Table S3. Primers and qPCR conditions for Bacterial 16S rRNA, *nirK, nirS, nosZ*, *sul1* and *sul2*

Target	Primer	Conditions	Reference
Bacterial 16S *rRNA*	341F CCTACGGGAGGCAGCAG R518 ATTACCGCGGCTGCTGG	12.5μL of qPCR SYBR® Green Master Mix,1μL each primer, 9.5μL sterile distilled water, 1 μL of template DNA 50 °C for 2 min, 95 °C for 10min, 45 cycles of 95 °C for 30s,59°C for 30 s, 72 °C for 30s	(Muyzer et al., 1993)
nirK	nirK876C ATYGGCGGVAYGGCGA nirK1040 GCCTCGATCAGRTTRTGG	12.5μL of qPCR SYBR® Green Master Mix,1μL each primer, 9.5μL sterile distilled water, 1 μL of template DNA 50 °C for 2 min, 95 °C for 10min, 40 cycles of 95 °C for 30 s, 57 °C for 15 s, 72 °C for 1min	(Henry et al., 2004)
nirS	cd3aF GTSAACGTSAAGGARACSGG R3cd GASTTCGGRTGSGTCTTGA	12.5μL of qPCR SYBR® Green Master Mix,1μL each primer, 9.5μL sterile distilled water, 1 μL of template DNA 50 °C for 2 min, 95 °C for 10min, 45 cycles of 95 °C for 30 s, 58 °C for 40 s, 72 °C for 1 min	(Yin et al., 2016)
nosZ	nosZ2F CGCRACGGCAASAAGGTSMSSGT nosZ2R CAKRTGCAKSGCRTGGCAGAA	12.5μL of qPCR SYBR® Green Master Mix,1μL each primer, 9.5μL sterile distilled water, 1 μL of template DNA 50 °C for 2 min, 95 °C for 10 min, 45 cycles of 95 °C for 30 s, 58 °C for 40 s, 72 °C for 1 min	(Yin et al., 2016)
sul1	sul1-F CACCGGAAACATCGCTGCA sul1-R AAGTTCCGCCGCAAGGCT	12.5μL of qPCR SYBR® Green Master Mix,0.5μL each primer, 10.5μL sterile distilled water, 1 μL of template DNA 50 °C for 2min; 95 °C for 15 min; 40 cycles of 95 °C for 15 s, 60 °C for 30 s, 72 °C for 30 s	(Guo et al., 2018)
sul2	sul2-F TCCGGTGGAGGCCGGTATCTGG sul2-R CGGGAATGCCATCTGCCTTGAG	12.5μL of qPCR SYBR® Green Master Mix,0.5μL each primer, 10.5μL sterile distilled water, 1 μL of template DNA 50 °C for 2min; 95 °C for 15 min; 40 cycles of 95 °C for 15 s, 60 °C for 30 s, 72 °C for 30 s	(Guo et al., 2018)

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