

FULL TEXT LINKS



[Oncotarget](#). 2017 Sep 6;8(49):85838-85857. doi: 10.18632/oncotarget.20689.
eCollection 2017 Oct 17.

Extracts from *Hericium erinaceus* relieve inflammatory bowel disease by regulating immunity and gut microbiota

Chen Diling¹, Yang Xin², Zheng Chaoqun¹, Yang Jian¹, Tang Xiaocui¹, Chen Jun³,
Shuai Ou^{1 4}, Xie Yizhen^{1 4}

Affiliations

PMID: 29156761 PMID: PMC5689651 DOI: [10.18632/oncotarget.20689](https://doi.org/10.18632/oncotarget.20689)

Abstract

Hericium erinaceus (HE), a traditional edible mushroom, is known as a medicine food homology to ameliorate gastrointestinal diseases. To investigate whether HE is clinically effective in alleviating inflammatory bowel disease (IBD), HE extracts (polysaccharide, alcoholic extracts and whole extracts were prepared using solvent extraction methods) were administrated for 2 weeks in rats with IBD induced by trinitro-benzene-sulfonic acid (TNBS) enema (150 mg/kg). Significant clinical and histological changes in IBD rats were identified, including damage activity, common morphous and tissue damage index scores in colonic mucosa and myeloperoxidase (MPO) activity. The damage activity, common morphous and tissue damage index scores in colonic mucosa ($P < 0.05$) were improved, MPO activities were decreased. Inflammatory factors were also differentially expressed in colonic mucosa in IBD rats, including serum cytokines, Foxp3 and interleukin (IL)-10 were increased while NF- κ B p65 and tumor necrosis factor (TNF)- α were decreased ($P < 0.05$), and T cells were activated ($P < 0.05$), especially in the alcohol extracts-treated group. We also found that the structure of gut microbiota of the *H. erinaceus* extracts-treated groups changed significantly by compared with the model group. Further studies revealed that the polysaccharides in HE extracts may play a prebiotic role, whereas the alcoholic extracts show bactericidin-like and immunomodulatory effects. Taken together, we demonstrated that *H. erinaceus* extracts could promote the growth of beneficial gut bacteria and improve the host immunity *in vivo* IBD model, which shows clinical potential in relieving IBD by regulating gut microbiota and immune system.

Keywords: *Hericium erinaceus*; anti-inflammatory; gut microbiota; immune-enhancing effect; inflammatory bowel disease.

[PubMed Disclaimer](#)

Figures

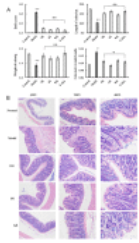


Figure 1. DAI scores and histopathological changes...

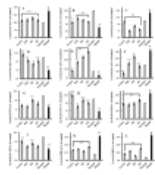


Figure 2. Effects of *H. erinaceus* extracts...

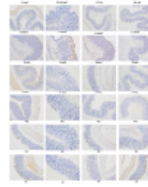


Figure 3. Immunohistochemistry staining of Foxp3, NF-

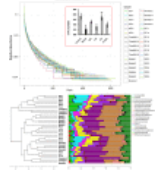


Figure 4. The Bray coefficient of cluster...



Figure 5. Tree species classification of the...

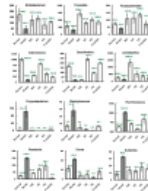


Figure 6. Tags with significant differences in...

All figures (11)

Related information

[MedGen](#)
[PMC images](#)

LinkOut - more resources

Full Text Sources

[Europe PubMed Central](#)
[Impact Journals, LLC](#)
[PubMed Central](#)

Other Literature Sources

[scite Smart Citations](#)

Research Materials

[NCI CPTC Antibody Characterization Program](#)

Miscellaneous

[NCI CPTAC Assay Portal](#)