

## Supporting Information

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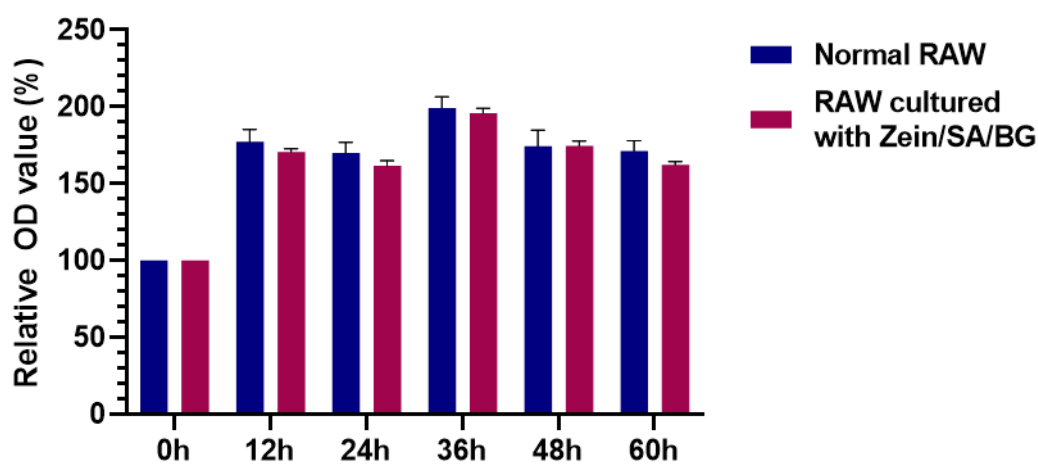
Oral Delivery of Bioactive Glass-Loaded Core–Shell Hydrogel Microspheres for Effective Treatment of Inflammatory Bowel Disease

*Yanlun Zhu, Yiwei Wang, Guanggai Xia, Xuerao Zhang, Shuai Deng, Xiaoyu Zhao, Yanteng Xu, Guozhu Chang, Yu Tao, Mingqiang Li, Haiyan Li\*, Xinyu Huang\* and Hon Fai Chan\**

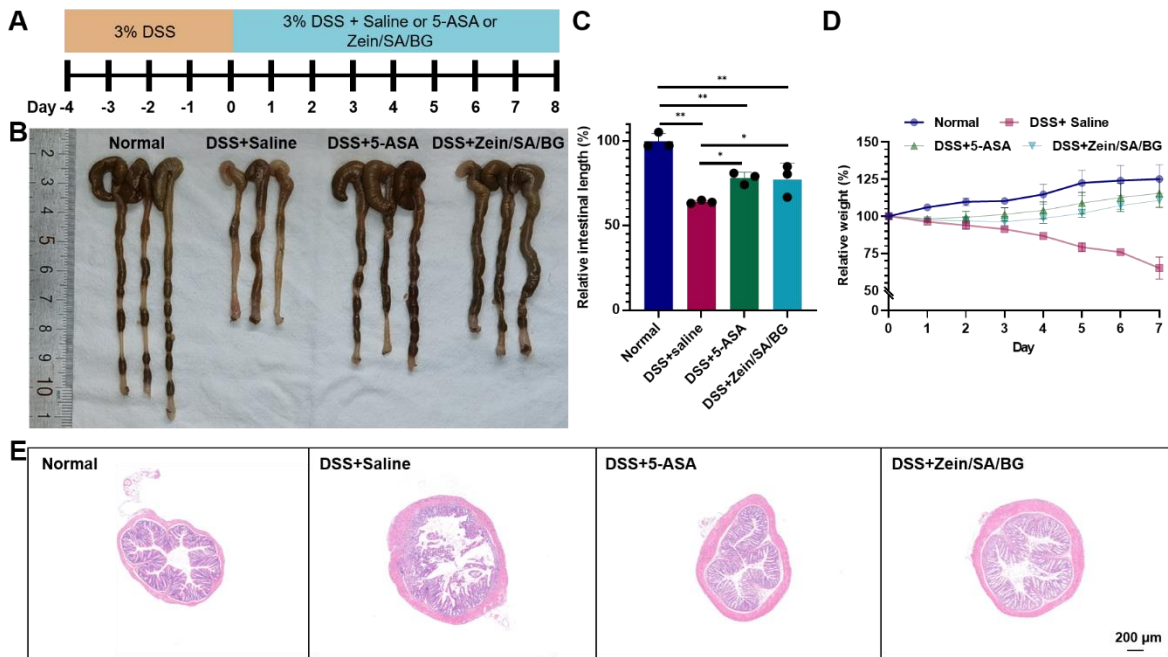
## Supporting Information

**Title** Oral delivery of bioactive glass-loaded core-shell hydrogel microspheres for effective treatment of inflammatory bowel disease

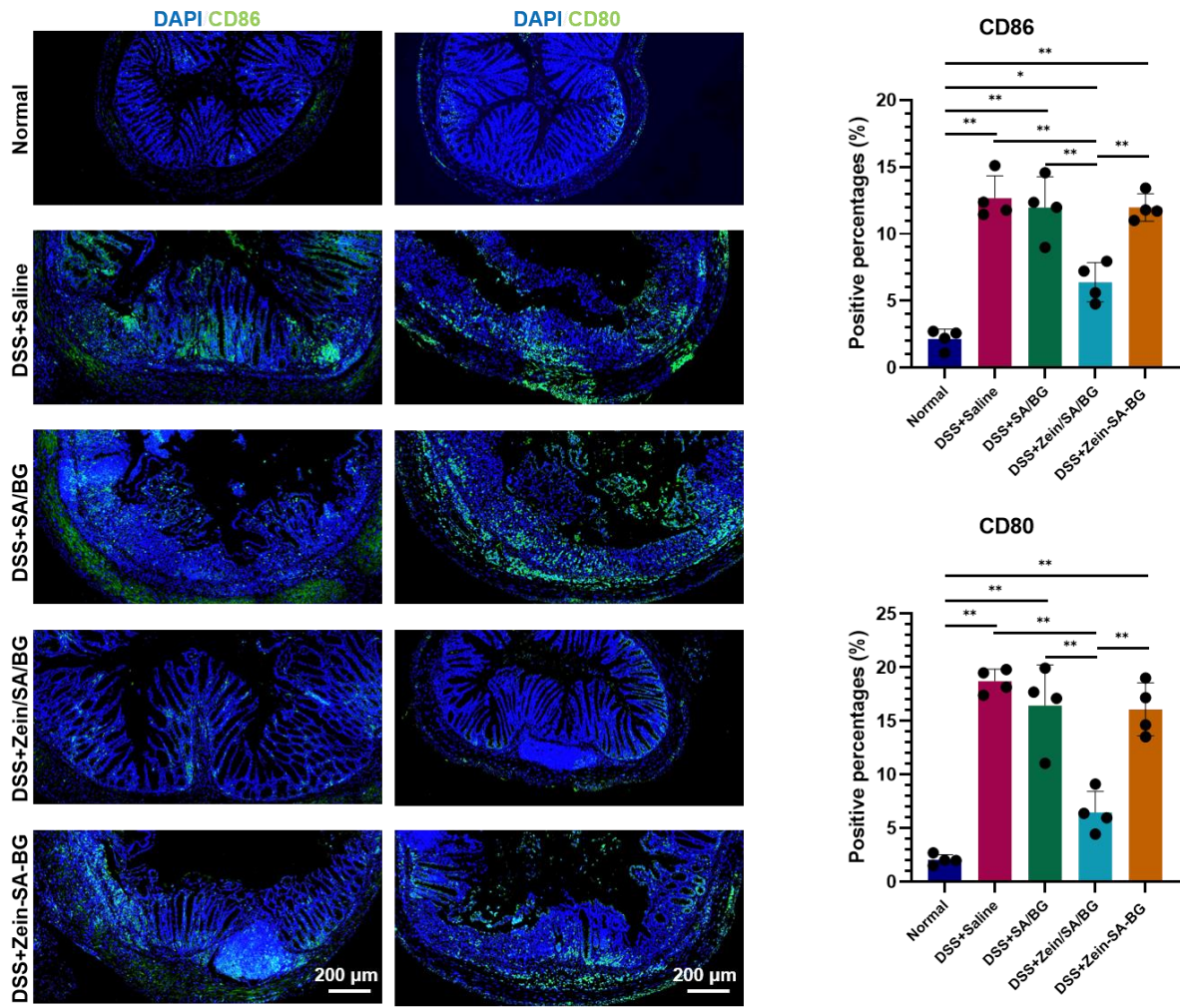
*Yanlun Zhu, Yiwei Wang, Guanggai Xia, Xuerao Zhang, Shuai Deng, Xiaoyu Zhao, Yanteng Xu, Guozhu Chang, Yu Tao, Mingqiang Li, Haiyan Li<sup>\*</sup>, Xinyu Huang<sup>\*</sup>, Hon Fai Chan<sup>\*</sup>*



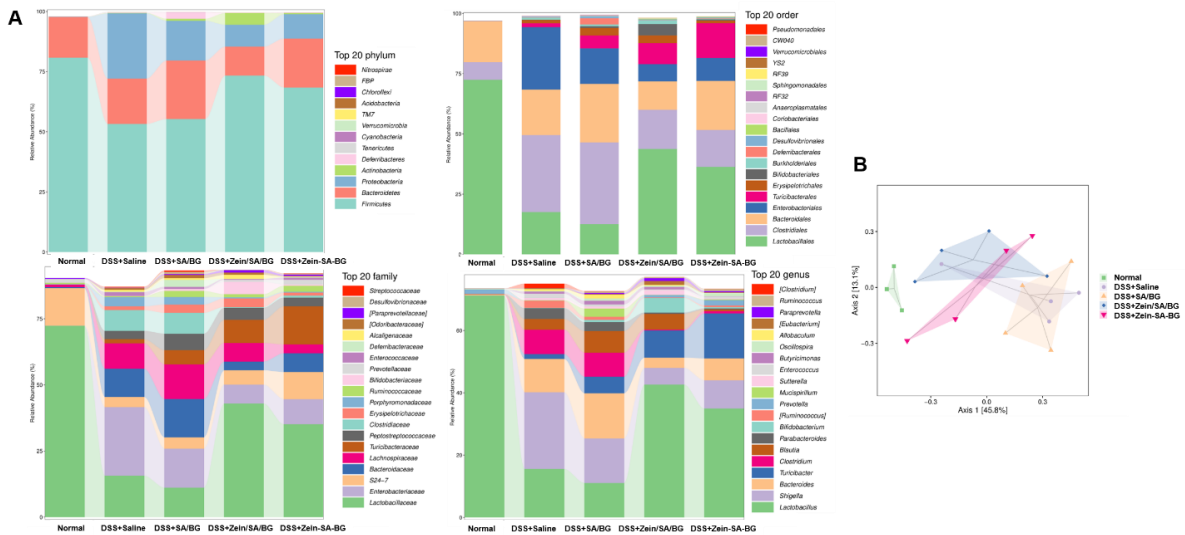
**Figure S1.** CCK-8 test of RAW cells cultured in the presence (RAW cultured with Zein/SA/BG) or absence (Normal RAW) of Zein/SA/BG microspheres. No significant statistical difference was detected between the two groups. (n=3)



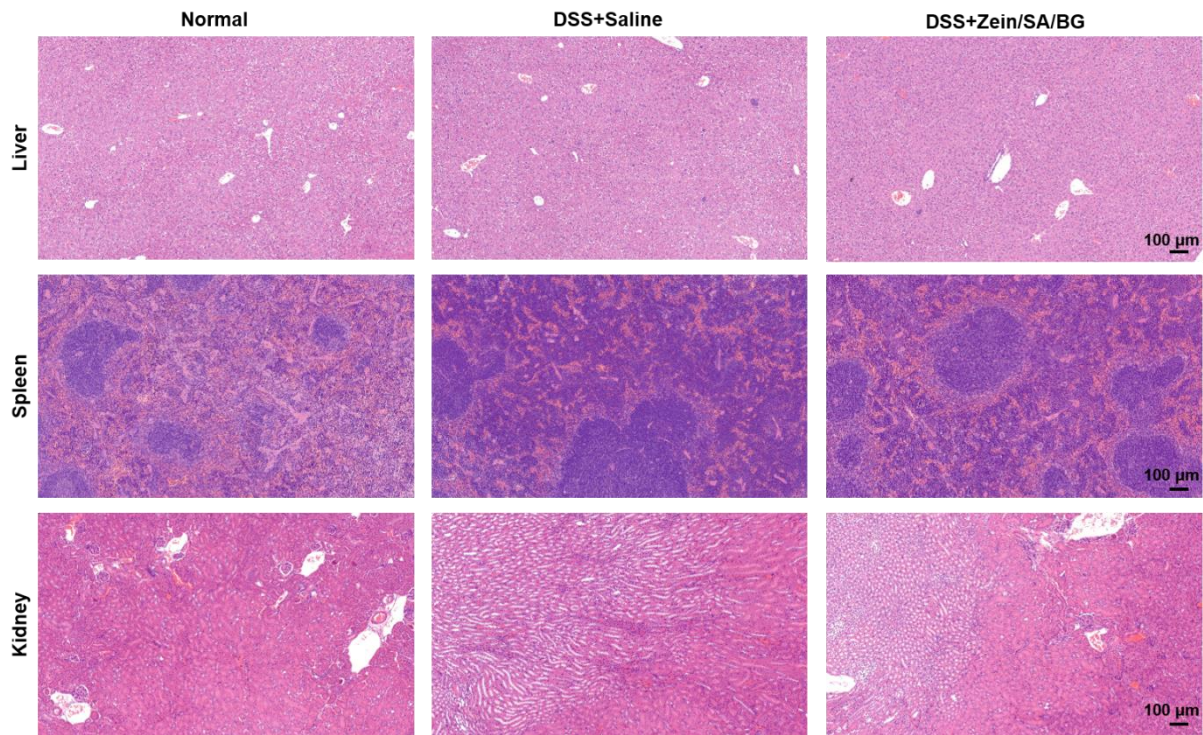
**Figure S2.** Therapeutic effect of 5-ASA and Zein/SA/BG microspheres in DSS-induced acute colitis mice. A) Timeline of the *in vivo* experiment. B) Gross image of the large intestine from normal mice and DSS-induced mice after different treatments. (“Normal” stands for the large intestine from normal mice; “DSS+Saline” stands for the large intestine from DSS-induced mice treated with saline; “DSS+5-ASA” stands for the large intestine from DSS-induced mice treated with 5-ASA; “DSS+Zein/SA/BG” stands for the large intestine from DSS-induced mice treated with the Zein/SA/BG microspheres) C) Relative length of large intestine of normal mice and DSS-induced mice after different treatments. D) Relative weight changes of normal mice and DSS-induced mice after different treatments. E) H&E staining of the large intestine from normal mice and DSS-induced mice after different treatments. (n=3)



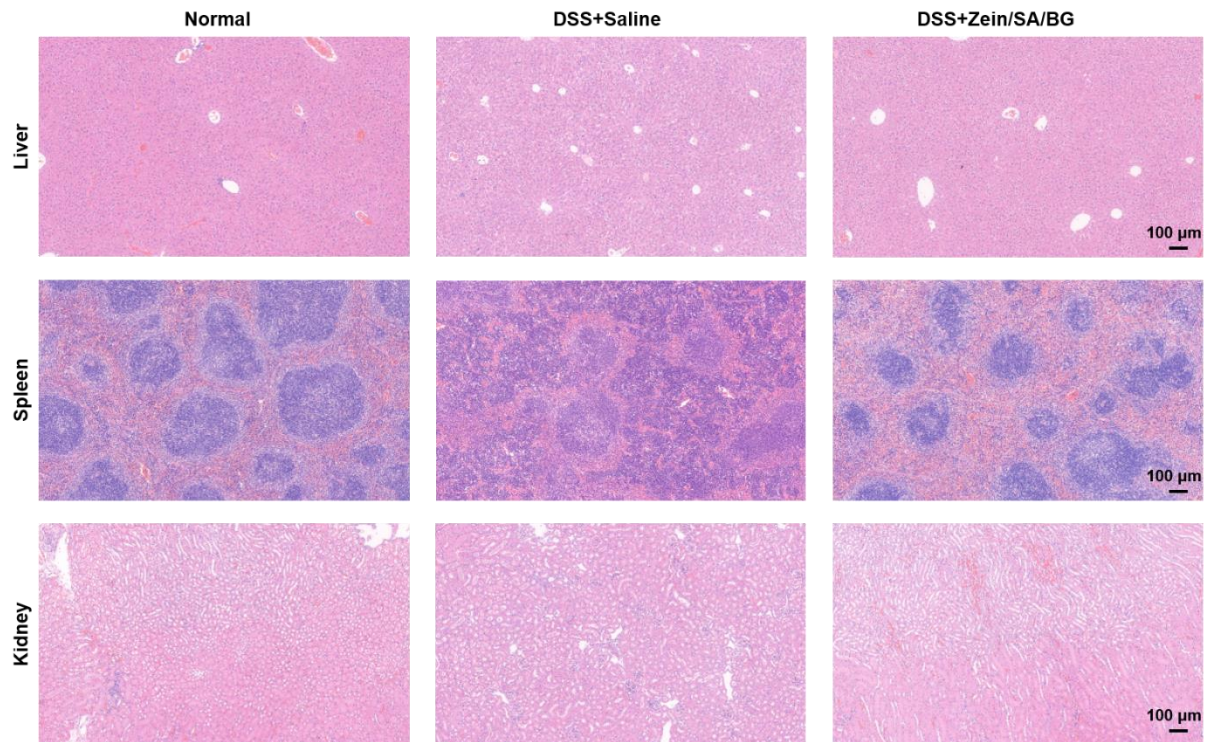
**Figure S3.** Immunostaining of CD86 and CD80 in the large intestine of normal mice and DSS-induced acute colitis mice after different treatments. (n=4, \*\* indicates p<0.01)



**Figure S4.** Effect of BG-based treatments on intestinal microbiota in normal and DSS-induced acute colitis mice. A) Distribution of intestinal microbiota species of normal mice and DSS-induced acute colitis mice after different treatments B) Principal coordinate analysis (PCoA) of intestinal microbiota from normal mice and DSS-induced acute colitis mice after different treatments.



**Figure S5.** H&E staining of the liver, spleen, and kidney from normal mice and DSS-induced acute colitis mice after different treatments.



**Figure S6.** H&E staining of the liver, spleen and kidney from normal mice and DSS-induced chronic colitis mice after different treatments.