

# RSC Sustainability

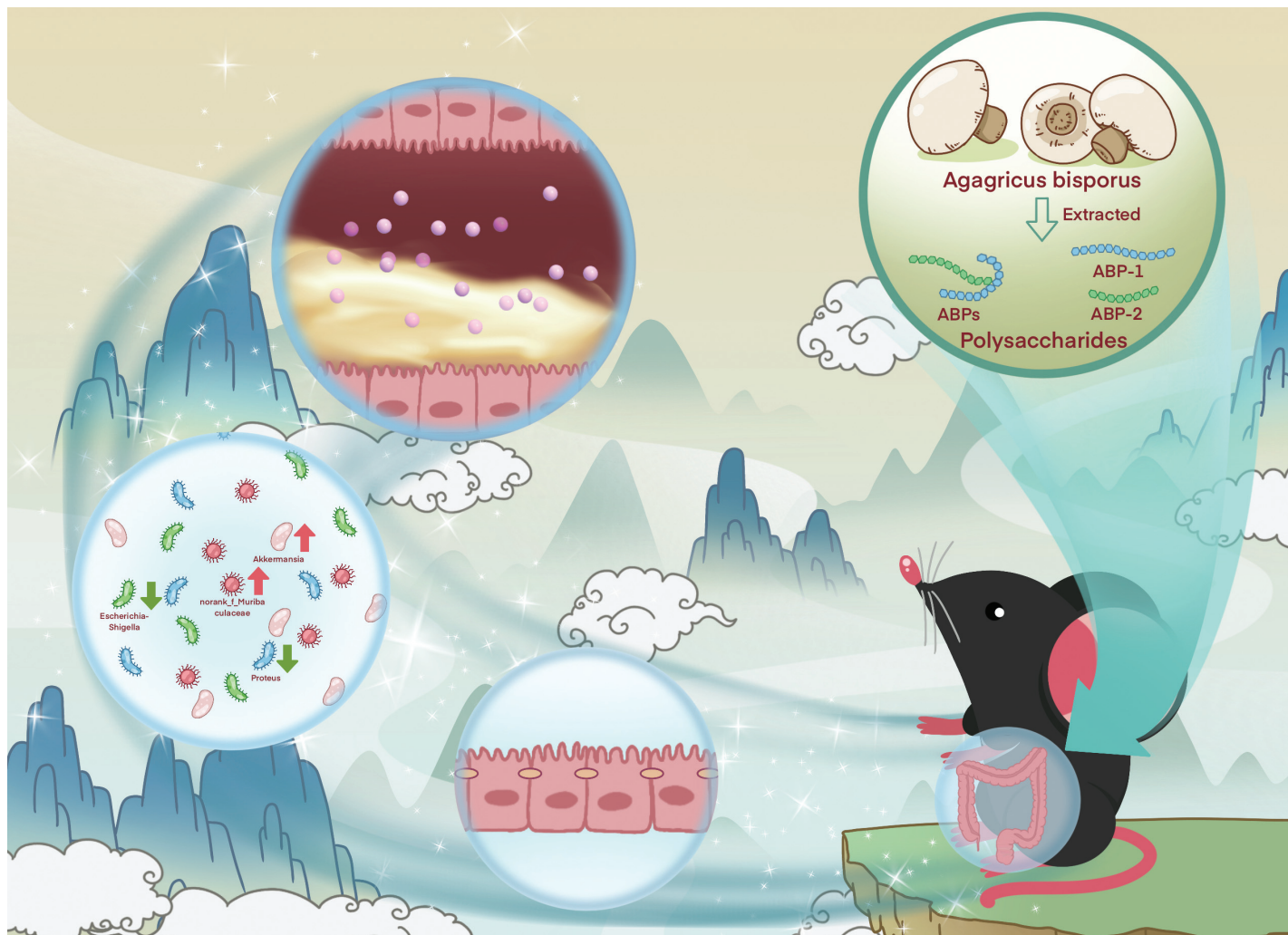
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Fundamental questions  
Elemental answers



**Showcasing research from Professor Shengpeng Wang's laboratory, Institute of Chinese Medical Sciences, University of Macau, Macau, China.**

*Agaricus bisporus* polysaccharides ameliorate ulcerative colitis in mice by modulating gut microbiota and its metabolism

We found that *Agaricus bisporus* polysaccharides (ABPs) and two purified fractions (ABP-1, and ABP-2) possessed therapeutic effects against dextran sodium sulfate (DSS)-induced colitis in mice. ABP-2 with a lower molecular weight ( $1.76 \times 10^4$  Da) showed a superior therapeutic effect than ABP-1 with a higher molecular weight ( $8.86 \times 10^6$  Da). Furthermore, the effects of ABP-1 and ABP-2 were microbiota-dependent, which worked by inducing *Norank\_f\_\_Muribaculaceae* and *Akkermansia* and inhibiting *Escherichia-Shigella* and *Proteus*. Untargeted fecal metabolomic analysis revealed distinct modulation patterns of ABP-1 and ABP-2.

**As featured in:**



See Xiaojia Chen, Shengpeng Wang et al., *Food Funct.*, 2024, **15**, 1191.