

**Metagenomic insights into the effects of nanobubble water on the composition
of gut microbiota in standard diet fed mice**

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1. The properties of water before and after sterilization.

Methods:

The properties of distilled water (DW) and nanobubble water (NBW) were detected before and after sterilization under room temperature. The bubble diameter and density were measured with the nanoparticle tracking analysis method using the equipment named NanoSight (NanoSight-LM10, MALVERN, UK). Zeta potential was evaluated by the zeta potential analyser (NanoZS, MALVERN, UK). pH of water was detected by the pH meter (METTLER TOLEDO FE20). Each test was performed in triplicate. The results are shown below, indicating there are no significant differences at the properties of water before and after sterilization.

Table S1 The properties of water before and after sterilization.

		pH	NB density ($\times 10^7$ particles/mL)	NB diameter (nm)	Zeta potential (mV)
DW	B.S.	6.97	n.d.	n.d.	-0.79 ± 0.05
	A.S.	6.98	n.d.	n.d.	0.13 ± 0.11
N ₂ -NBW	B.S.	6.58	4.80 ± 0.79	221.3 ± 84.1	-29.2 ± 2.77
	A.S.	6.55	3.74 ± 0.83	193.9 ± 31.3	-30.7 ± 3.47
H ₂ -NBW	B.S.	5.15	3.70 ± 1.21	293 ± 62.6	-21.0 ± 2.92
	A.S.	5.21	3.37 ± 0.71	271 ± 18.1	-20.3 ± 3.59

Data are expressed as Mean \pm SD. n.d., not detectable. B.S., before sterilization. A.S., after sterilization.

2.

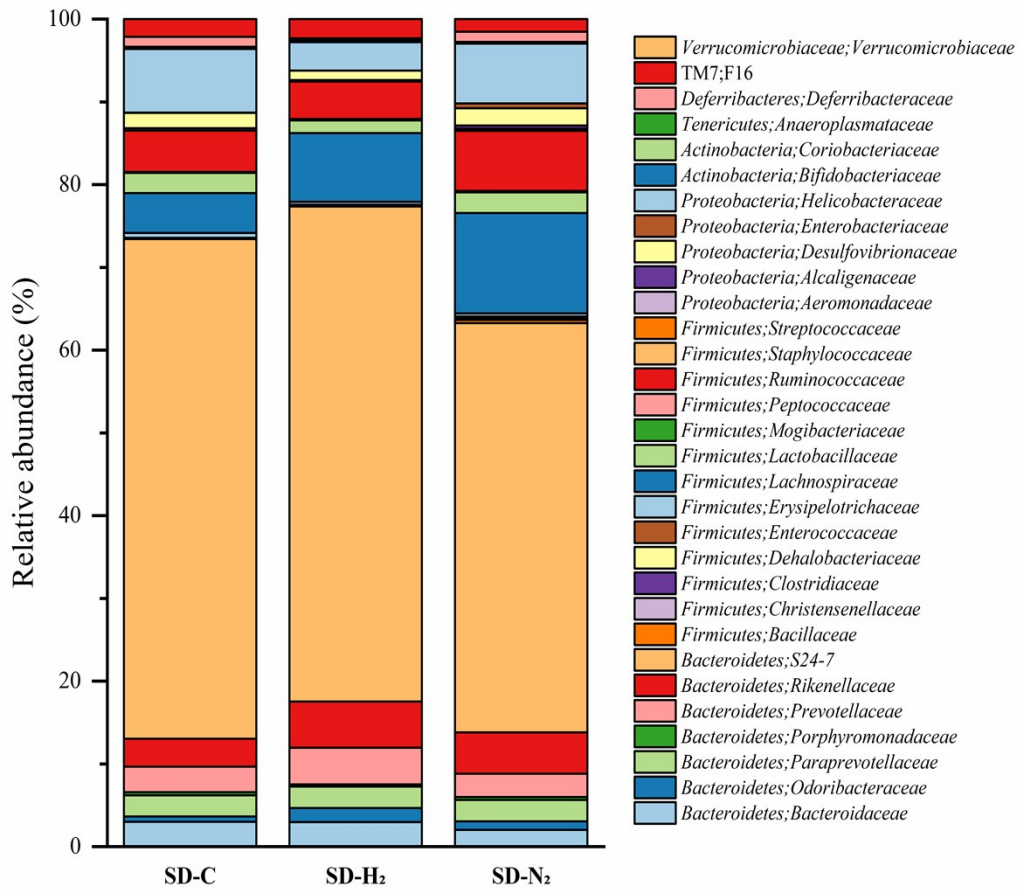


Figure S1 The composition of fecal microbiota at family level.

3.

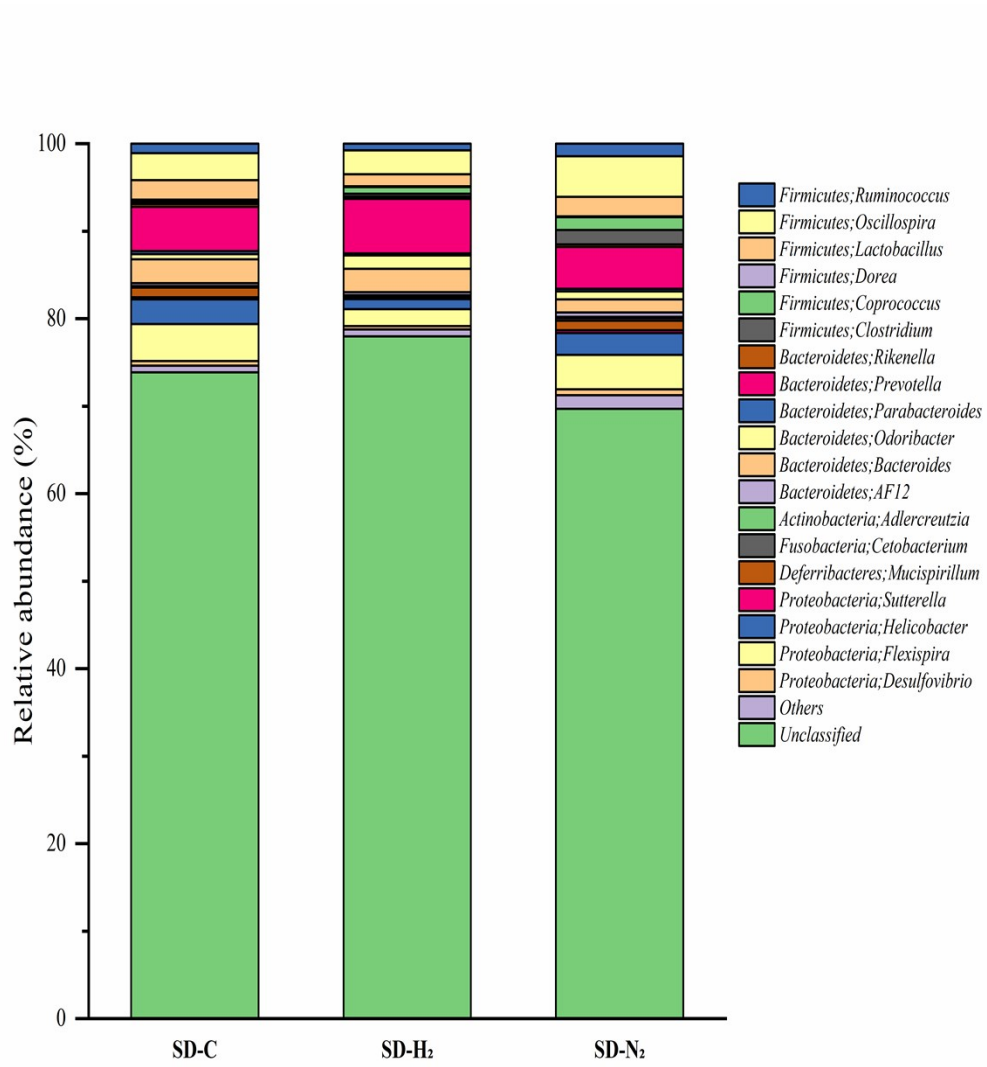


Figure S2 The composition of fecal microbiota at genus level.

4.

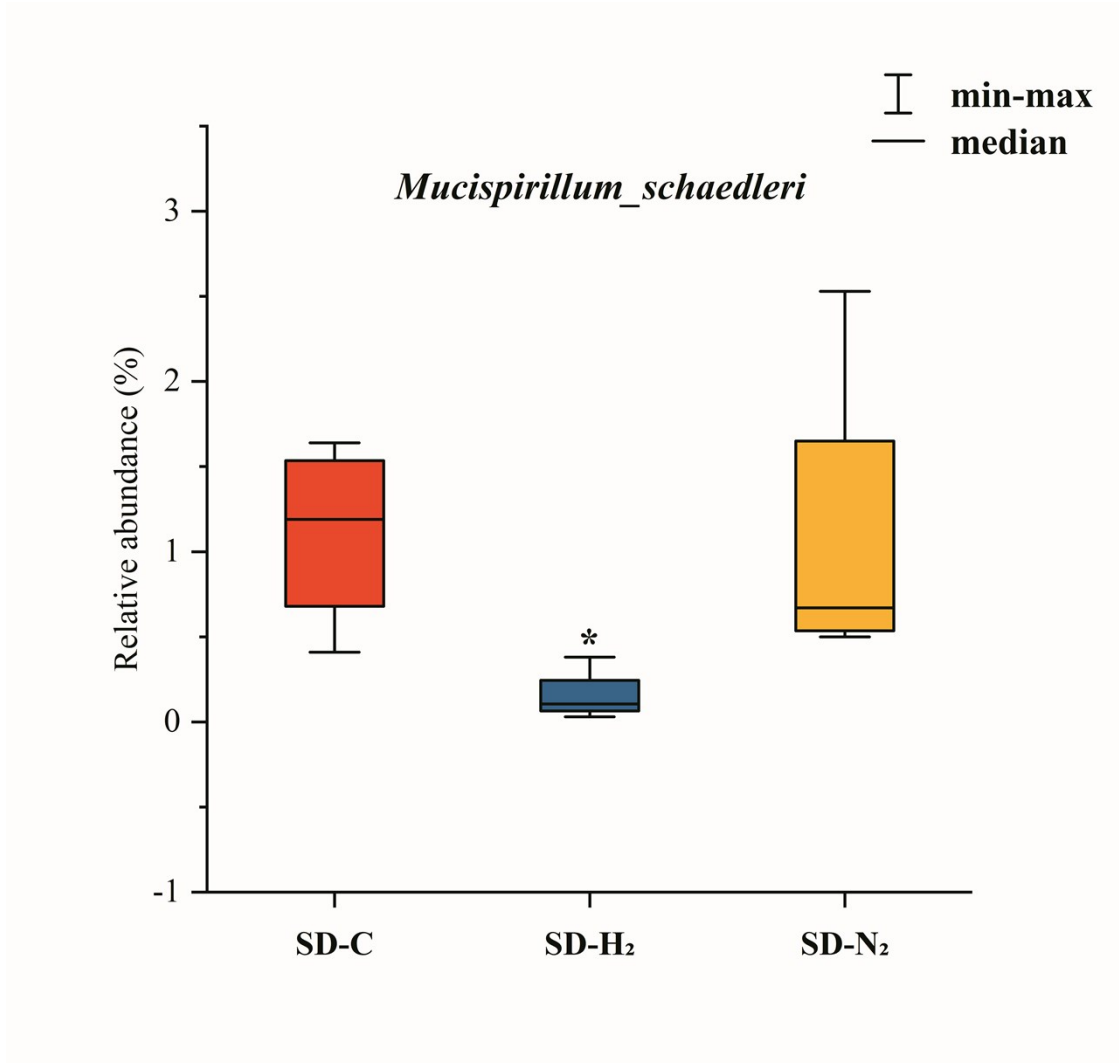


Figure S3 The relative abundance of *Mucispirillum_Schaedleri* in each groups. * $p < 0.05$ versus the SD-C group.