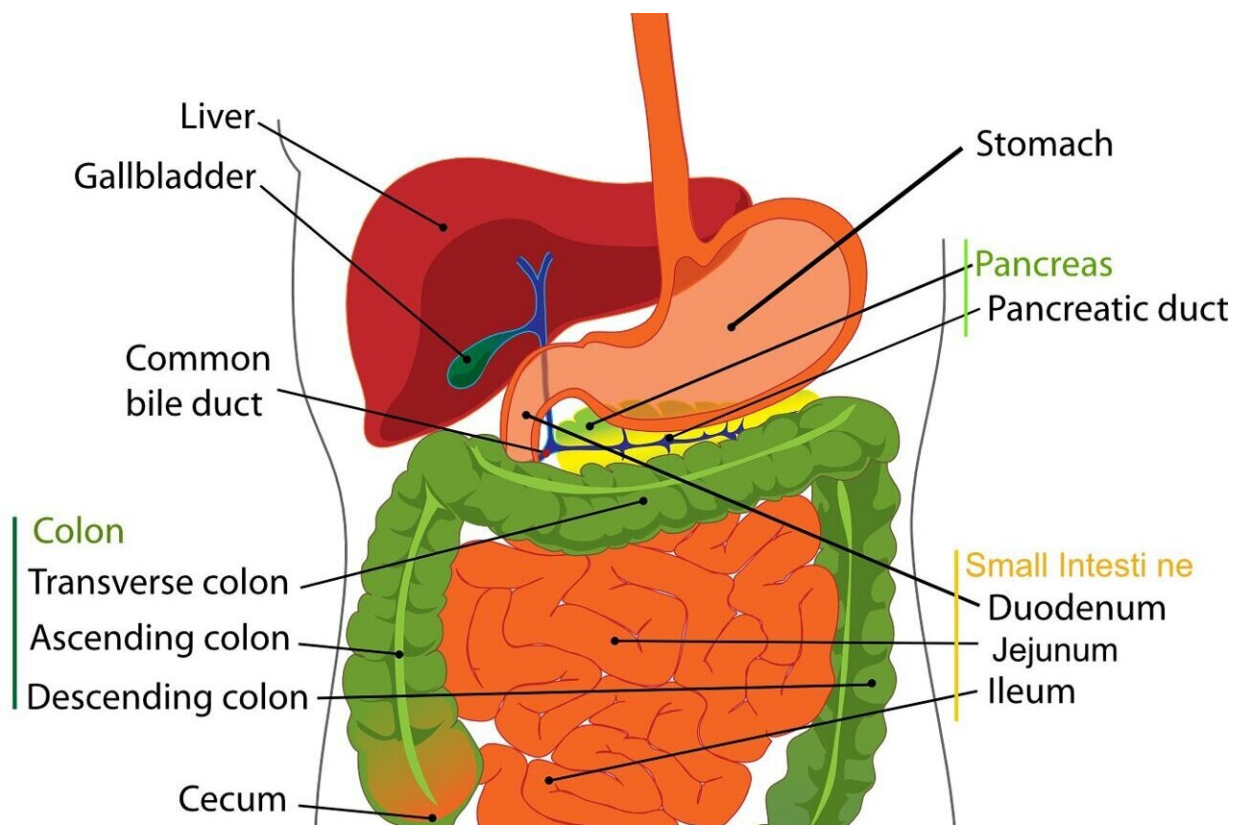


Immune cells in the human biliary system mapped

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Researchers at Karolinska Institutet in Sweden have analyzed and described in detail the immune cells residing in the human bile duct. The findings may pave the way for new treatment strategies against disorders

of the bile duct, which are often linked to immunological processes. The study is published in the journal *Science Translational Medicine*.

Over the last decade, our understanding of the composition of [immune cells](#) across most tissues has increased immensely. However, the human biliary tract has remained one of few unexplored immunological niches because of difficulties in accessing this site. The biliary system, which includes the [bile duct](#) connecting the liver with the intestine, is an organ often affected by serious inflammatory and malignant diseases.

"Difficulties in studying this organ has hampered our understanding of biliary diseases, many of which are severe with dismal prognosis," says Niklas Björkström, physician and immunology researcher at the Center for Infectious Medicine, the Department of Medicine, Huddinge, Karolinska Institutet, who led the study.

To overcome this, the researchers at Karolinska Institutet, in close collaboration with clinical scientists at the Karolinska University Hospital, employed a novel clinical examination method for retrieving and studying [immune cells](#) localized in the biliary system. With this method, they managed to retrieve immune cells from the bile duct of 125 patients and in detail characterize each of these immune cells.

The researchers compared immune cells from patients with primary sclerosing cholangitis (PSC), a severe inflammatory disease of the biliary system, with immune cells from non-inflammatory controls. PSC patients had a high infiltration of immune cells called neutrophils and T cells in their bile ducts that seemed to cooperate in causing an inflammatory environment.

"Our study sheds new light on the immunological processes involved in PSC," says Niklas Björkström. "It also helps uncover the immunological niche of human bile ducts, which is a major step forward and will

provide an important resource for future studies of the immune response in biliary disorders."

More information: "A biliary immune landscape map of primary sclerosing cholangitis reveals a dominant network of neutrophils and tissue-resident T cells" *Science Translational Medicine* (2021).

stm.sciencemag.org/lookup/doi/.../scitranslmed.abb3107

Provided by Karolinska Institutet

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