



Figure S1 Animal experiment design(A); levels of AST(B), ALT(C) and GSH (D) in liver tissue of mice. Data are expressed as mean \pm SD (n = 10). Different lowercase alphabet letters (a–c) are significantly different at the level of $p < 0.05$. RSE: *R. sterilis* S. D. Shi ethanol extract; WRS: whole *R. sterilis* S. D. Shi fruits.

Table S1 The standard curves of gallic acid, rutin and Trolox

	Standard curve	R ²
Gallic acid	$y = 0.3746 x + 0.3483$	0.9964
Rutin	$y = 0.9432 x + 0.0391$	0.9967
DPPH	$y = -1.1076 x + 2.3831$	0.9994
ABTS	$y = -1.0209 x + 1.4674$	0.9993
FRAP	$y = 0.5295 x + 0.0986$	0.9995

Table S2A AIN93G diet formula

Ingredients	Content (%)
Casein, 30mesh	20.00
L-cystine	0.3
Corn starch	39.70
Maltodextrin	13.20
Sucrose	10.00
Cellulose	5.00
Soybean oil	7.00
T-butylhydroquinone	0.0014
Mineral mix s10022G	3.50
Vitamin mix V10037	1.00
Choline bitartrate	0.25

Table S2B Characterization of WRS

Components	Characterization
Total phenols	155.37 mg/100 g FW
Total flavonoids	278.63 mg/100 g FW
β-carotene	780.89 μg/100 g FW
Zeaxanthin	268.78 μg/100 g FW
Ascorbic acid	1.19 g/100 g FW
Malic acid	0.26 g/100 g FW
Tartaric acid	0.26 g/100 g FW
Glucose	10.32 g/100 g FW
Arabinose	3.61 g/100 g FW
Galactose	1.60 g/100 g FW
Superoxide dismutase	4,609.26 U/g
Total soluble solids	16.55 °Brix

Table S3 Scoring criteria for DAI

Score	Weight loss (%)	Stool consistency	Bleeding
0	<1	Normal	None
1	1~5	Soft stools	Presence of blood
2	5~10	Soft and wet stools	Moderate bleeding
3	10~20	Mild diarrhoea	Moderately high bleeding
4	>20	Diarrhoea	Abundant bleeding

Table S4 Scoring criteria for colon histological damage

Feature graded	Description	Grade
Crypt damage	None	0
	Basal 1/3 damaged	1
	Basal 2/3 damaged	2
	Only surface epithelium intact	3
	Entire crypt and epithelium lost	4
Goblet cell depletion	None	0
	Slight crypt damage	1
	Moderate crypt damage	2
	Severe crypt damage	3
Inflammation	None	0
	Mild inflammatory infiltration	1
	Moderate inflammatory infiltration	2
	Large amount of inflammatory infiltrate	3

Table S5 Primer sequence for RT-qPCR

Primer direction (5'~3')		Sequence
β -actin	F	CATCCGTAAAGACCTCTATGCCAAC
β -actin	R	ATGGAGCCACCGATCCACA
MUC2	F	TCCTGACCAAGAGCGAACAC
MUC2	R	ACAGCACGACAGTCTTCAGG
TNF- α	F	GCCTCTTCTCATTCCTGCTT
TNF- α	R	TGGGAACTTCTCATCCCTTTG
IL-1 β	F	TGGCAACTGTTCCCTG
IL-1 β	R	GGAAGCAGCCCTTCATCTTT
IL-6	F	CCCACCAAGAACGATAGTCA
IL-6	R	GGTATCCTCTGTGAAGTCCTC
COX-2	F	AAGAGGCTAAGACCGCCTTC
COX-2	R	GTCGTGGTCAGTCAACATGG
iNOS	F	AGGTACTCAGCGTGCTCCAC
iNOS	R	GCACCGAAGATATCTTCATG

Table S6 The standard curves of SCFAs

	RT (min)	Standard curve	R ²
Acetic acid	8.872	y = 41.56 x	0.9977
Propionic acid	10.596	y= 87.41 x	0.9977
Isobutyric acid	11.168	y = 126.00 x	0.9977
Butyric acid	12.458	y= 119.85 x	0.9978
Isovaleric acid	13.311	y= 157.93 x	0.9980
Valeric acid	14.757	y= 153.18 x	0.9981