

**Supplementary table S1.** Primers used in the present study

Items	Primer sequence (5'- 3')	Temperature (°C)
Total bacteria	F: CGGCAACGAGCGCAACCC R: CCATTGTAGCACGTGTGTAGCC	55
<i>Ruminococcus albus</i>	F: CCCTAA AAGCAG TCTTAGTTCC R: CCTCCTTGCGGTTAGAACA	55
<i>Ruminococcus flavefaciens</i>	F: TCTGGAAACGGATGGTA R: CCTTTAAGACAGGAGTTTACAA	60
<i>Fibrobacter succinogenes</i>	F: GTTCGGAATTACTGGGCGTAAA R: CGCCTGCCCCTGAACTATC	55
<i>Butyrivibrio fibrisolvens</i>	F: ACACACCGCCCGTCACA R: TCCTTACGGTTGGGTCACAGA	58
<i>Megasphaera elsdenii</i>	F: GACCGAAACTGCGATGCTAGA R: CGCCTCAGCGTCAGTTGTC	59
<i>Streptococcus bovis</i>	F: GCCA GGCTATTTAGGTGACACTATAG R: GGGT AATACGACTCACTATAGGG	58
Methanogen	F: TTCGGTGGATCDCARAGRGC R: GBARGTCGWAWCCGTAGAATC	58
Protozoa	F: CTTGCCCCTCYAATCGTWCT R: GCTTTCGWTGGTAGTGTATT	55