

# PRESS INFORMATION

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## Sage and bitter apple: plant extracts as active agents for the treatment of chronic inflammatory bowel diseases

**Researchers at Fraunhofer IZI demonstrate that plant extracts taken from sage and bitter apple have the potential to be used as active agents against chronic inflammatory bowel diseases.**

In traditional medicine, sage and bitter apple have long been known as remedies for diarrhea as well as for their anti-inflammatory effect. To date, these medicinal plants have, however, played an extremely minor role in treating chronic inflammatory bowel diseases such as Crohn's disease and ulcerative colitis despite there being an urgent need for the development of effective therapeutic agents that demonstrate minimal adverse effects, as opposed to some of the preparations used at present, which are associated with significant adverse effects.

Scientists at Fraunhofer IZI (Department of Therapy Validation) have been investigating the mode of action of a plant extract based on sage flowers and bitter apple fruit in the case of chronic inflammatory bowel diseases. In doing this, they used [a specifically developed model](#), which depicts the chronic progression of bowel inflammation much better than previous models.

In evaluating their findings, the researchers determined that the plant extracts significantly reduced clinical symptoms and thus aided regeneration of the bowel tissue. It was able to be shown that pro-inflammatory immune cells (e.g. neutrophilic granulocytes) and chemical messengers (e.g. CXCL1/KC) are down-regulated in the affected tissue. Anti-inflammatory components of the immune system (e.g. interleukin 10), on the other hand, were strengthened after being treated with the plant extract. But these are just the first steps on the road to creating a new drug. The specific active agents held within the extracts now have to be identified and investigated further. The scientists published their findings in the journal Nature Scientific Reports.

### Links to the original publications:

- [A refined and translationally relevant model of chronic DSS colitis in BALB/c mice.](#)
- [Therapeutic efficacy of a combined sage and bitter apple phytopharmaceutical in chronic DSS-induced colitis.](#)

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**Editor**

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FRAUNHOFER INSTITUTE FOR CELL THERAPY AND IMMUNOLOGY IZI

## The Fraunhofer Institute for Cell Therapy and Immunology IZI

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The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 69 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of 24,500, who work with an annual research budget totaling 2.1 billion euros. Of this sum, 1.9 billion euros is generated through contract research. More than 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.

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