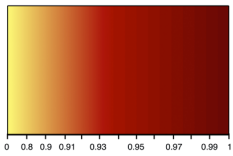
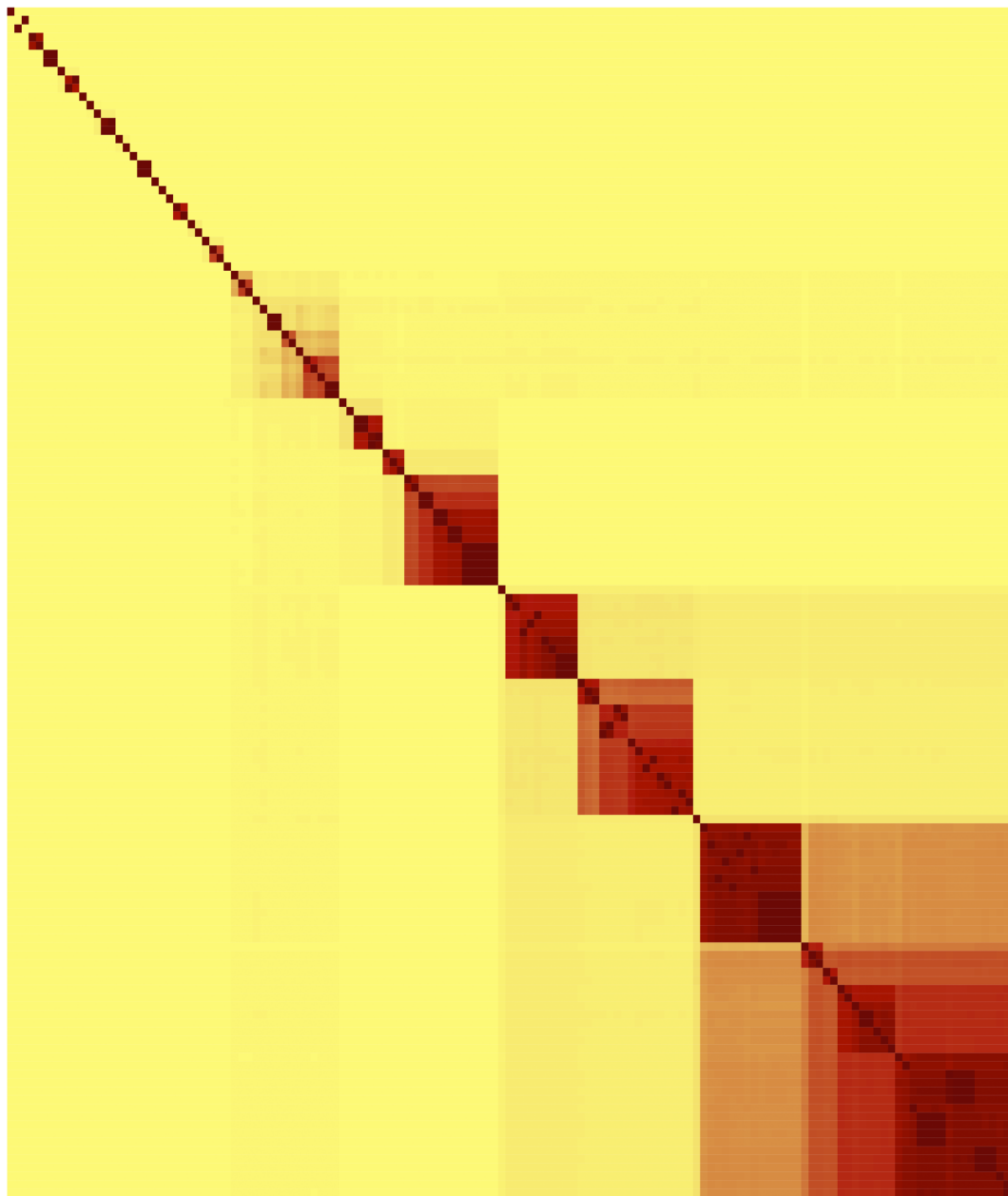


# Supplementary Figure 11. Heatmap based on the ANI matrix calculated by pyani for data set C .

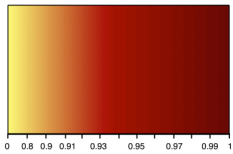


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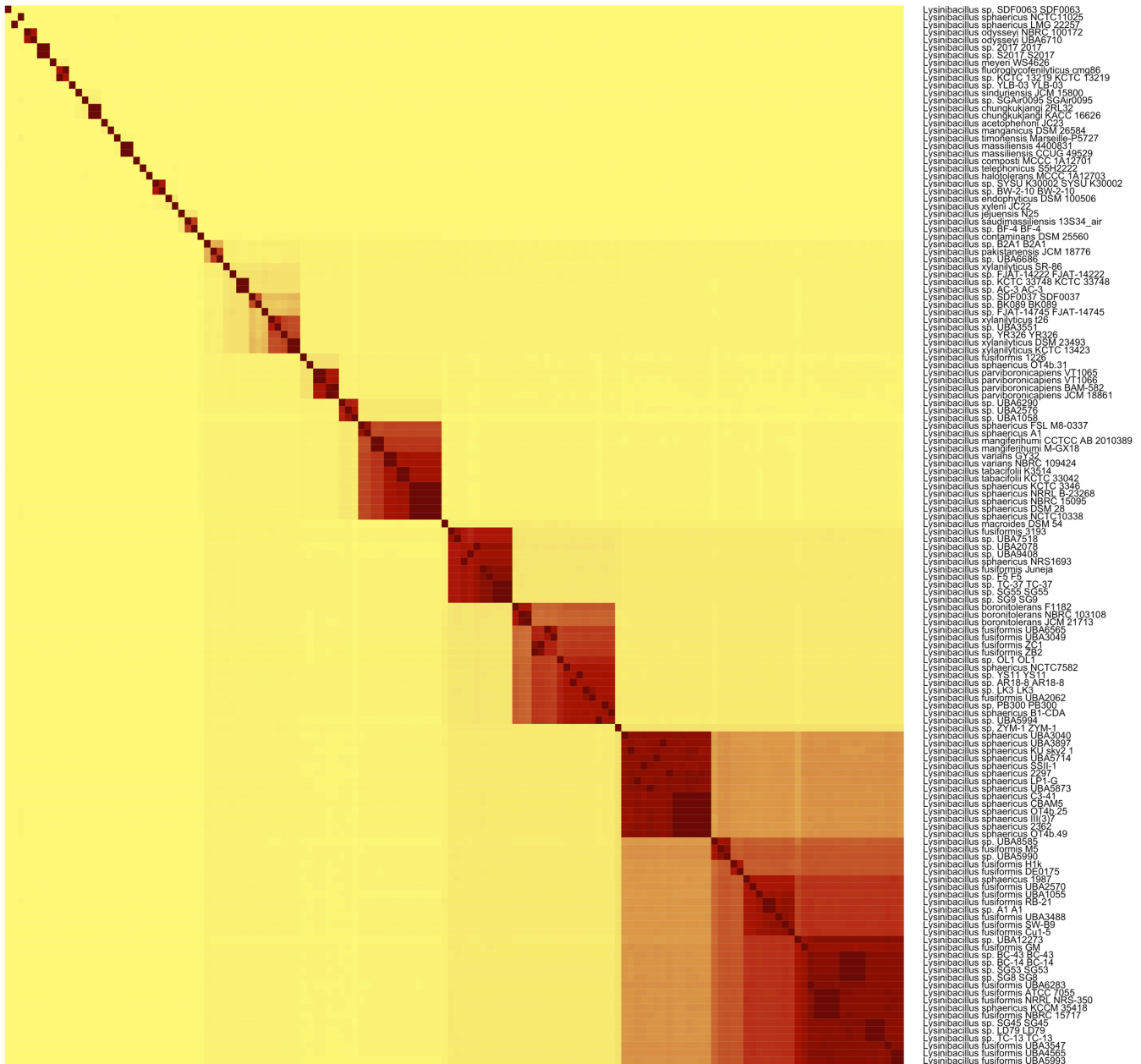


- Lysinibacillus sp. SDF0063 SDF0063
- Lysinibacillus sphaericus NCTC11025
- Lysinibacillus sphaericus IMG 22257
- Lysinibacillus odyssey NBRC 100172
- Lysinibacillus odyssey UBA6710
- Lysinibacillus sp. S2017 S2017
- Lysinibacillus meyeri W6456
- Lysinibacillus fluordivolemicus omp86
- Lysinibacillus sp. KCTC 13219 KCTC 13219
- Lysinibacillus sp. YLB-03 YLB-03
- Lysinibacillus sinensis ACM 15800
- Lysinibacillus sp. SC0005 SGAir0095
- Lysinibacillus chungkukiangi ZAC-2
- Lysinibacillus chungkukiangi DSM 16626
- Lysinibacillus acetophenoni DSM 26584
- Lysinibacillus timonensis Marselle-P5727
- Lysinibacillus massiliensis 440031
- Lysinibacillus massiliensis CCLUG 49529
- Lysinibacillus composti MCC-1A-2701
- Lysinibacillus telephonicus SSI-17703
- Lysinibacillus halotolerans NCTC 33748
- Lysinibacillus sp. BW-2-10 BW-2-10
- Lysinibacillus endophyticus DSM 100506
- Lysinibacillus xyleni JCT29
- Lysinibacillus jejuensis H25
- Lysinibacillus saulimassiliensis 13S34\_air
- Lysinibacillus sp. BF-1 BF-1
- Lysinibacillus comarogens DSM 25560
- Lysinibacillus sp. BZA1 BZA1
- Lysinibacillus pakistensis JCM 18776
- Lysinibacillus sp. UBA6686
- Lysinibacillus xylini SR-86
- Lysinibacillus sp. FJAT-14722 FJAT-14722
- Lysinibacillus sp. KCTC 33748 KCTC 33748
- Lysinibacillus sp. AC-3 AC-3
- Lysinibacillus sp. SDF0037 SDF0037
- Lysinibacillus sp. BK089 BK089
- Lysinibacillus sp. FJAT-14745 FJAT-14745
- Lysinibacillus xylini DSM 23493
- Lysinibacillus xylini YR326
- Lysinibacillus xylini DSM 23493
- Lysinibacillus xylini KCTC 13423
- Lysinibacillus fusiformis 1266
- Lysinibacillus sphaericus OT4b.31
- Lysinibacillus parviboronicapiens VT1065
- Lysinibacillus parviboronicapiens VT1066
- Lysinibacillus parviboronicapiens B4M-592
- Lysinibacillus parviboronicapiens JCM 18861
- Lysinibacillus sp. UBA6250
- Lysinibacillus sp. UBA2576
- Lysinibacillus sp. UBA1059
- Lysinibacillus sphaericus FSL M8-0337
- Lysinibacillus sphaericus A1
- Lysinibacillus mangifentum CCTCC AB 2010389
- Lysinibacillus mangifentum M-GX18
- Lysinibacillus varians OY1
- Lysinibacillus varians NBRC 109424
- Lysinibacillus tabacifolii KCTC 33042
- Lysinibacillus sphaericus KCTC 3345
- Lysinibacillus sphaericus NRR 8345268
- Lysinibacillus sphaericus NBRC 15095
- Lysinibacillus sphaericus NCTC10338
- Lysinibacillus naeroides DSM 154
- Lysinibacillus fusiformis 3193
- Lysinibacillus sp. UBA718
- Lysinibacillus sp. UBA2078
- Lysinibacillus sp. UBA9408
- Lysinibacillus sphaericus NRS1693
- Lysinibacillus fusiformis Juneja
- Lysinibacillus sp. FJ
- Lysinibacillus sp. IC-37 IC-37
- Lysinibacillus sp. S39 S39
- Lysinibacillus boronitolerans F1182
- Lysinibacillus boronitolerans NBRC 103108
- Lysinibacillus boronitolerans JCM 21713
- Lysinibacillus fusiformis UBA3049
- Lysinibacillus fusiformis KC
- Lysinibacillus fusiformis ZB2
- Lysinibacillus sp. OLI OLI
- Lysinibacillus sphaericus NCTC7582
- Lysinibacillus sp. S11 S11
- Lysinibacillus sp. AR18-8 AR18-8
- Lysinibacillus sp. LK3 LK3
- Lysinibacillus fusiformis UBA2062
- Lysinibacillus sp. PB300 PB300
- Lysinibacillus sphaericus 61-CDA
- Lysinibacillus sp. UBA5994
- Lysinibacillus sp. ZYM-1 ZYM-1
- Lysinibacillus sphaericus UBA3040
- Lysinibacillus sphaericus UBA3691
- Lysinibacillus sphaericus K8471
- Lysinibacillus sphaericus UBA5714
- Lysinibacillus sphaericus S21
- Lysinibacillus sphaericus 2297
- Lysinibacillus sphaericus E1-G
- Lysinibacillus sphaericus UBA5873
- Lysinibacillus sphaericus CBAM5
- Lysinibacillus sphaericus OT4b.25
- Lysinibacillus sphaericus II310
- Lysinibacillus sphaericus 2362
- Lysinibacillus sphaericus OT4b.49
- Lysinibacillus sp. UBA6585
- Lysinibacillus fusiformis M5
- Lysinibacillus sp. UBA5990
- Lysinibacillus fusiformis H18
- Lysinibacillus fusiformis DE0175
- Lysinibacillus sphaericus 1987
- Lysinibacillus fusiformis UBA2570
- Lysinibacillus fusiformis UBA1055
- Lysinibacillus fusiformis 42-1
- Lysinibacillus sp. A1 A1
- Lysinibacillus fusiformis UBA3488
- Lysinibacillus fusiformis SW-B9
- Lysinibacillus fusiformis S41-5
- Lysinibacillus sp. UBA1279
- Lysinibacillus fusiformis SV
- Lysinibacillus sp. BC-43 BC-43
- Lysinibacillus sp. BC-14 BC-14
- Lysinibacillus sp. S39 S39
- Lysinibacillus sp. S38 S38
- Lysinibacillus fusiformis UBA6283
- Lysinibacillus fusiformis ATCC 7055
- Lysinibacillus sphaericus NRS1693
- Lysinibacillus sphaericus KCTC 152418
- Lysinibacillus fusiformis NBRC 15717
- Lysinibacillus sp. S38 S38
- Lysinibacillus sp. LD79 LD79
- Lysinibacillus sp. IC-13 IC-13
- Lysinibacillus fusiformis UBA3547
- Lysinibacillus fusiformis UBA6565
- Lysinibacillus fusiformis UBA5993

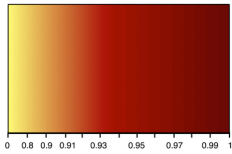
# Supplementary Figure 12. Heatmap based on the ANI matrix calculated by FastANI for data set C.



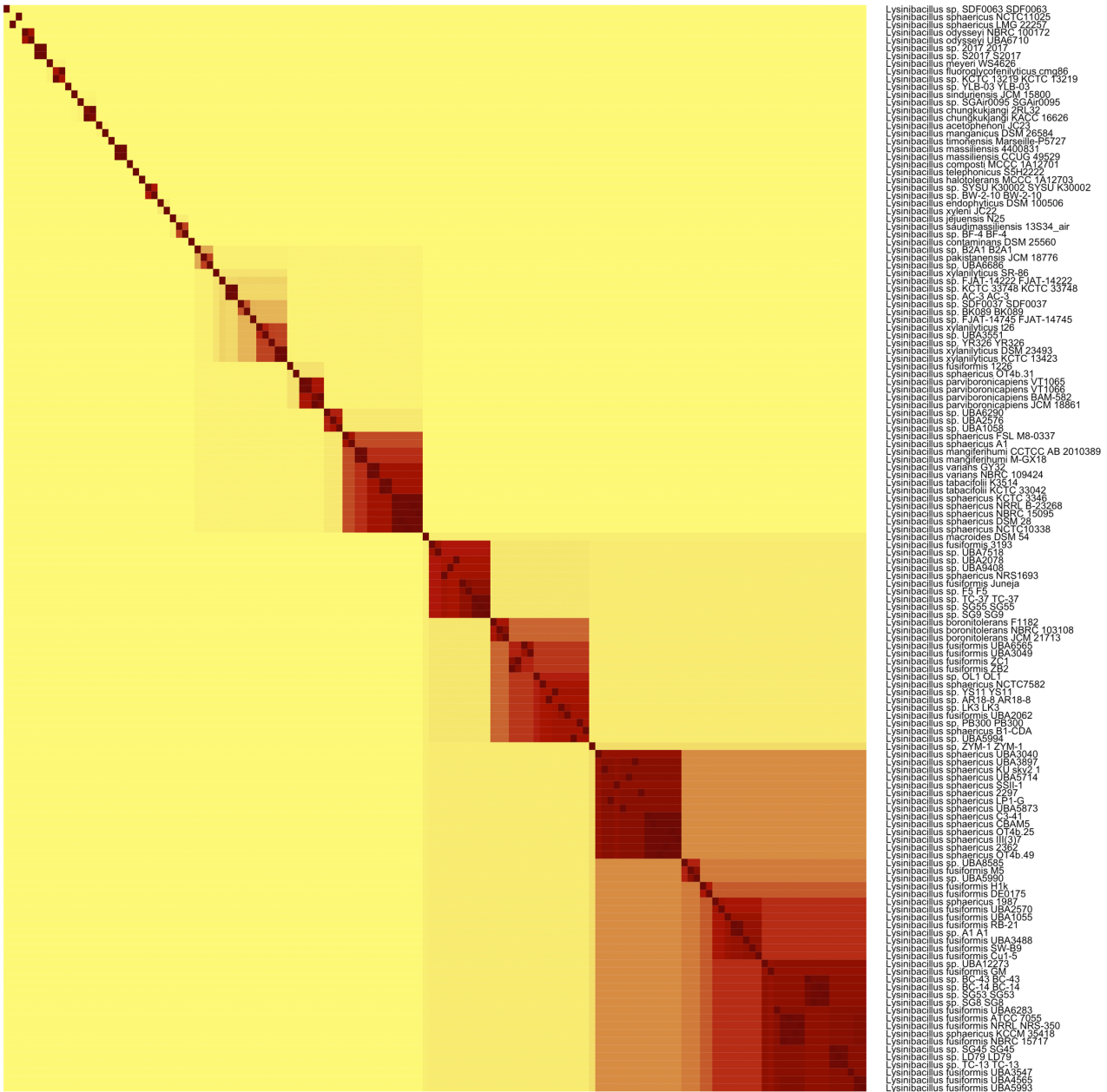
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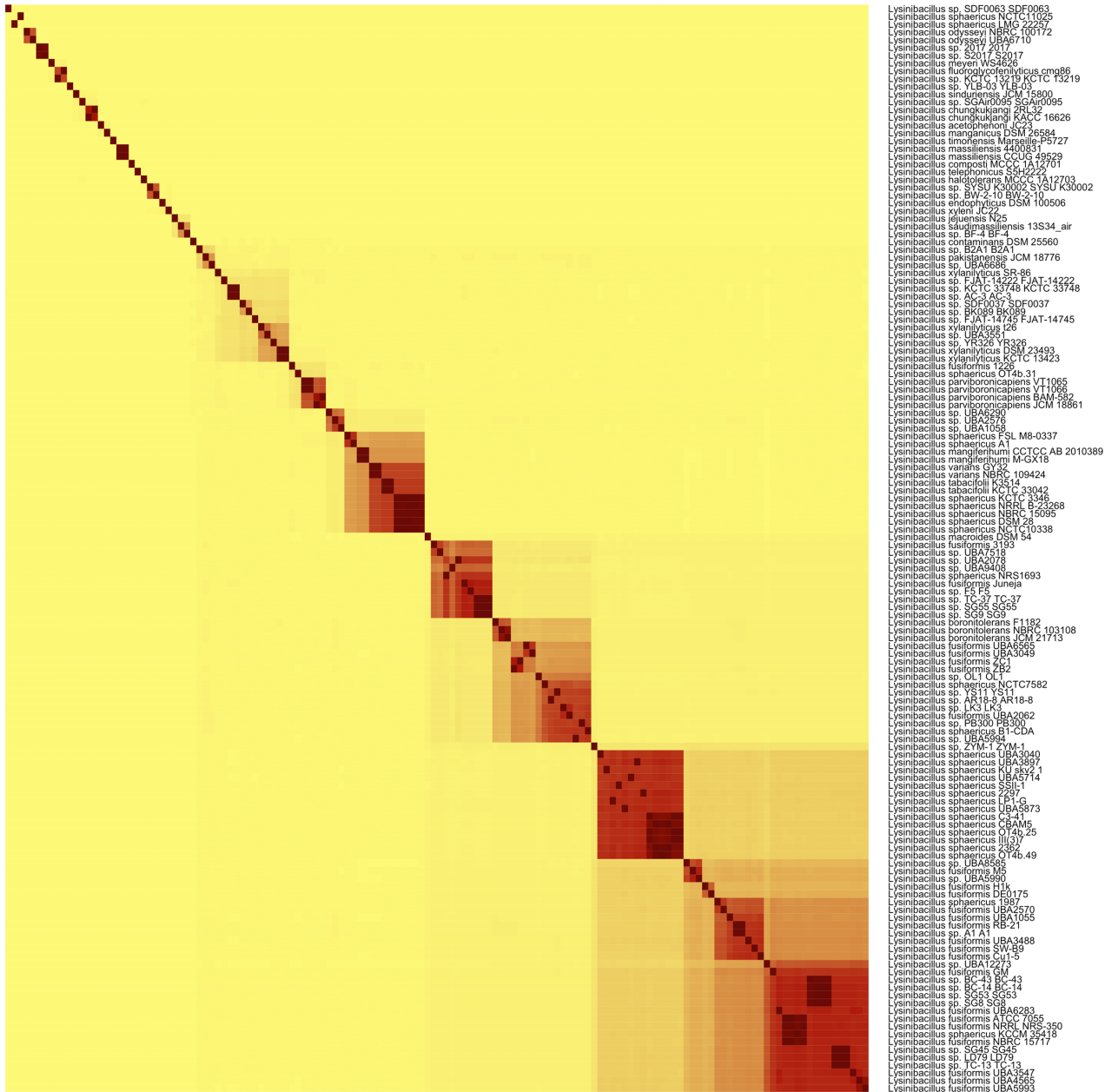
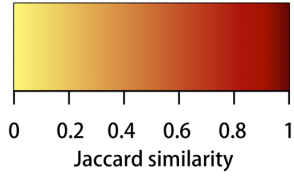
# Supplementary Figure 13. Heatmap based on the ANI matrix calculated by LINflow for data set C.



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# Supplementary Figure 14. Heatmap based on the Jaccard similarity matrix calculated by sourmash with k=21 for data set C.





# Supplementary Figure 15. Heatmap based on the Jaccard similarity matrix calculated by sourmash with k=51 for data set C.

