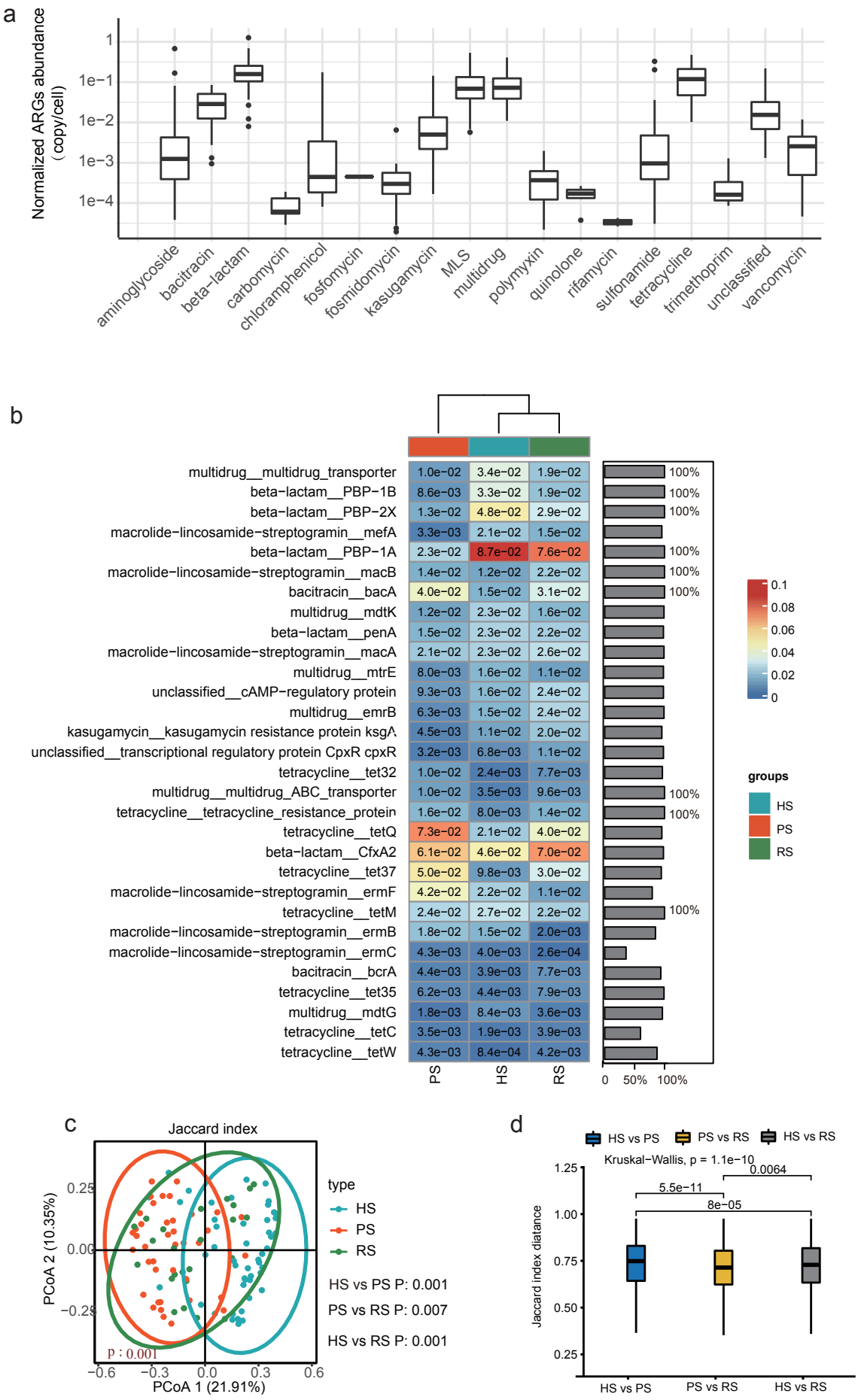
a
Normalized ARGs abundance (copy/cell)
1
1e−1
1e−2
1e−3
1e−4
aminoglycoside
bacitracin
beta−lactam
carbomycin
chloramphenicol
fosfomycin
fosmidomycin
kasugamycin
MLS
multidrug
polymyxin
quinolone
rifamycin
sulfonamide
tetracycline
trimethoprim
unclassified
vancomycin
b
multidrug__multidrug_transporter 1.0e−02 3.4e−02 1.9e−02 100%
beta−lactam__PBP−1B 8.6e−03 3.3e−02 1.9e−02 100%
beta−lactam__PBP−2X 1.3e−02 4.8e−02 2.9e−02 100%
macrolide−lincosamide−streptogramin__mefA 3.3e−03 2.1e−02 1.5e−02
beta−lactam__PBP−1A 2.3e−02 8.7e−02 7.6e−02 100%
macrolide−lincosamide−streptogramin__macB 1.4e−02 1.2e−02 2.2e−02 100%
bacitracin__bacA 4.0e−02 1.5e−02 3.1e−02 100%
multidrug__mdtK 1.2e−02 2.3e−02 1.6e−02
beta−lactam__penA 1.5e−02 2.3e−02 2.2e−02
macrolide−lincosamide−streptogramin__macA 2.1e−02 2.3e−02 2.6e−02
multidrug__mtrE 8.0e−03 1.6e−02 1.1e−02
unclassified__cAMP−regulatory protein 9.3e−03 1.6e−02 2.4e−02
multidrug__emrB 6.3e−03 1.5e−02 2.4e−02
kasugamycin__kasugamycin resistance protein ksgA 4.5e−03 1.1e−02 2.0e−02
unclassified__transcriptional regulatory protein CpxR cpxR 3.2e−03 6.8e−03 1.1e−02
tetracycline__tet32 1.0e−02 2.4e−03 7.7e−03
multidrug__multidrug_ABC_transporter 1.0e−02 3.5e−03 9.6e−03 100%
tetracycline__tetracycline_resistance_protein 1.6e−02 8.0e−03 1.4e−02 100%
tetracycline__tetQ 7.3e−02 2.1e−02 4.0e−02
beta−lactam__CfxA2 6.1e−02 4.6e−02 7.0e−02
tetracycline__tet37 5.0e−02 9.8e−03 3.0e−02
macrolide−lincosamide−streptogramin__ermF 4.2e−02 2.2e−02 1.1e−02
tetracycline__tetM 2.4e−02 2.7e−02 2.2e−02 100%
macrolide−lincosamide−streptogramin__ermB 1.8e−02 1.5e−02 2.0e−03
macrolide−lincosamide−streptogramin__ermC 4.3e−03 4.0e−03 2.6e−04
bacitracin__bcrA 4.4e−03 3.9e−03 7.7e−03
tetracycline__tet35 6.2e−03 4.4e−03 7.9e−03
multidrug__mdtG 1.8e−03 8.4e−03 3.6e−03
tetracycline__tetC 3.5e−03 1.9e−03 3.9e−03
tetracycline__tetW 4.3e−03 8.4e−04 4.2e−03
PS HS RS
0 50% 100%
0.1
0.08
0.06
0.04
0.02
0
groups
HS
PS
RS
c
Jaccard index
PCoA 2 (10.35%)
PCoA 1 (21.91%)
0.25
0.00
−0.25
−0.6 −0.3 0.0 0.3 0.6
p : 0.001
type
HS
PS
RS
HS vs PS P: 0.001
PS vs RS P: 0.007
HS vs RS P: 0.001
d
HS vs PS
PS vs RS
HS vs RS
Kruskal−Wallis, p = 1.1e−10
0.0064
5.5e−11
8e−05
Jaccard index diatance
1.25
1.00
0.75
0.50
0.25
HS vs PS
PS vs RS
HS vs RS

Figure.S2