Supplementary Data

Table S1 Physicochemical property of the substrates and inoculums

Parameters	Swine manure	Corn straw	Inoculums (35℃)	Inoculums (55℃)
Total Solids (%)	23.59	97.05	4.15	4.92
Volatile Solids (%)	14.73	33.17	1.62	1.51
Carbon Content (%)	40.21	44.33	–	–
Nitrogen Content (%)	3.77	1.26	–	–
pH	7.08	–	7.62	8.34
Acetic acid (mg/L)	6332	–	1963.18	1418.59
Propionic acid (mg/L)	1764	–	450.615	194.165
Butyric acid (mg/L)	170	–	403.37	98.94
Valeric acid (mg/L)	104	–	128.26	43.725
Total VFAs (mg/L)	8707	–	3045.43765	1828.3069

Table S2 The primers of the determined genes

No.	Genes	Target	Primer	Sequences
1	*sul1*	Sulfonamide	sul1-F	CACCGGAAACATCGCTGCA
			sul1-R	AAGTTCCGCCGCAAGGCT
2	*sul2*		sul2-F	CTCCGATGGAGGCCGGTAT
			sul2-R	GGGAATGCCATCTGCCTTGA
3	*drfA7*		drfA7-F	AAATGGCGTAATCGGTAATG
			drfA7-R	GTGAACAGTAGACAAATGAAT
4	*qnrA*	Quinolone	qnrA-F	AGAGGATTTCTCACGCCAGG
			qnrA-R	TGCCAGGCACAGATCTTGAC
5	*qnrS*		qnrS-F	GTGAGTAATCGTATGTACTTTTGC
			qnrS-R	AAACACCTCGACTTAAGTCT
6	*parC*		parC-F	GGTGGAATATCGGTCGCCAT
			parC-R	AAACTTCGACGGCACTTTGC
7	*gyrA*		gyrA-F	CCAACAATGACCGACATCGC
			gyrA-R	GCGGTTAGATGAGCGACCTT
8	*aac(6')-Ib-cr*		aac(6')-Ib-cr-F	GTTTGAGAGGCAAGGTACCGTAA
			aac(6')-Ib-cr-R	GAATGCCTGGCGTGTTTGA
9	*cusA*	Copper	cusA-F	ATGCSACVGGYGTTGGCTG
			cus-R	CCRTTCAGYTCGGCRATRCC
10	*copA*		copA-F	TCATCGAATAGAGCCACGCC
			copA-R	CTGTGGTTGGTTATCGGCCT
11	*pcoA*		pcoA-F	CGTCTCGACGAACTTTCCTG
			pcoA-R	GGACTTCACGAAACATTCCC
12	*czcA*	Zinc	czcA	CATCCCGGTGAAGGTGAACA
			czcA	TCCTGTTCCTCGGCAACATC
13	*czcB*		czcB	AGATCGGACACGACGAACAC
			czcB	GAAGACCTTGTGGGAGGAGC
14	*czcC*		czcC	CGATGTCCGCATACGACTGA
			czcC	GCAAGTTCGGCTTTCTCGAC
15	*zntA*		zntA	GACTCCTGACAATCACGGCA
			zntA	GCCGGAGACGTTTTCAGAGA
16	*intI1*	Mobile genetic element	intI1-F	CGAACGAGTGGCGGAGGGTG
			intI1-R	TACCCGAGAGCTTGGCACCCA
17	16s rRNA	Total bacteria	341F	CCTACGGGRSGCAGCAG
			806R	GGACTACVVGGGTATCTAATC

Table S3 The kinetic parameters of methanogenesis in AD

Parameters	M-Co	M-NOR	M-SMX	T-Co	T-NOR	T-SMX
Cumulative CH_4 production (mL)	1192.27	922.95	1220.64	3586.93	2511.99	4408.62
The lag phase of CH_4 production (d)	3.1	6.98	4.61	–0.98	5.11	2.89
Maximum CH_4 production rate (mL/d)	120.47	88.59	103.60	621.93	492.72	681.68
Correlation coefficient (R^2)	0.9312	0.9740	0.9831	0.9856	0.9972	0.9869

Table S4 The kinetic parameters of antibiotic degradation in AD

Parameters	First-order reaction rate constant (k)	Half-life of degradation ($T_{1/2}$)	Correlation coefficient (R2)
M-NOR	0.0356	19.47	0.8696
M-SMX	0.8517	2.81	0.9816
T-NOR	0.1216	7.53	0.9082
T-SMX	2.2837	2.30	0.9969

Table S5 Microbial community Alpha diversity indices: observed species, Simpson, Chao1 and Shannon of all samples

Treatments	Time	Observed species	Simpson	Chao1	Shannon
M-Control	Day 0	397	397	536	3.75
	Day12	427	427	538	4.71
	Day30	485	485	624	4.59
	Day60	457	457	618	3.76
M-NOR	Day 0	397	397	536	3.75
	Day12	425	425	542	4.75
	Day30	443	443	539	4.33
	Day60	392	392	525	3.90
M-SMX	Day 0	397	397	536	3.75
	Day12	447	447	607	4.79
	Day30	446	446	612	4.52
	Day60	422	422	514	4.09
T-Control	Day 0	590	590	652	6.16
	Day12	376	376	463	4.92
	Day30	351	351	439	3.88
	Day60	273	273	334	3.42
T-NOR	Day 0	590	590	652	6.16
	Day12	373	373	476	4.69
	Day30	331	331	406	4.23
	Day60	281	281	334	4.18
T-SMX	Day 0	590	590	652	6.16
	Day12	368	368	544	4.78
	Day30	348	348	414	3.97
	Day60	320	320	407	3.94

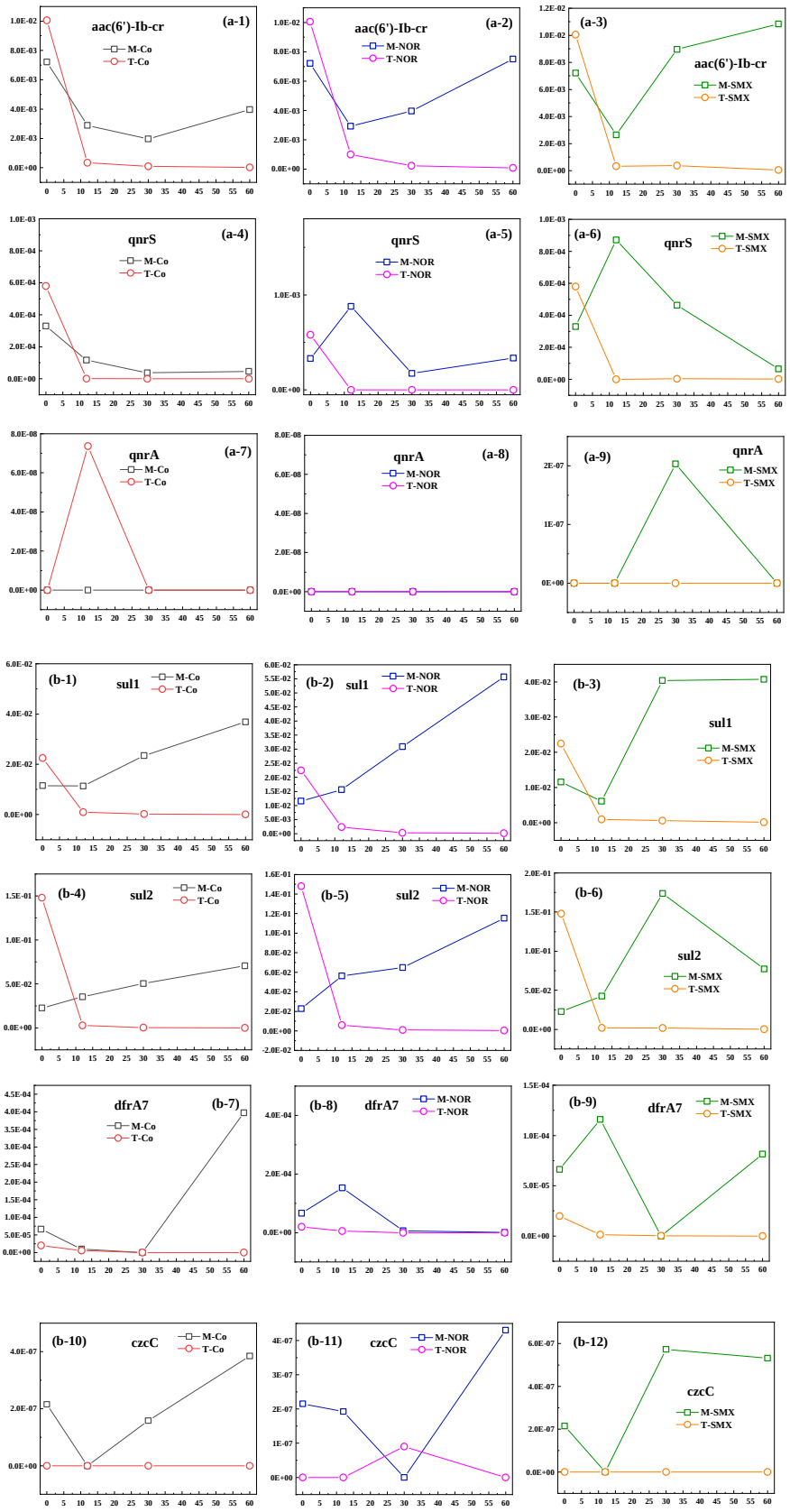

Fig. S1 The change in MRGs during mesophilic and thermophilic AD

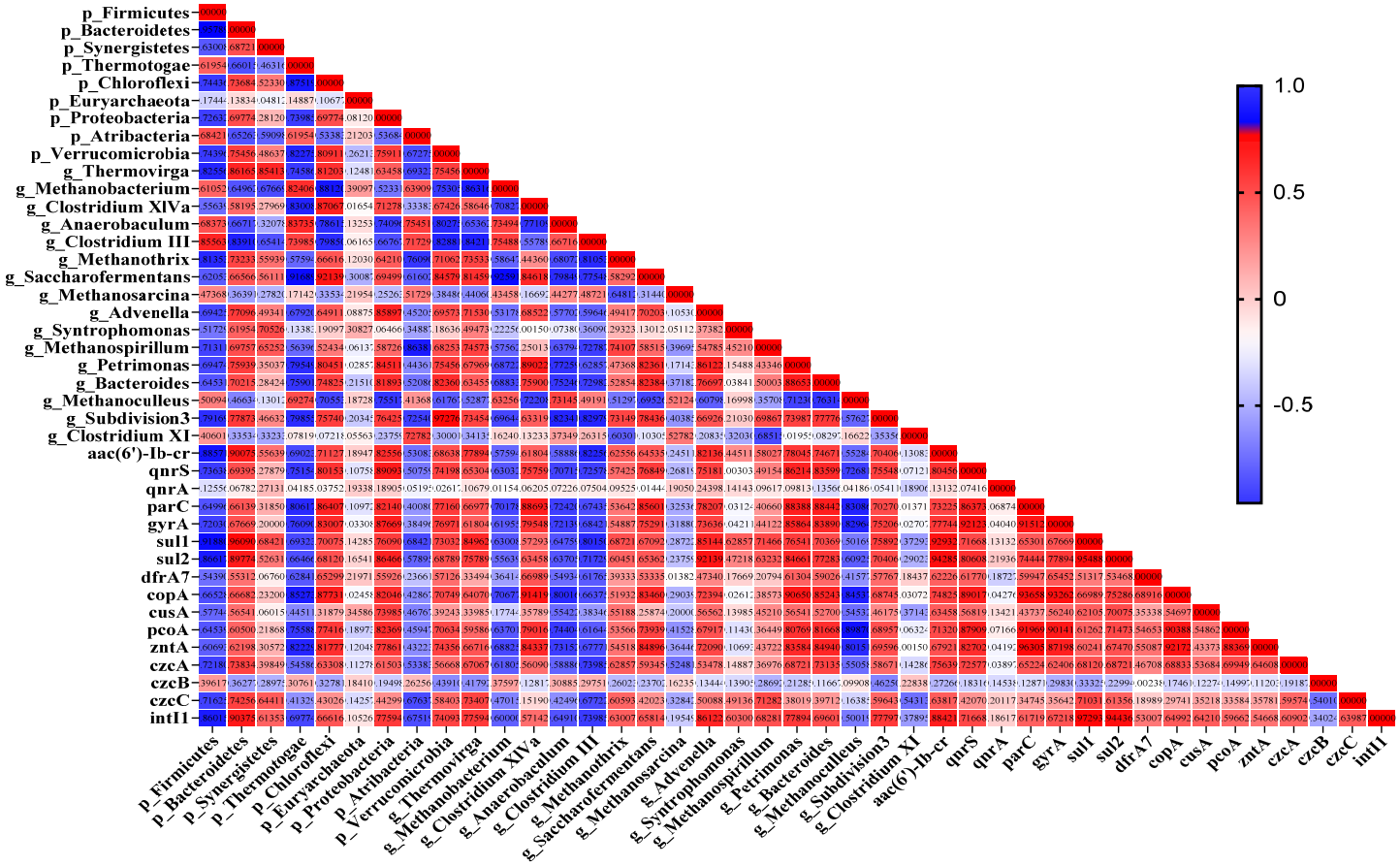

Fig. S2 The correlation coefficients among ARGs, MRGs, *intI1* abundances and phylum communities based on Spearman correlation