

Supplemental Figures:

Table S1. Numbers of OTUs and taxa, diversity and community richness indices in different seasons.

Sample name	OTUs	Shannon Index	Simpson Index	Chao1	ACE	Taxa number
spring	256448	6.2	0.934	973.077	994.402	801
summer	208240	5.6	0.863	786.325	797.225	672
autumn	173176	7.4	0.943	931.947	920.455	886
winter	208944	4.1	0.775	852.994	905.44	671

Table S2. Microbial community compositions at phylum level.

	Total taxonomy (%)	Spring	Summer	Autumn	Winter
Proteobacteria	57.9	52.2	51.2	38.6	89.7
Bacteroidetes	13.9	19.9	15.0	13.9	6.9
Firmicutes	11.0	2.0	18.6	22.6	1.1
Unidentified Bacteria	6.4	22.5	1.7	0.6	0.6
Actinobacteria	4.3	0.6	4.4	12.0	0.3
Acidobacteria	1.1	0.1	1.3	3.0	0.1
Fusobacteria	1.1	0.3	0.4	3.0	0.6
Spirochaetes	0.7	0.2	2.3	0.4	0.0
Chloroflexi	0.6	0.0	0.8	1.5	0.0
Cyanobacteria	0.6	1.2	0.6	0.5	0.1
others	2.4	1.0	3.7	3.9	0.6

Table S3. Microbial community compositions at class level.

	Total taxonomy (%)	Spring	Summer	Autumn	Winter
<i>Gammaproteobacteria</i>	40.9	82.4	29.9	40.7	10.7
<i>Alphaproteobacteria</i>	14.2	6.8	17.5	7.3	25.4
<i>Bacteroidia</i>	13.9	6.9	19.9	15.0	13.7
<i>Clostridia</i>	7.0	0.9	1.9	11.7	13.6
Unidentified Bacteria	6.4	0.6	22.5	1.7	0.6
<i>Bacilli</i>	3.5	0.1	0.0	6.1	7.7
<i>Deltaproteobacteria</i>	2.7	0.4	4.7	3.2	2.4
<i>Actinobacteria</i>	2.4	0.1	0.4	2.3	6.7
<i>Fusobacteriia</i>	1.1	0.6	0.3	0.4	3.0
others	7.9	1.2	2.9	11.6	16.2