

Supporting Information

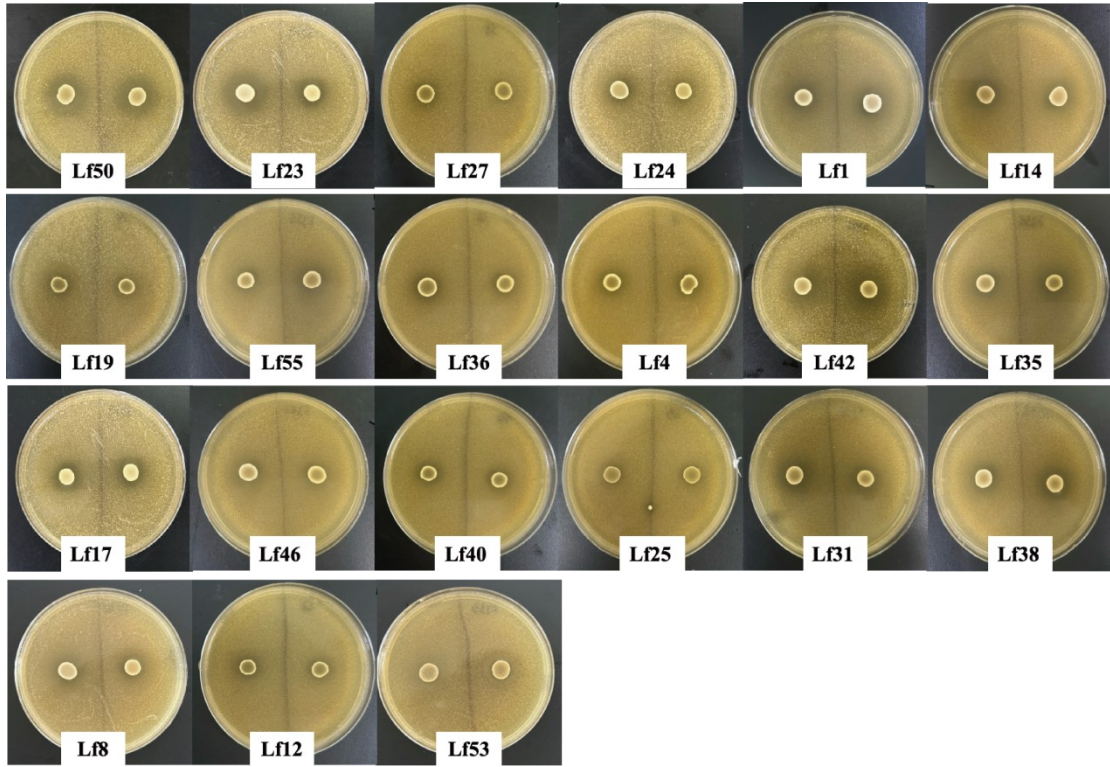
1 ***Limosilactobacillus fermentum* 50 Alleviates Vulvovaginal Candidiasis**
2 **via the Gut-Vagina Axis: Modulating Microbiota, Barrier Function**
3 **and Inflammation**

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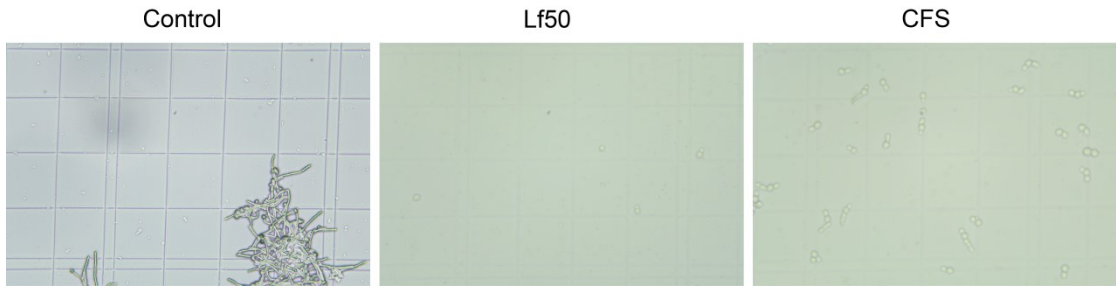
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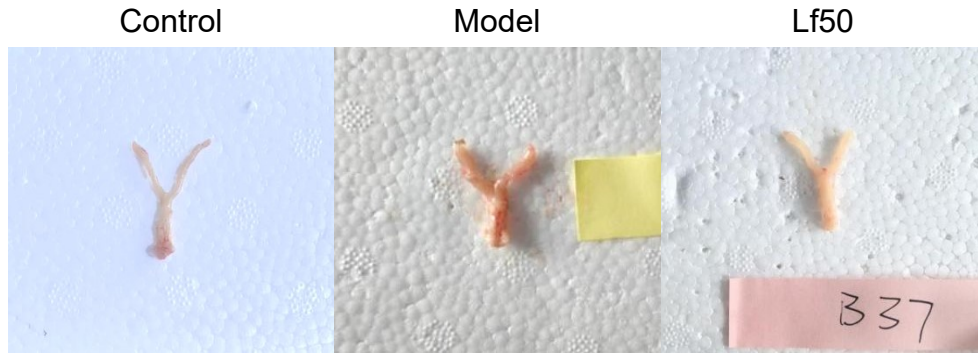
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12 **Figure S1** Spot-on-Lawn plate showing anti-*C. albicans* activity of 21 *L. fermentum* strains.



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14 **Figure S2** Representative micrographs of the counted germ tubes.



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16 **Figure S3** Representative macroscopic images of the vagina and uterus.

17 **Table S1.** Bacteria strains used in this study.

Strain name	Strain source
<i>Limosilactobacillus fermentum</i> 1	Cow milk
<i>Limosilactobacillus fermentum</i> 4	Cow milk
<i>Limosilactobacillus fermentum</i> 8	Buffalo Milk
<i>Limosilactobacillus fermentum</i> 12	Dali Zhuganzha, a traditional fermented pork product
<i>Limosilactobacillus fermentum</i> 14	Dali Rubing, a traditional goat's milk cheese
<i>Limosilactobacillus fermentum</i> 17	Dali Zhuganzha, a traditional fermented pork product
<i>Limosilactobacillus fermentum</i> 19	Dali Rushan, a traditional laminated and dried dairy product
<i>Limosilactobacillus fermentum</i> 23	Cow milk
<i>Limosilactobacillus fermentum</i> 24	Cow milk
<i>Limosilactobacillus fermentum</i> 25	Cow milk
<i>Limosilactobacillus fermentum</i> 27	Dali Zhuganzha, a traditional fermented pork product
<i>Limosilactobacillus fermentum</i> 31	Cow milk
<i>Limosilactobacillus fermentum</i> 35	Dali Doufuchang , a traditional fermented sausage
<i>Limosilactobacillus fermentum</i> 36	Dali Mianfeizi , a traditional sourdough starter
<i>Limosilactobacillus fermentum</i> 38	Dali Mianfeizi , a traditional sourdough starter
<i>Limosilactobacillus fermentum</i> 40	Mao-tofu (a fungal-fermented soybean curd with characteristic mycelial growth)
<i>Limosilactobacillus fermentum</i> 42	Dali Rushan, a traditional laminated and dried dairy product
<i>Limosilactobacillus fermentum</i> 46	Dali Mianfeizi , a traditional sourdough starter
<i>Limosilactobacillus fermentum</i> 50	Mao-tofu (a fungal-fermented soybean curd with characteristic mycelial growth)
<i>Limosilactobacillus fermentum</i> 53	Fuyuan Suanluobo, a traditional fermented radish
<i>Limosilactobacillus fermentum</i> 55	Cow milk

19 **Table S2.** Vaginal inflammation scoring criteria for vaginitis assessment.

Score	Erythema	Edema	Discharge
0	None No erythema	None No edema	None No discharge
1	Very mild Barely perceptible erythema	Very mild Barely perceptible edema	Very scant Trace amount of discharge
2	Mild Faint redness	Mild Slight but noticeable edema	Scant Small amount of discharge
3	Moderate Marked redness	Moderate Marked edema (~1 mm elevation)	Moderate Moderate amount of discharge
4	Severe Beet-red or purplish redness	Severe Marked edema (>1 mm elevation, extended area)	Severe Profuse discharge (moistening a considerable perivaginal area)

21 **Table S3.** Histopathological Scoring Criteria for Vaginitis Assessment.

Score	Inflammatory Cell Infiltration	Epithelial Integrity
0	None No or occasional neutrophils	Intact Stratified squamous epithelium intact with clear layers
1	Mild Scattered neutrophils	Mild desquamation Superficial epithelial cells sloughed
2	Moderate Dense inflammatory infiltrate	Moderate erosion Epithelial loss involving <50% of full thickness
3	Severe Diffuse infiltration with microabscess or necrosis	Severe ulceration Extensive epithelial loss with exposed lamina propria

23 **Table S4.** RT-qPCR primer sequences for target genes.

Gene	Forward Primer (5'-3')	Reverse Primer (5'-3')
<i>ALS3</i>	CTAATGCTGCTACGTATAATT	CCTGAAATTGACATGTAGCA
<i>HWP1</i>	TGGTGCTATTACTATTCCGG	CAATAATAGCAGCACCGAAG
<i>ECE1</i>	GCTGGTATCATTGCTGATAT	TTCGATGGATTGTTGAACAC
<i>TNF-α</i>	CCTGTAGCCCACGTCGTAG	GGGAGTAGACAAGGTACAACC C
<i>SI00a8</i>	TGTCCTCAGTTTGTGCAGAATATAA A	TCACCATCGCAAGGAACTCC
<i>SI00a9</i>	GGTGAAGCACAGTTGGCA	GTGTCCAGGTCCTCCATGATG
<i>IL-10</i>	GCTCTTACTGACTGGCATGAG	CGCAGCTCTAGGAGCATGTG
<i>ZO-1</i>	GGCCTTGGCCTAGCATAACAC	GTCTTCATTTGACCCTCCCTC
<i>Occludin</i>	TTGAAAGTCCACCTCCTTACAGA	CCGATAAAAAGAGTACGCTG G
<i>Claudin-1</i>	GGGGACAACATCGTGACCG	AGGAGTCGAAGACTTTGCACT
<i>β-actin</i>	GTGACGTTGACATCCGTAAGA	GCCGGACTCATCGTACTCC

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