

Myricetin-3-O-galactoside in cranberries alleviates urinary tract infections in mice by inhibiting the adhesion of uropathogenic *Escherichia coli* CFT073

Xingyuan Wu ^{1#}, Zhang Qian ^{1#}, Weijie Zhou ¹, Li Yue ¹, Jianxia Sun ², Weibin Bai ^{1*}

¹ Department of Food Science and Engineering, Institute of Food Safety and Nutrition, Guangdong Engineering Technology Center of Food Safety Molecular Rapid Detection, Jinan University, Guangzhou, China

² School of Chemical Engineering and Light Industry, Guangdong Provincial Key Laboratory of Plant Resources Biorefinery, Guangdong University of Technology, Guangzhou 510632, China.

These authors contributed equally to this work.

* Correspondence Authors: Weibin Bai, Ph.D., Department of Food Science and Engineering, Institute of Food Safety and Nutrition, Jinan University, 601 Huangpu Rd, Guangzhou 510632, PR China. 13822283521, +86-20-8522630, baiweibin@163.com.

The following are the Supplementary Information to this article:

Table. S1 The elution gradient of medium-pressure liquid chromatography.

Time (min)	Phase B (%)	
	began	end
0~10	6	6
10~30	6	15
30~70	15	30
70~230	30	34
230~270	34	40
270~280	40	81
280~285	81	95
285~345	95	95
345~350	95	65
350~380	65	65

Table. S2 The RT-qPCR primer sequences in this article.

Gene		Primer sequences (5'→3')
<i>GAPDH</i>	Forward	CATGGCCTTCCGTGTTCTTA
	Reverse	GCGGCACGTCAGATCCA
16 S	Forward	AGAGTTTGATCCTGGCTCAG
	Reverse	AGAGTTTGATCCTGGCTCAG
<i>IL-1β</i>	Forward	TGAGCTCGCCAGTGAAATGA
	Reverse	AGATTCGTAGCTGGATGCCG
<i>IL-6</i>	Forward	TAGTCCTTCCTACCCCAATTTCC
	Reverse	TTGGTCCTTAGCCACTCCTTC
<i>TNF-α</i>	Forward	CAGGCGGTGCCTATGTCTC
	Reverse	CGATCACCCCGAAGTTCAGTAG
<i>IFN-γ</i>	Forward	ATGAACGCTACACACTGCATC

<i>α3 integrin</i>	Reverse	CCATCCTTTTGCCAGTTCCTC
	Forward	AAGGGACCTTCAGGTGCA
<i>β1 integrin</i>	Reverse	TGTAGCCGGTGATTTACCAT
	Forward	GAAGGGTTGCCCTCCAGA
<i>FimH</i>	Reverse	GCTTGAGCTTCTCTGCTGTT
	Forward	CAATGGTACCGCAATCCCTA
<i>FimA</i>	Reverse	GCAGGCGCAAGGTTTACA
	Forward	ACTCTGGCAATCGTTGTTCTGTCTG
<i>papG</i>	Reverse	ATCAACAGAGCCTGCATCAACTGC
	Forward	GTCAGGCGGTAATGATGCTT
<i>PapF</i>	Reverse	TCGTAAAAAGCATAAACATGACATT
	Forward	CCCGTGAAGAGCTGCGTAA
<i>CsgA</i>	Reverse	TCTCGGCGCCAGCAA
	Forward	GCGGTAATGGTGCAGATGTTG
	Reverse	CGTTGGGTCAGATCGATTGA

Table. S3 Information on the compounds isolated and identified from Fraction 4.

Peak	Retention time	λmax	[M-H] ^{-/+} (m/z)		Molecular formula	Identified compound
	min	nm	MS	MS/MS		
1	10.882	301.81	153.0182-	112.9856	C ₇ H ₆ O ₄	PCA
2	13.082	375.05	479.0809-	316.0185	C ₂₁ H ₂₀ O ₁₃	M-3-Gal
3	15.242	313.32	463.0858-	301.2321	C ₂₁ H ₂₀ O ₁₂	Q-3-Gal
4	15.489	306.13	559.1422+	147.0441	C ₃₅ H ₅₂ O ₄	Hyp
5	15.875	313.03	608.2853+	301.2321	C ₂₇ H ₃₀ O ₁₆	Rut
6	16.169	270.33	537.1603-	163.0387	C ₂₅ H ₃₀ O ₁₃	6-FC

Fig. S1 Effects of different cranberries on T24 cell viability using the CCK-8 assay.

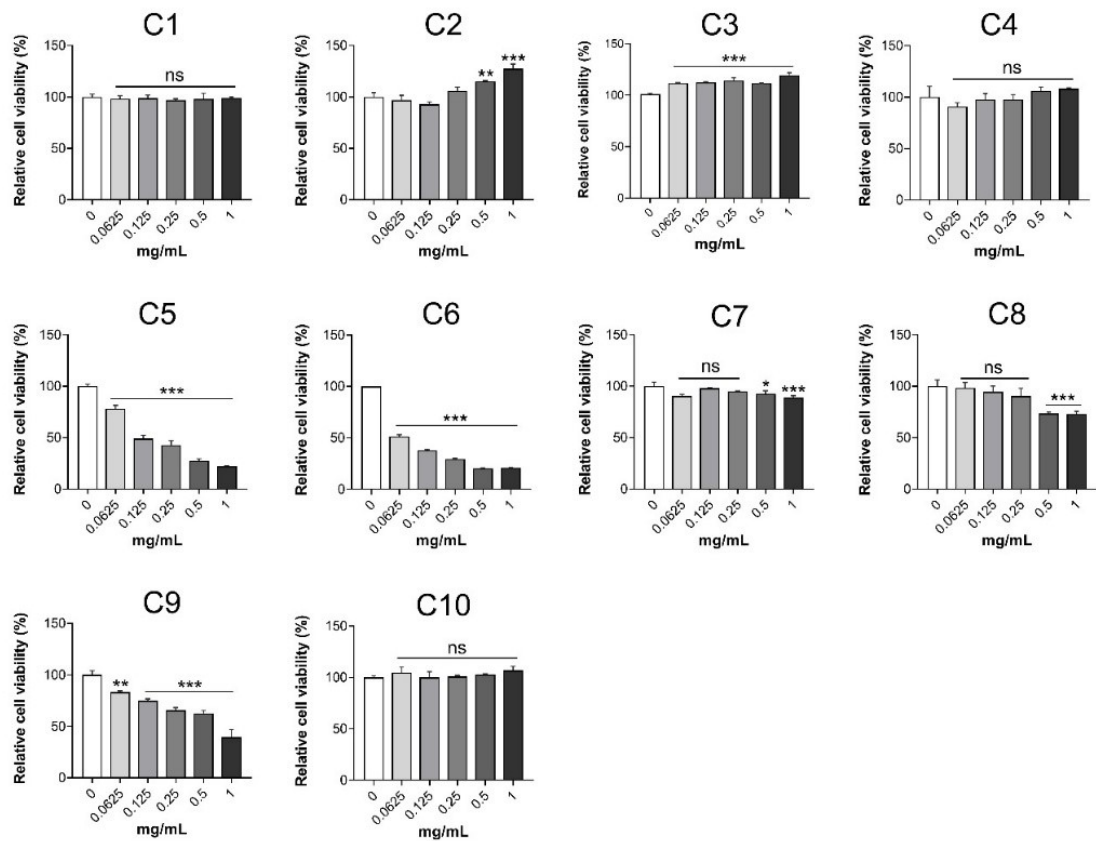


Fig. S2 Effects of different concentrations of M-3-gal on the growth of *E. coli* 25922 and UPEC CFT073.

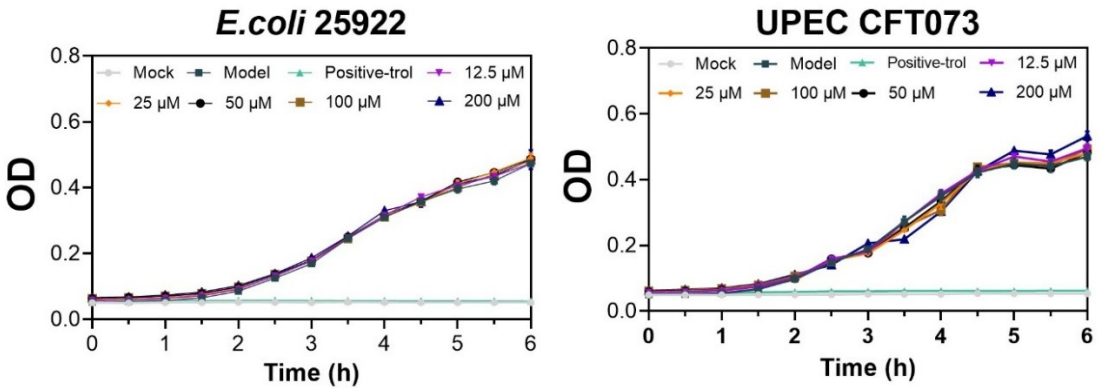


Fig. S3 Raw data of CAT and HO-1 for western blotting in Fig. 5e. We removed Group A2 from the final results.

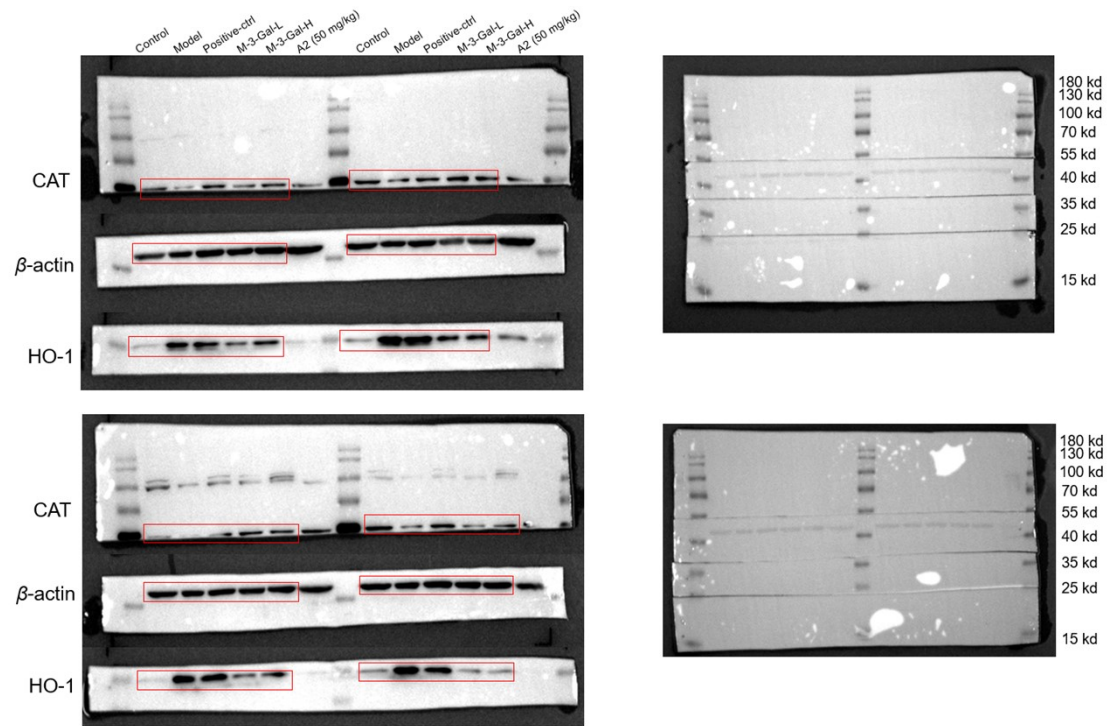


Fig. S4 Raw data of SOD2 for western blotting in Fig. 5e. We removed Group A2 from the final results.

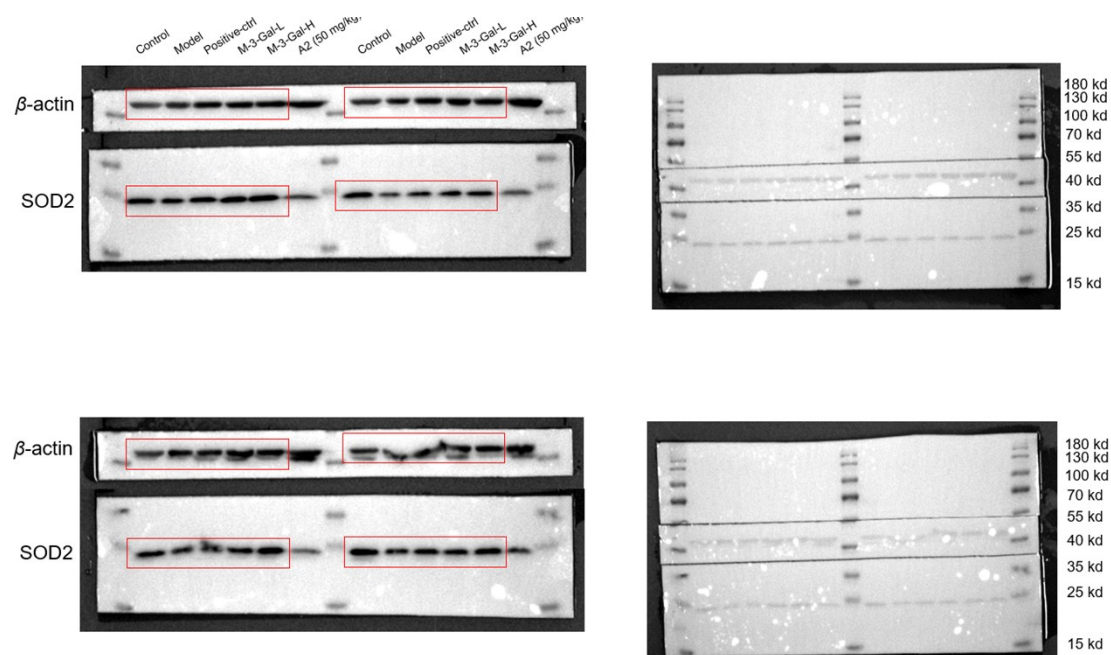


Fig. S5 Raw data of FimA and FimH for western blotting in Fig. 8e. We removed Group A2 from the final results.

