

File Name: Supplementary Data 1

Description: The meta info of all the soil metagenomic samples

File Name: Supplementary Data 2

Description: The meta info of metagenomic samples for other habitats

File Name: Supplementary Data 3

Description: List for Rank I ARGs gene

File Name: Supplementary Data 4

Description: Pairwise Adonis analysis of Total ARGs

File Name: Supplementary Data 5

Description: Pairwise Adonis analysis of Rank I ARGs

File Name: Supplementary Data 6

Description: Representative ARGs (type subtype and gene)

File Name: Supplementary Data 7

Description: List for prokaryotic pathogens

File Name: Supplementary Data 8

Description: The info of the isolation *E.coli* genome

File Name: Supplementary Data 9

Description: Detailed p value and T stat for the copy number for Rank I ARGs and MRank I ARGs in *E.coli* genome

File Name: Supplementary Data 10

Description: Detailed p value and T stat for the copy number for the richness of Rank I ARGs and MRankI ARGs in *E.coli* genome

File Name: Supplementary Data 11

Description: Detailed p value and T stat for the copy number for the FEAST analysis

File Name: Supplementary Data 12

Description: Detailed p value and T stat for the copy number for the connectedness
(*eptA*)

File Name: Supplementary Data 13

Description: Detailed p value and T stat for the copy number for the sequence sharing
events with SNPs over 1000