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The keystone bacterium *Christensenella minuta* DSM 22607 improves colitis in *in vivo* preclinical IBD models

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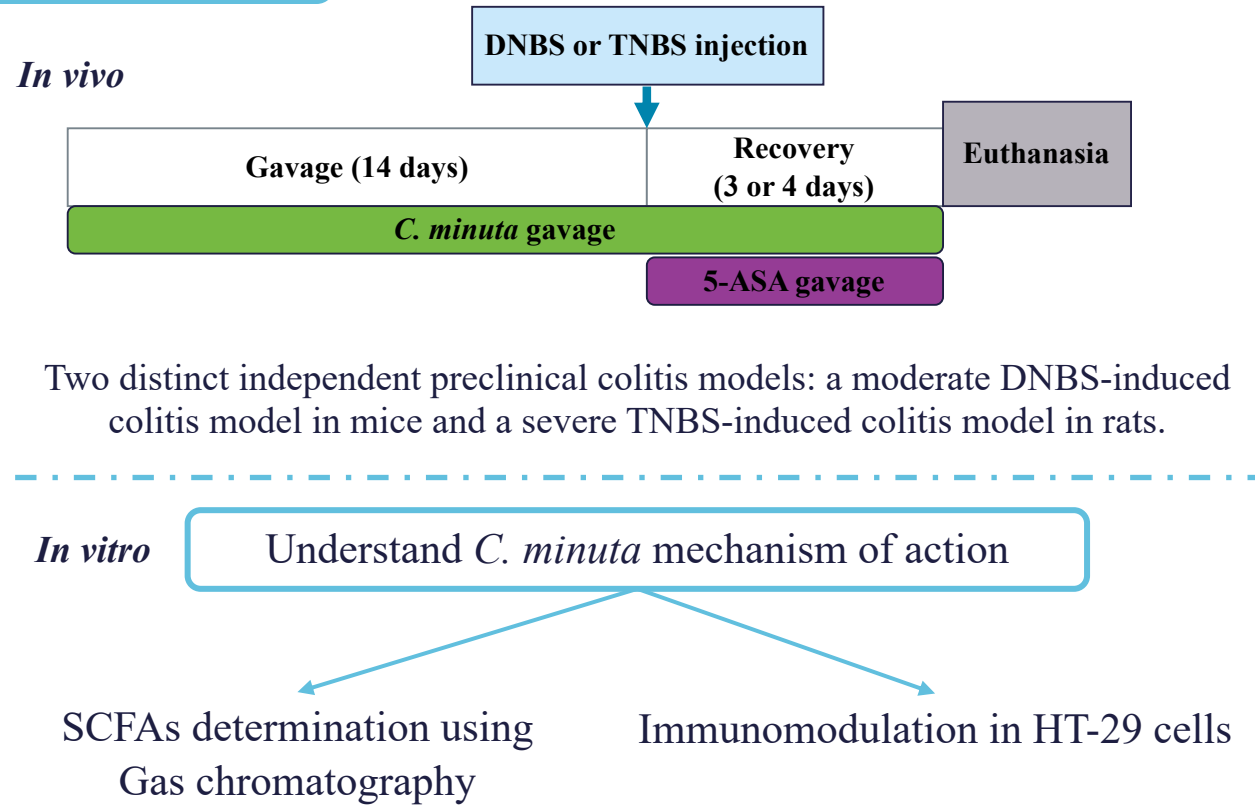
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BACKGROUND

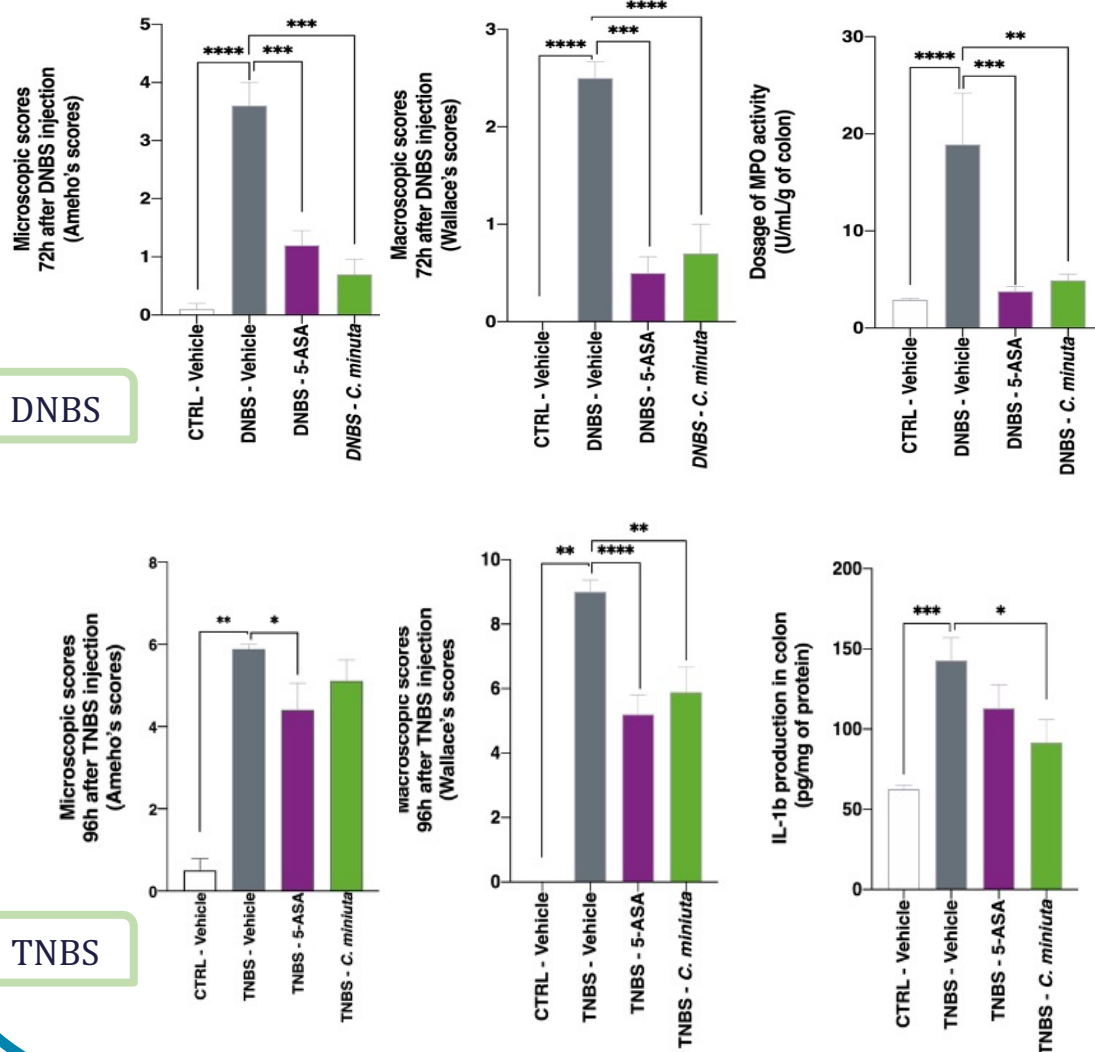
There is increasing evidence that **microbiome-based therapies** can correct dysbiosis and reduce inflammation associated with **Inflammatory Bowel Diseases (IBD)**. In particular, the human commensal family of *Christensenellaceae* bacteria has been reported as missing in several cohorts of Crohn's disease patients, indicating that it **may have a role in maintaining microbial symbiosis** in this population. To assess its potential for IBD management, we used the reference type species *Christensenella minuta* DSM 22607 to **examine its anti-inflammatory properties**.

METHODS

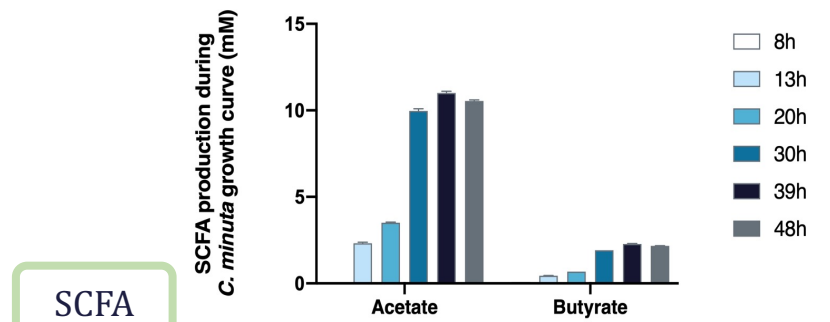


RESULTS

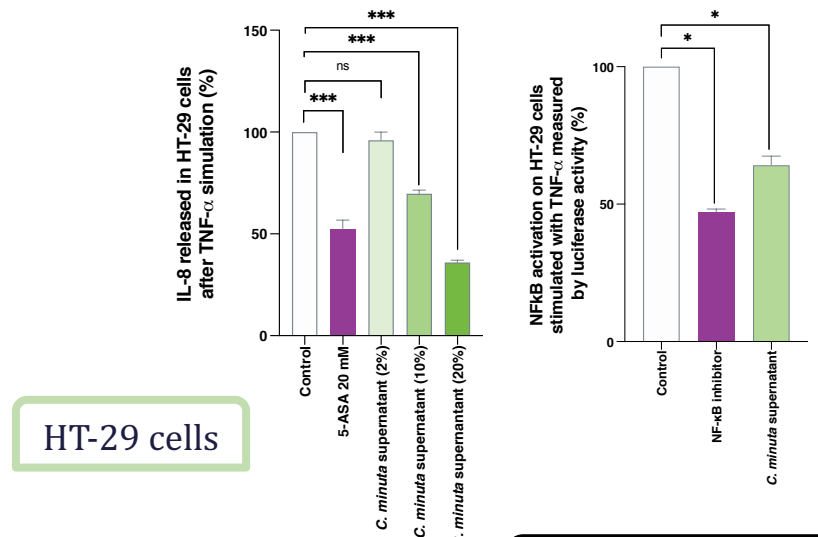
C. minuta protects against DNBS and TNBS-induced colitis in mice and rats



C. minuta is a high acetate and moderate butyrate producer



C. minuta displayed anti-inflammatory properties by decreasing the secretion of IL-8 through NF-κB inhibition



CONCLUSIONS

C. minuta displays **strong immunomodulatory properties** *in vitro* and *in vivo*. Our findings open the door to intriguing new research questions. Although **additional research** is needed to **better understand the bacterium's effects and their underlying mechanisms**, our work underscores **for the first time** that *C. minuta* **holds promise for treating IBDs** and merits further study with a view to developing **single-strain biotherapies**.

These results have been published in Scientific Reports (DOI: [10.1038/s41598-021-90885-1](https://doi.org/10.1038/s41598-021-90885-1)).