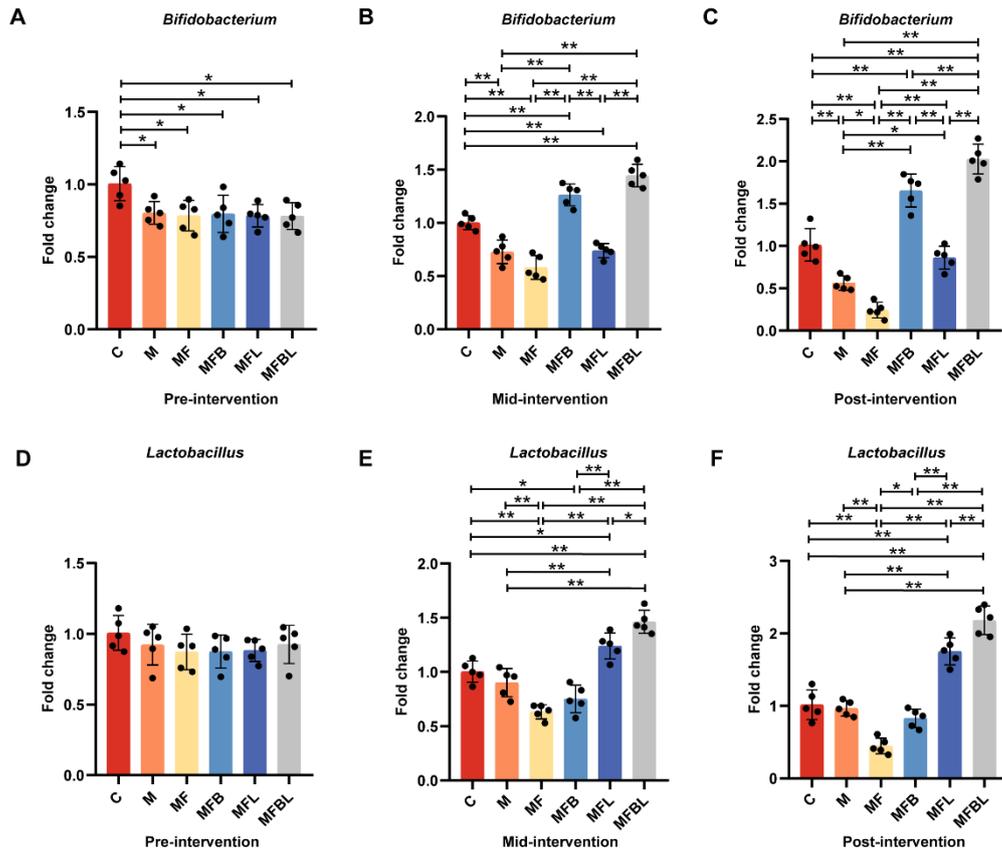
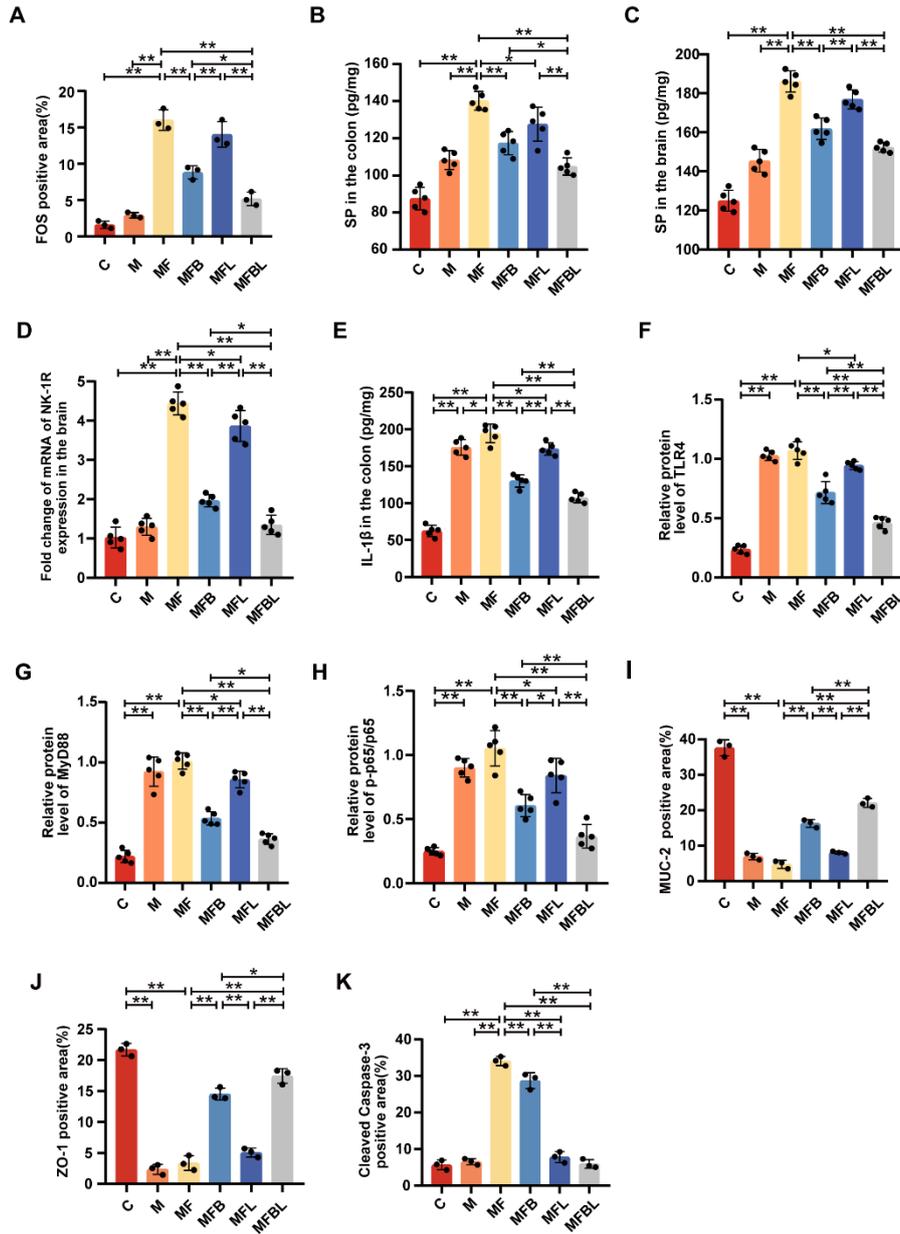


Supplementary Fig. 1 The abundance of *Bifidobacterium* at different time points during the intervention. (A-C) The abundance of *Bifidobacterium* in the mice feces on the day before the intervention, on day 11 of the intervention, and after the completion of the intervention. (D-G) The positive areas of FOS, MUC-2, ZO-1, and Cleaved Caspase-3 proteins were analyzed separately using ImageJ. * $p < 0.05$, ** $p < 0.01$.



Supplementary Fig. 2 The abundance of *Bifidobacterium* or *Lactobacillus* at different time points during the intervention was assessed by q-PCR. (A-C) The abundance of *Bifidobacterium* in the mice feces on the day before the intervention, on day 11 of the intervention, and after the completion of the intervention. (D-F) The abundance of *Lactobacillus* in the vaginal secretions of mice was measured on the day before the intervention, on day 11 of the intervention, and after the completion of the intervention. * $p < 0.05$, ** $p < 0.01$.



Supplementary Fig. 3 “Intestinal-vaginal” probiotic administration effectively alleviates the gastrointestinal side effects of chemotherapy. (A) The positive areas of FOS. (B,C) ELISA detects the expression of SP in colon and brain tissues. (D) RT-qPCR detects NK-1R expression in brain tissue. (E) The expression of IL-1 β in colon tissue was detected by ELISA. (F-H) Relative expressions of TLR4, MyD88, p-p65 and p65 in colon tissue. (I-K) The positive areas of MUC-2, ZO-1, and Cleaved Caspase-3 proteins were analyzed separately using ImageJ. * $p < 0.05$, ** $p < 0.01$.

Supplementary Material Table S1. Disease activity index (DAI)

Index	weight loss(%)	stool consistency	blood in the stool
0	<1	normal	normal
1	1-5	-	-
2	6-10	very soft	positive occult blood
3	11-15	-	-
4	>16	liquid	gross bloody stool

Supplementary Material Table S2. Primer sequences

qPCR target	Forward 5' -3'	Reverse5' -3'
5-HT ₃ R	GCTATCCTCCATCCGCCACTTC	CGAGCACAGCCAGCAGGTAG
NK-1R	GTGCAACCTACCTGGCAAAT	ACCAGCAGAGGCAGGAAGTA
GAPDH	CTCGTGGAGTCTACTGGTGT	GTCATCATACTTGGCAGGTT
16s	ACTCCTACGGGAGGCAGCAGT	TATTACCGCGGCTGCTGGC
<i>Bifidobacterium</i>	TCGCGTC(C/T)GGTGTGAAAG	CCACATCCAGC(A/G)TCCAC
<i>Lactobacillus</i>	CACCGCTACACATGGAG	AGCAGTAGGGAATCTTCCA
<i>Clostridium</i>	GCACAAGCAGTGGAGT	CTTCCTCCGTTTTGTCAA
<i>Bacteroides</i>	GGTGTCCGGCTTAAGTGCCAT	CGGACTGTAAGGGCCGTGC
<i>Enterococcus</i>	CATGACGTTACCCGCAGAAGAAG	CTCTACGAGACTCAAGCTTGC
<i>Enterobacter</i>	ATCAGATGTGCCCAGATGG	CCGTGTCTCAGTTCCAGTG

Supplementary Material Table S2. Antibodies used in this study

Antibodies	Source	Cat. No.
β -actin	proteintech	66009-1-Ig
p-p53	WanLei	WL02504
p53	Abcam	ab26
Bax	Proteintech	50599-2-Ig
Bcl-2	Proteintech	68103-1-Ig

Caspase-3	proteintech	19677-1-AP
Cleaved Caspase-3	Abcam	ab214430
TLR4	proteintech	66350-1-Ig
MyD88	Proteintech	67969-1-Ig
p-p65	CST	3033S
p65	Proteintech	10745-1-AP
