Table S1. Dietary composition

Ingredient	RYR diet（g/kg）	Basal chow diet（g/kg）
Corn starch	415	465
Red yeast rice powder	50	0
Fish meal	280	280
Sucrose	100	100
Soybean oil	50	50
Wheat bran	50	50
Composite mineral premix	35	35
Multivitamin premix	10	10
DL-methionine	3	3
L-cystine	3	3
Choline chloride	2	2
Choline Bitartrate	2	2

Table S2. Disease activity index scoring criteria

Score	Percent weight loss	Stool consistency	Stool bleeding
0	Constant	Normal	Normal
1	1-5		
2	5-10	Loose stools	Occult blood positive
3	10-15		
4	>15	diarrhea	Overt bleeding

Table S3：Primers of RT-PCR

Gene			primer
House Keeping	β-actin	*Actb-F*	AAGGCCAACCGTGAAAAGAT
		Actb-R	GTGGTACGACCAGAGGCATAC
Host cell invasion	Ecad	*Cdh1-F*	ATCCTCGCCCTGCTGATT
		Cdh1-R	ACCACCGTTCTCCTCCGTA
	mN-cad	*Cdh2-F*	GCCATCATCGCTATCCTTCT
		Cdh2-R	CCGTTTCATCCATACCACAAA
Permeability	ZO-1	*Tjp1-F*	GCCGCTAAGAGCACAGCAA
		Tjp1-R	GCCCTCCTTTTAACACATCAGA
	ZO-2	*Tjp2-F*	TCATCAAAGAAATGACCAGAACA
		Tjp2-R	TCTCAGTAACAGTGCCGTTGA
	Occludin	*Ocln-F*	GGTCTCTACGTGGATCAATATTTGTA
		Ocln-R	AACCCCAGGACAATGGCTA
	claudins	*Ocld1-F*	CCCTTGACCCCCATCAAT
		Ocld1-R	ACACCTCCCAGAAGGCAGA
Immune response	TNF-α	*TNFg-F*	TCTTCTCATTCCTGCTTGTGG
		TNFg-R	GGTCTGGGCCATAGAACTGA
	IL-1β	*IL1b-F*	TTGACGGACCCCAAAAGAT
		IL1b-R	AGCTGGATGCTCTCATCAGG
	INF-γ	*Infg-F*	ATCTGGAGGAACTGGCAAAA
		Infg-R	TTCAAGACTTCAAAGAGTCTGAGGTA
	IL-10	*IL10-F*	CAGAGCCACATGCTCCTAGA
		IL10-R	GTCCAGCTGGTCCTTTGTTT
	IL-6	*IL6-F*	GCTACCAAACTGGATATAATCAGGA
		IL6-R	CCAGGTAGCTATGGTACTCCAGAA
	iNOS	*Nos2-F*	GTTCTCAGCCCAACAATACAAGA
		Nos2-R	GTGGACGGGTCGATGTCAC
	Muc2	*Muc2-F*	ATGCCCACCTCCTCAAAGAC
		Muc2-R	GTAGTTTCCGTTGGAACAGTGAA

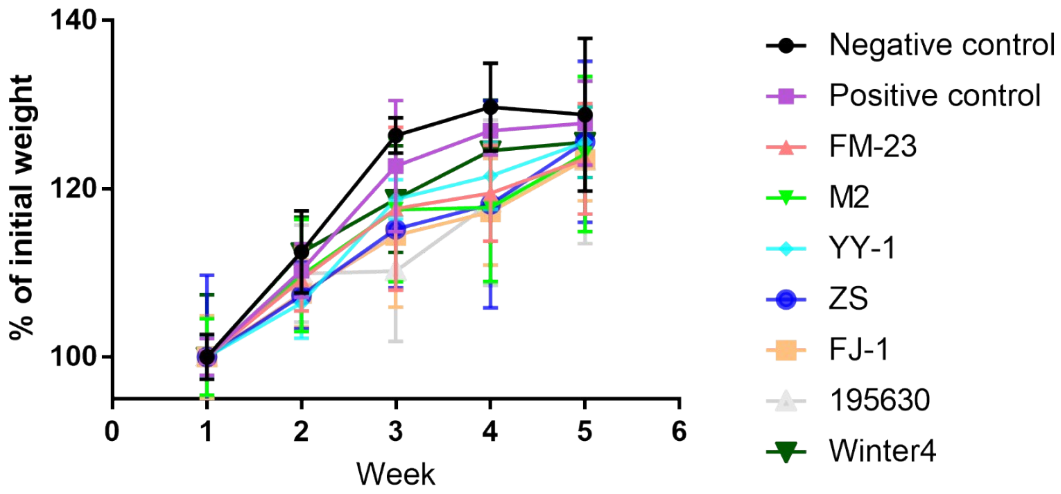

Figure S1 Changes of weight in the nine groups of mice before *S. enterica* infection

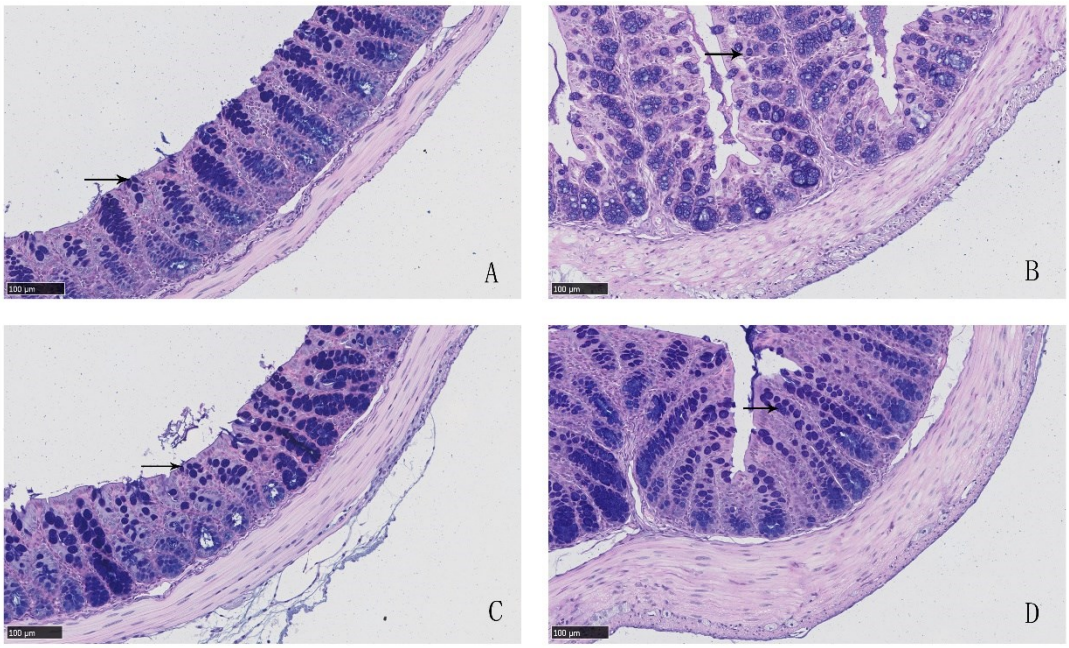

Figure S2. Ileal paraffin sections of 5 μm were stained with alcian blue and periodic acid-Schiff (PAS) and counterstained with Schiff reagent and Nuclear Fast Red solution. Arrows indicate examples of goblet cells. A: basal chow diets diet for 4 weeks, given normal saline for 1 week. B: basal chow diets diet for 4 weeks, *S. enterica* infection for 1 week. C: RYR diet for 4 weeks, given normal saline for 1 week. D: RYR diet for 4 weeks, *S. enterica* infection for 1 week.

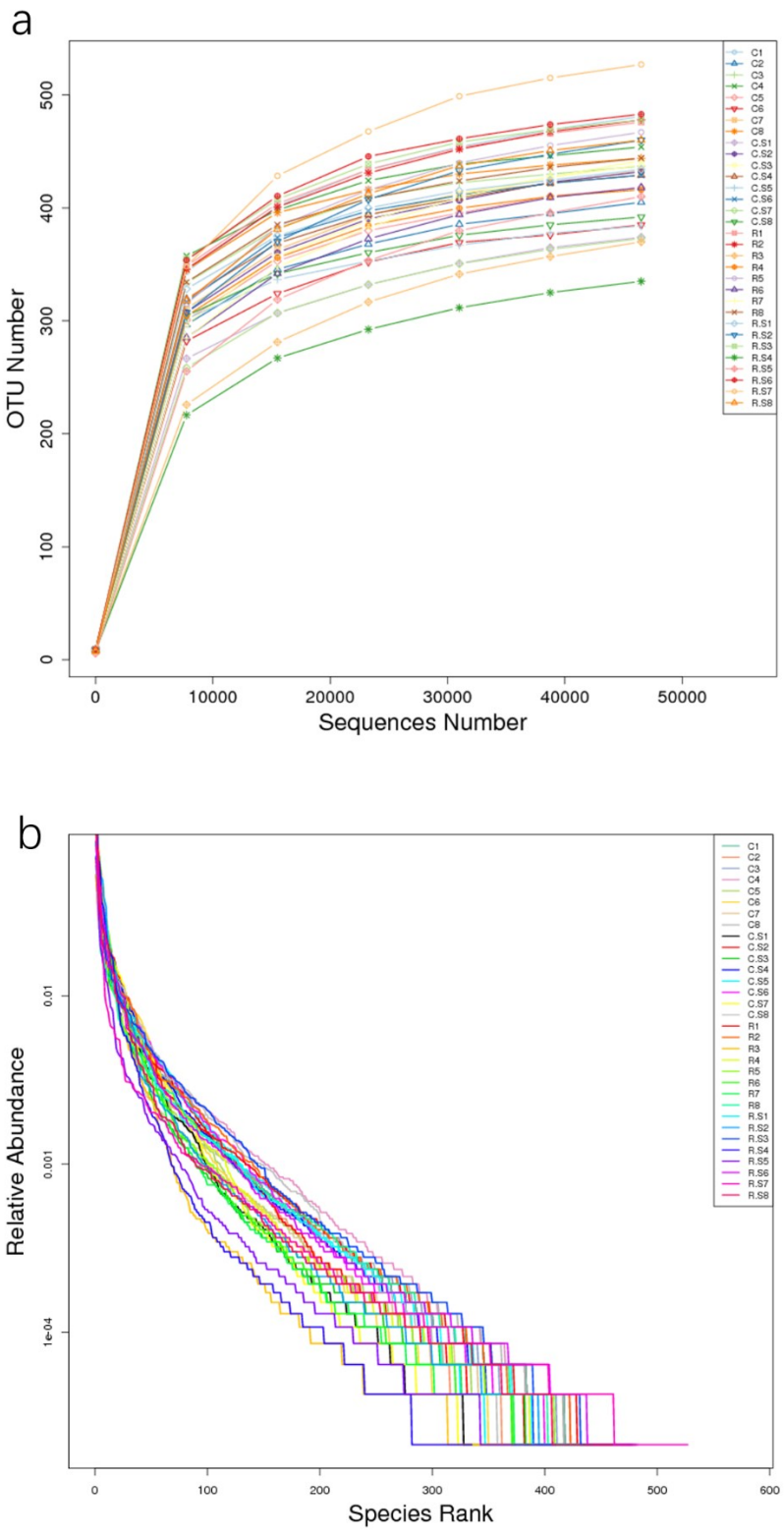

Figure S3. (a) Species diversity dilution curve. (b) Rank abundance curve.