

Supplementary file 2. The exact commands used to process the reads.

```
##vsearch.vsearch.exe merging pairs new
vsearch.vsearch.exe --fastq_mergepairs AW10_S10_L001_R1_001.FASTQ --
reverse AW10_S10_L001_R2_001.FASTQ --relabel AW10. --fastqout
AW10.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW11_S11_L001_R1_001.FASTQ --
reverse AW11_S11_L001_R2_001.FASTQ --relabel AW11. --fastqout
AW11.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW12_S12_L001_R1_001.FASTQ --
reverse AW12_S12_L001_R2_001.FASTQ --relabel AW12. --fastqout
AW12.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW13_S13_L001_R1_001.FASTQ --
reverse AW13_S13_L001_R2_001.FASTQ --relabel AW13. --fastqout
AW13.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW14_S14_L001_R1_001.FASTQ --
reverse AW14_S14_L001_R2_001.FASTQ --relabel AW14. --fastqout
AW14.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW15_S15_L001_R1_001.FASTQ --
reverse AW15_S15_L001_R2_001.FASTQ --relabel AW15. --fastqout
AW15.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW16_S16_L001_R1_001.FASTQ --
reverse AW16_S16_L001_R2_001.FASTQ --relabel AW16. --fastqout
AW16.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW17_S17_L001_R1_001.FASTQ --
reverse AW17_S17_L001_R2_001.FASTQ --relabel AW17. --fastqout
AW17.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW18_S18_L001_R1_001.FASTQ --
reverse AW18_S18_L001_R2_001.FASTQ --relabel AW18. --fastqout
AW18.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW19_S19_L001_R1_001.FASTQ --
reverse AW19_S19_L001_R2_001.FASTQ --relabel AW19. --fastqout
AW19.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW1_S1_L001_R1_001.FASTQ --reverse
AW1_S1_L001_R2_001.FASTQ --relabel AW1. --fastqout AW1.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW20_S20_L001_R1_001.FASTQ --
reverse AW20_S20_L001_R2_001.FASTQ --relabel AW20. --fastqout
AW20.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW21_S21_L001_R1_001.FASTQ --
reverse AW21_S21_L001_R2_001.FASTQ --relabel AW21. --fastqout
AW21.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW22_S22_L001_R1_001.FASTQ --
reverse AW22_S22_L001_R2_001.FASTQ --relabel AW22. --fastqout
AW22.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW23_S23_L001_R1_001.FASTQ --
reverse AW23_S23_L001_R2_001.FASTQ --relabel AW23. --fastqout
AW23.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW24_S24_L001_R1_001.FASTQ --
reverse AW24_S24_L001_R2_001.FASTQ --relabel AW24. --fastqout
AW24.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW25_S25_L001_R1_001.FASTQ --
reverse AW25_S25_L001_R2_001.FASTQ --relabel AW25. --fastqout
AW25.vmerged.fq
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vsearch.vsearch.exe --fastq_mergepairs AW26_S26_L001_R1_001.FASTQ --
reverse AW26_S26_L001_R2_001.FASTQ --relabel AW26. --fastqout
AW26.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW27_S27_L001_R1_001.FASTQ --
reverse AW27_S27_L001_R2_001.FASTQ --relabel AW27. --fastqout
AW27.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW28_S28_L001_R1_001.FASTQ --
reverse AW28_S28_L001_R2_001.FASTQ --relabel AW28. --fastqout
AW28.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW29_S29_L001_R1_001.FASTQ --
reverse AW29_S29_L001_R2_001.FASTQ --relabel AW29. --fastqout
AW29.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW2_S2_L001_R1_001.FASTQ --reverse
AW2_S2_L001_R2_001.FASTQ --relabel AW2. --fastqout AW2.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW30_S30_L001_R1_001.FASTQ --
reverse AW30_S30_L001_R2_001.FASTQ --relabel AW30. --fastqout
AW30.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW31_S31_L001_R1_001.FASTQ --
reverse AW31_S31_L001_R2_001.FASTQ --relabel AW31. --fastqout
AW31.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW32_S32_L001_R1_001.FASTQ --
reverse AW32_S32_L001_R2_001.FASTQ --relabel AW32. --fastqout
AW32.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW33_S33_L001_R1_001.FASTQ --
reverse AW33_S33_L001_R2_001.FASTQ --relabel AW33. --fastqout
AW33.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW34_S34_L001_R1_001.FASTQ --
reverse AW34_S34_L001_R2_001.FASTQ --relabel AW34. --fastqout
AW34.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW35_S35_L001_R1_001.FASTQ --
reverse AW35_S35_L001_R2_001.FASTQ --relabel AW35. --fastqout
AW35.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW36_S36_L001_R1_001.FASTQ --
reverse AW36_S36_L001_R2_001.FASTQ --relabel AW36. --fastqout
AW36.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW37_S37_L001_R1_001.FASTQ --
reverse AW37_S37_L001_R2_001.FASTQ --relabel AW37. --fastqout
AW37.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW38_S38_L001_R1_001.FASTQ --
reverse AW38_S38_L001_R2_001.FASTQ --relabel AW38. --fastqout
AW38.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW39_S39_L001_R1_001.FASTQ --
reverse AW39_S39_L001_R2_001.FASTQ --relabel AW39. --fastqout
AW39.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW3_S3_L001_R1_001.FASTQ --reverse
AW3_S3_L001_R2_001.FASTQ --relabel AW3. --fastqout AW3.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW40_S40_L001_R1_001.FASTQ --
reverse AW40_S40_L001_R2_001.FASTQ --relabel AW40. --fastqout
AW40.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW41_S41_L001_R1_001.FASTQ --
reverse AW41_S41_L001_R2_001.FASTQ --relabel AW41. --fastqout
AW41.vmerged.fq
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```
vsearch.vsearch.exe --fastq_mergepairs AW42_S42_L001_R1_001.FASTQ --
reverse AW42_S42_L001_R2_001.FASTQ --relabel AW42. --fastqout
AW42.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW43_S43_L001_R1_001.FASTQ --
reverse AW43_S43_L001_R2_001.FASTQ --relabel AW43. --fastqout
AW43.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW44_S44_L001_R1_001.FASTQ --
reverse AW44_S44_L001_R2_001.FASTQ --relabel AW44. --fastqout
AW44.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW45_S45_L001_R1_001.FASTQ --
reverse AW45_S45_L001_R2_001.FASTQ --relabel AW45. --fastqout
AW45.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW46_S46_L001_R1_001.FASTQ --
reverse AW46_S46_L001_R2_001.FASTQ --relabel AW46. --fastqout
AW46.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW47_S47_L001_R1_001.FASTQ --
reverse AW47_S47_L001_R2_001.FASTQ --relabel AW47. --fastqout
AW47.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW48_S48_L001_R1_001.FASTQ --
reverse AW48_S48_L001_R2_001.FASTQ --relabel AW48. --fastqout
AW48.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW49_S49_L001_R1_001.FASTQ --
reverse AW49_S49_L001_R2_001.FASTQ --relabel AW49. --fastqout
AW49.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW4_S4_L001_R1_001.FASTQ --reverse
AW4_S4_L001_R2_001.FASTQ --relabel AW4. --fastqout AW4.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW50_S50_L001_R1_001.FASTQ --
reverse AW50_S50_L001_R2_001.FASTQ --relabel AW50. --fastqout
AW50.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW51_S51_L001_R1_001.FASTQ --
reverse AW51_S51_L001_R2_001.FASTQ --relabel AW51. --fastqout
AW51.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW52_S52_L001_R1_001.FASTQ --
reverse AW52_S52_L001_R2_001.FASTQ --relabel AW52. --fastqout
AW52.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW53_S53_L001_R1_001.FASTQ --
reverse AW53_S53_L001_R2_001.FASTQ --relabel AW53. --fastqout
AW53.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW54_S54_L001_R1_001.FASTQ --
reverse AW54_S54_L001_R2_001.FASTQ --relabel AW54. --fastqout
AW54.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW55_S55_L001_R1_001.FASTQ --
reverse AW55_S55_L001_R2_001.FASTQ --relabel AW55. --fastqout
AW55.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW56_S56_L001_R1_001.FASTQ --
reverse AW56_S56_L001_R2_001.FASTQ --relabel AW56. --fastqout
AW56.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW57_S57_L001_R1_001.FASTQ --
reverse AW57_S57_L001_R2_001.FASTQ --relabel AW57. --fastqout
AW57.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW58_S58_L001_R1_001.FASTQ --
reverse AW58_S58_L001_R2_001.FASTQ --relabel AW58. --fastqout
AW58.vmerged.fq
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```
vsearch.vsearch.exe --fastq_mergepairs AW59_S59_L001_R1_001.FASTQ --
reverse AW59_S59_L001_R2_001.FASTQ --relabel AW59. --fastqout
AW59.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW5_S5_L001_R1_001.FASTQ --reverse
AW5_S5_L001_R2_001.FASTQ --relabel AW5. --fastqout AW5.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW60_S60_L001_R1_001.FASTQ --
reverse AW60_S60_L001_R2_001.FASTQ --relabel AW60. --fastqout
AW60.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW6_S6_L001_R1_001.FASTQ --reverse
AW6_S6_L001_R2_001.FASTQ --relabel AW6. --fastqout AW6.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW7_S7_L001_R1_001.FASTQ --reverse
AW7_S7_L001_R2_001.FASTQ --relabel AW7. --fastqout AW7.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW8_S8_L001_R1_001.FASTQ --reverse
AW8_S8_L001_R2_001.FASTQ --relabel AW8. --fastqout AW8.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW9_S9_L001_R1_001.FASTQ --reverse
AW9_S9_L001_R2_001.FASTQ --relabel AW9. --fastqout AW9.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL1_S147_L001_R1_001.FASTQ --
reverse CONTROL1_S147_L001_R2_001.FASTQ --relabel CONTROL1. --fastqout
mock_CONTROL1.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL2_S148_L001_R1_001.FASTQ --
reverse CONTROL2_S148_L001_R2_001.FASTQ --relabel CONTROL2. --fastqout
mock_CONTROL2.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL3_S149_L001_R1_001.FASTQ --
reverse CONTROL3_S149_L001_R2_001.FASTQ --relabel CONTROL3. --fastqout
mock_CONTROL3.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL4_S62_L001_R1_001.FASTQ --
reverse CONTROL4_S62_L001_R2_001.FASTQ --relabel CONTROL4. --fastqout
mock_CONTROL4.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL5_S63_L001_R1_001.FASTQ --
reverse CONTROL5_S63_L001_R2_001.FASTQ --relabel CONTROL5. --fastqout
mock_CONTROL5.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL6_S64_L001_R1_001.FASTQ --
reverse CONTROL6_S64_L001_R2_001.FASTQ --relabel CONTROL6. --fastqout
mock_CONTROL6.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL7_S150_L001_R1_001.FASTQ --
reverse CONTROL7_S150_L001_R2_001.FASTQ --relabel CONTROL7. --fastqout
mock_CONTROL7.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs MOCK_S61_L001_R1_001.FASTQ --
reverse MOCK_S61_L001_R2_001.FASTQ --relabel MOCK. --fastqout
MOCK.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU10_S109_L001_R1_001.FASTQ --
reverse SU10_S109_L001_R2_001.FASTQ --relabel SU10. --fastqout
SU10.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU11_S103_L001_R1_001.FASTQ --
reverse SU11_S103_L001_R2_001.FASTQ --relabel SU11. --fastqout
SU11.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU12_S84_L001_R1_001.FASTQ --
reverse SU12_S84_L001_R2_001.FASTQ --relabel SU12. --fastqout
SU12.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU13_S97_L001_R1_001.FASTQ --
reverse SU13_S97_L001_R2_001.FASTQ --relabel SU13. --fastqout
SU13.vmerged.fq
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vsearch.vsearch.exe --fastq_mergepairs SU14_S110_L001_R1_001.FASTQ --
reverse SU14_S110_L001_R2_001.FASTQ --relabel SU14. --fastqout
SU14.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU15_S106_L001_R1_001.FASTQ --
reverse SU15_S106_L001_R2_001.FASTQ --relabel SU15. --fastqout
SU15.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU16_S93_L001_R1_001.FASTQ --
reverse SU16_S93_L001_R2_001.FASTQ --relabel SU16. --fastqout
SU16.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU17_S85_L001_R1_001.FASTQ --
reverse SU17_S85_L001_R2_001.FASTQ --relabel SU17. --fastqout
SU17.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU18_S81_L001_R1_001.FASTQ --
reverse SU18_S81_L001_R2_001.FASTQ --relabel SU18. --fastqout
SU18.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU19_S133_L001_R1_001.FASTQ --
reverse SU19_S133_L001_R2_001.FASTQ --relabel SU19. --fastqout
SU19.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU1_S69_L001_R1_001.FASTQ --
reverse SU1_S69_L001_R2_001.FASTQ --relabel SU1. --fastqout
SU1.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU20_S140_L001_R1_001.FASTQ --
reverse SU20_S140_L001_R2_001.FASTQ --relabel SU20. --fastqout
SU20.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU21_S123_L001_R1_001.FASTQ --
reverse SU21_S123_L001_R2_001.FASTQ --relabel SU21. --fastqout
SU21.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU22_S129_L001_R1_001.FASTQ --
reverse SU22_S129_L001_R2_001.FASTQ --relabel SU22. --fastqout
SU22.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU23_S108_L001_R1_001.FASTQ --
reverse SU23_S108_L001_R2_001.FASTQ --relabel SU23. --fastqout
SU23.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU24_S107_L001_R1_001.FASTQ --
reverse SU24_S107_L001_R2_001.FASTQ --relabel SU24. --fastqout
SU24.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU25_S102_L001_R1_001.FASTQ --
reverse SU25_S102_L001_R2_001.FASTQ --relabel SU25. --fastqout
SU25.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU26_S92_L001_R1_001.FASTQ --
reverse SU26_S92_L001_R2_001.FASTQ --relabel SU26. --fastqout
SU26.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU27_S137_L001_R1_001.FASTQ --
reverse SU27_S137_L001_R2_001.FASTQ --relabel SU27. --fastqout
SU27.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU28_S77_L001_R1_001.FASTQ --
reverse SU28_S77_L001_R2_001.FASTQ --relabel SU28. --fastqout
SU28.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU29_S139_L001_R1_001.FASTQ --
reverse SU29_S139_L001_R2_001.FASTQ --relabel SU29. --fastqout
SU29.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU2_S67_L001_R1_001.FASTQ --
reverse SU2_S67_L001_R2_001.FASTQ --relabel SU2. --fastqout
SU2.vmerged.fq
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```
vsearch.vsearch.exe --fastq_mergepairs SU30_S119_L001_R1_001.FASTQ --
reverse SU30_S119_L001_R2_001.FASTQ --relabel SU30. --fastqout
SU30.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU31_S99_L001_R1_001.FASTQ --
reverse SU31_S99_L001_R2_001.FASTQ --relabel SU31. --fastqout
SU31.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU32_S127_L001_R1_001.FASTQ --
reverse SU32_S127_L001_R2_001.FASTQ --relabel SU32. --fastqout
SU32.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU33_S118_L001_R1_001.FASTQ --
reverse SU33_S118_L001_R2_001.FASTQ --relabel SU33. --fastqout
SU33.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU34_S87_L001_R1_001.FASTQ --
reverse SU34_S87_L001_R2_001.FASTQ --relabel SU34. --fastqout
SU34.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU35_S112_L001_R1_001.FASTQ --
reverse SU35_S112_L001_R2_001.FASTQ --relabel SU35. --fastqout
SU35.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU36_S136_L001_R1_001.FASTQ --
reverse SU36_S136_L001_R2_001.FASTQ --relabel SU36. --fastqout
SU36.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU37_S135_L001_R1_001.FASTQ --
reverse SU37_S135_L001_R2_001.FASTQ --relabel SU37. --fastqout
SU37.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU38_S95_L001_R1_001.FASTQ --
reverse SU38_S95_L001_R2_001.FASTQ --relabel SU38. --fastqout
SU38.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU39_S100_L001_R1_001.FASTQ --
reverse SU39_S100_L001_R2_001.FASTQ --relabel SU39. --fastqout
SU39.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU3_S66_L001_R1_001.FASTQ --
reverse SU3_S66_L001_R2_001.FASTQ --relabel SU3. --fastqout
SU3.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU40_S126_L001_R1_001.FASTQ --
reverse SU40_S126_L001_R2_001.FASTQ --relabel SU40. --fastqout
SU40.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU41_S105_L001_R1_001.FASTQ --
reverse SU41_S105_L001_R2_001.FASTQ --relabel SU41. --fastqout
SU41.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU42_S91_L001_R1_001.FASTQ --
reverse SU42_S91_L001_R2_001.FASTQ --relabel SU42. --fastqout
SU42.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU43_S142_L001_R1_001.FASTQ --
reverse SU43_S142_L001_R2_001.FASTQ --relabel SU43. --fastqout
SU43.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU44_S145_L001_R1_001.FASTQ --
reverse SU44_S145_L001_R2_001.FASTQ --relabel SU44. --fastqout
SU44.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU45_S144_L001_R1_001.FASTQ --
reverse SU45_S144_L001_R2_001.FASTQ --relabel SU45. --fastqout
SU45.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU46_S88_L001_R1_001.FASTQ --
reverse SU46_S88_L001_R2_001.FASTQ --relabel SU46. --fastqout
SU46.vmerged.fq
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```
vsearch.vsearch.exe --fastq_mergepairs SU47_S114_L001_R1_001.FASTQ --
reverse SU47_S114_L001_R2_001.FASTQ --relabel SU47. --fastqout
SU47.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU48_S120_L001_R1_001.FASTQ --
reverse SU48_S120_L001_R2_001.FASTQ --relabel SU48. --fastqout
SU48.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU49_S104_L001_R1_001.FASTQ --
reverse SU49_S104_L001_R2_001.FASTQ --relabel SU49. --fastqout
SU49.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU4_S72_L001_R1_001.FASTQ --
reverse SU4_S72_L001_R2_001.FASTQ --relabel SU4. --fastqout
SU4.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU50_S115_L001_R1_001.FASTQ --
reverse SU50_S115_L001_R2_001.FASTQ --relabel SU50. --fastqout
SU50.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU51_S130_L001_R1_001.FASTQ --
reverse SU51_S130_L001_R2_001.FASTQ --relabel SU51. --fastqout
SU51.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU52_S78_L001_R1_001.FASTQ --
reverse SU52_S78_L001_R2_001.FASTQ --relabel SU52. --fastqout
SU52.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU53_S146_L001_R1_001.FASTQ --
reverse SU53_S146_L001_R2_001.FASTQ --relabel SU53. --fastqout
SU53.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU54_S131_L001_R1_001.FASTQ --
reverse SU54_S131_L001_R2_001.FASTQ --relabel SU54. --fastqout
SU54.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU55_S101_L001_R1_001.FASTQ --
reverse SU55_S101_L001_R2_001.FASTQ --relabel SU55. --fastqout
SU55.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU56_S141_L001_R1_001.FASTQ --
reverse SU56_S141_L001_R2_001.FASTQ --relabel SU56. --fastqout
SU56.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU57_S132_L001_R1_001.FASTQ --
reverse SU57_S132_L001_R2_001.FASTQ --relabel SU57. --fastqout
SU57.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU58_S134_L001_R1_001.FASTQ --
reverse SU58_S134_L001_R2_001.FASTQ --relabel SU58. --fastqout
SU58.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU59_S71_L001_R1_001.FASTQ --
reverse SU59_S71_L001_R2_001.FASTQ --relabel SU59. --fastqout
SU59.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU5_S79_L001_R1_001.FASTQ --
reverse SU5_S79_L001_R2_001.FASTQ --relabel SU5. --fastqout
SU5.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU60_S124_L001_R1_001.FASTQ --
reverse SU60_S124_L001_R2_001.FASTQ --relabel SU60. --fastqout
SU60.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU61_S128_L001_R1_001.FASTQ --
reverse SU61_S128_L001_R2_001.FASTQ --relabel SU61. --fastqout
SU61.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU62_S83_L001_R1_001.FASTQ --
reverse SU62_S83_L001_R2_001.FASTQ --relabel SU62. --fastqout
SU62.vmerged.fq
```

```
vsearch.vsearch.exe --fastq_mergepairs SU63_S116_L001_R1_001.FASTQ --
reverse SU63_S116_L001_R2_001.FASTQ --relabel SU63. --fastqout
SU63.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU64_S122_L001_R1_001.FASTQ --
reverse SU64_S122_L001_R2_001.FASTQ --relabel SU64. --fastqout
SU64.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU65_S86_L001_R1_001.FASTQ --
reverse SU65_S86_L001_R2_001.FASTQ --relabel SU65. --fastqout
SU65.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU66_S113_L001_R1_001.FASTQ --
reverse SU66_S113_L001_R2_001.FASTQ --relabel SU66. --fastqout
SU66.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU67_S111_L001_R1_001.FASTQ --
reverse SU67_S111_L001_R2_001.FASTQ --relabel SU67. --fastqout
SU67.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU68_S65_L001_R1_001.FASTQ --
reverse SU68_S65_L001_R2_001.FASTQ --relabel SU68. --fastqout
SU68.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU69_S138_L001_R1_001.FASTQ --
reverse SU69_S138_L001_R2_001.FASTQ --relabel SU69. --fastqout
SU69.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU6_S70_L001_R1_001.FASTQ --
reverse SU6_S70_L001_R2_001.FASTQ --relabel SU6. --fastqout
SU6.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU70_S125_L001_R1_001.FASTQ --
reverse SU70_S125_L001_R2_001.FASTQ --relabel SU70. --fastqout
SU70.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU71_S143_L001_R1_001.FASTQ --
reverse SU71_S143_L001_R2_001.FASTQ --relabel SU71. --fastqout
SU71.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU72_S117_L001_R1_001.FASTQ --
reverse SU72_S117_L001_R2_001.FASTQ --relabel SU72. --fastqout
SU72.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU73_S73_L001_R1_001.FASTQ --
reverse SU73_S73_L001_R2_001.FASTQ --relabel SU73. --fastqout
SU73.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU74_S74_L001_R1_001.FASTQ --
reverse SU74_S74_L001_R2_001.FASTQ --relabel SU74. --fastqout
SU74.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU75_S94_L001_R1_001.FASTQ --
reverse SU75_S94_L001_R2_001.FASTQ --relabel SU75. --fastqout
SU75.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU76_S121_L001_R1_001.FASTQ --
reverse SU76_S121_L001_R2_001.FASTQ --relabel SU76. --fastqout
SU76.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU77_S98_L001_R1_001.FASTQ --
reverse SU77_S98_L001_R2_001.FASTQ --relabel SU77. --fastqout
SU77.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU78_S80_L001_R1_001.FASTQ --
reverse SU78_S80_L001_R2_001.FASTQ --relabel SU78. --fastqout
SU78.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU79_S89_L001_R1_001.FASTQ --
reverse SU79_S89_L001_R2_001.FASTQ --relabel SU79. --fastqout
SU79.vmerged.fq
```



```
vsearch.vsearch.exe --fastq_mergepairs SU7_S82_L001_R1_001.FASTQ --
reverse SU7_S82_L001_R2_001.FASTQ --relabel SU7. --fastqout
SU7.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU80_S90_L001_R1_001.FASTQ --
reverse SU80_S90_L001_R2_001.FASTQ --relabel SU80. --fastqout
SU80.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU81_S75_L001_R1_001.FASTQ --
reverse SU81_S75_L001_R2_001.FASTQ --relabel SU81. --fastqout
SU81.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU82_S68_L001_R1_001.FASTQ --
reverse SU82_S68_L001_R2_001.FASTQ --relabel SU82. --fastqout
SU82.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU8_S96_L001_R1_001.FASTQ --
reverse SU8_S96_L001_R2_001.FASTQ --relabel SU8. --fastqout
SU8.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU9_S76_L001_R1_001.FASTQ --
reverse SU9_S76_L001_R2_001.FASTQ --relabel SU9. --fastqout
SU9.vmerged.fq
##~45% have >10 differences and discarded using vsearch.vsearch.exe,
vmerged ~45%
```

```
##vsearch.vsearch.exe merging pairs old
vsearch.vsearch.exe --fastq_mergepairs AW10_S10_L001_R1_001.FASTQ --
reverse AW10_S10_L001_R2_001.FASTQ --relabel AW10. --fastqout
AW10.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW11_S11_L001_R1_001.FASTQ --
reverse AW11_S11_L001_R2_001.FASTQ --relabel AW11. --fastqout
AW11.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW12_S12_L001_R1_001.FASTQ --
reverse AW12_S12_L001_R2_001.FASTQ --relabel AW12. --fastqout
AW12.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW13_S13_L001_R1_001.FASTQ --
reverse AW13_S13_L001_R2_001.FASTQ --relabel AW13. --fastqout
AW13.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW14_S14_L001_R1_001.FASTQ --
reverse AW14_S14_L001_R2_001.FASTQ --relabel AW14. --fastqout
AW14.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW15_S15_L001_R1_001.FASTQ --
reverse AW15_S15_L001_R2_001.FASTQ --relabel AW15. --fastqout
AW15.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW16_S16_L001_R1_001.FASTQ --
reverse AW16_S16_L001_R2_001.FASTQ --relabel AW16. --fastqout
AW16.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW17_S17_L001_R1_001.FASTQ --
reverse AW17_S17_L001_R2_001.FASTQ --relabel AW17. --fastqout
AW17.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW18_S18_L001_R1_001.FASTQ --
reverse AW18_S18_L001_R2_001.FASTQ --relabel AW18. --fastqout
AW18.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW19_S19_L001_R1_001.FASTQ --
reverse AW19_S19_L001_R2_001.FASTQ --relabel AW19. --fastqout
AW19.old.vmerged.fq
```

```
vsearch.vsearch.exe --fastq_mergepairs AW1_S1_L001_R1_001.FASTQ --reverse
AW1_S1_L001_R2_001.FASTQ --relabel AW1. --fastqout AW1.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW20_S20_L001_R1_001.FASTQ --
reverse AW20_S20_L001_R2_001.FASTQ --relabel AW20. --fastqout
AW20.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW21_S21_L001_R1_001.FASTQ --
reverse AW21_S21_L001_R2_001.FASTQ --relabel AW21. --fastqout
AW21.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW22_S22_L001_R1_001.FASTQ --
reverse AW22_S22_L001_R2_001.FASTQ --relabel AW22. --fastqout
AW22.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW23_S23_L001_R1_001.FASTQ --
reverse AW23_S23_L001_R2_001.FASTQ --relabel AW23. --fastqout
AW23.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW24_S24_L001_R1_001.FASTQ --
reverse AW24_S24_L001_R2_001.FASTQ --relabel AW24. --fastqout
AW24.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW25_S25_L001_R1_001.FASTQ --
reverse AW25_S25_L001_R2_001.FASTQ --relabel AW25. --fastqout
AW25.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW26_S26_L001_R1_001.FASTQ --
reverse AW26_S26_L001_R2_001.FASTQ --relabel AW26. --fastqout
AW26.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW27_S27_L001_R1_001.FASTQ --
reverse AW27_S27_L001_R2_001.FASTQ --relabel AW27. --fastqout
AW27.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW28_S28_L001_R1_001.FASTQ --
reverse AW28_S28_L001_R2_001.FASTQ --relabel AW28. --fastqout
AW28.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW29_S29_L001_R1_001.FASTQ --
reverse AW29_S29_L001_R2_001.FASTQ --relabel AW29. --fastqout
AW29.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW2_S2_L001_R1_001.FASTQ --reverse
AW2_S2_L001_R2_001.FASTQ --relabel AW2. --fastqout AW2.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW30_S30_L001_R1_001.FASTQ --
reverse AW30_S30_L001_R2_001.FASTQ --relabel AW30. --fastqout
AW30.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW31_S31_L001_R1_001.FASTQ --
reverse AW31_S31_L001_R2_001.FASTQ --relabel AW31. --fastqout
AW31.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW32_S32_L001_R1_001.FASTQ --
reverse AW32_S32_L001_R2_001.FASTQ --relabel AW32. --fastqout
AW32.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW33_S33_L001_R1_001.FASTQ --
reverse AW33_S33_L001_R2_001.FASTQ --relabel AW33. --fastqout
AW33.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW34_S34_L001_R1_001.FASTQ --
reverse AW34_S34_L001_R2_001.FASTQ --relabel AW34. --fastqout
AW34.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW35_S35_L001_R1_001.FASTQ --
reverse AW35_S35_L001_R2_001.FASTQ --relabel AW35. --fastqout
AW35.old.vmerged.fq
```

```
vsearch.vsearch.exe --fastq_mergepairs AW36_S36_L001_R1_001.FASTQ --
reverse AW36_S36_L001_R2_001.FASTQ --relabel AW36. --fastqout
AW36.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW37_S37_L001_R1_001.FASTQ --
reverse AW37_S37_L001_R2_001.FASTQ --relabel AW37. --fastqout
AW37.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW38_S38_L001_R1_001.FASTQ --
reverse AW38_S38_L001_R2_001.FASTQ --relabel AW38. --fastqout
AW38.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW39_S39_L001_R1_001.FASTQ --
reverse AW39_S39_L001_R2_001.FASTQ --relabel AW39. --fastqout
AW39.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW3_S3_L001_R1_001.FASTQ --reverse
AW3_S3_L001_R2_001.FASTQ --relabel AW3. --fastqout AW3.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW40_S40_L001_R1_001.FASTQ --
reverse AW40_S40_L001_R2_001.FASTQ --relabel AW40. --fastqout
AW40.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW41_S41_L001_R1_001.FASTQ --
reverse AW41_S41_L001_R2_001.FASTQ --relabel AW41. --fastqout
AW41.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW42_S42_L001_R1_001.FASTQ --
reverse AW42_S42_L001_R2_001.FASTQ --relabel AW42. --fastqout
AW42.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW43_S43_L001_R1_001.FASTQ --
reverse AW43_S43_L001_R2_001.FASTQ --relabel AW43. --fastqout
AW43.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW44_S44_L001_R1_001.FASTQ --
reverse AW44_S44_L001_R2_001.FASTQ --relabel AW44. --fastqout
AW44.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW45_S45_L001_R1_001.FASTQ --
reverse AW45_S45_L001_R2_001.FASTQ --relabel AW45. --fastqout
AW45.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW46_S46_L001_R1_001.FASTQ --
reverse AW46_S46_L001_R2_001.FASTQ --relabel AW46. --fastqout
AW46.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW47_S47_L001_R1_001.FASTQ --
reverse AW47_S47_L001_R2_001.FASTQ --relabel AW47. --fastqout
AW47.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW48_S48_L001_R1_001.FASTQ --
reverse AW48_S48_L001_R2_001.FASTQ --relabel AW48. --fastqout
AW48.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW49_S49_L001_R1_001.FASTQ --
reverse AW49_S49_L001_R2_001.FASTQ --relabel AW49. --fastqout
AW49.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW4_S4_L001_R1_001.FASTQ --reverse
AW4_S4_L001_R2_001.FASTQ --relabel AW4. --fastqout AW4.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW50_S50_L001_R1_001.FASTQ --
reverse AW50_S50_L001_R2_001.FASTQ --relabel AW50. --fastqout
AW50.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW51_S51_L001_R1_001.FASTQ --
reverse AW51_S51_L001_R2_001.FASTQ --relabel AW51. --fastqout
AW51.old.vmerged.fq
```

```
vsearch.vsearch.exe --fastq_mergepairs AW52_S52_L001_R1_001.FASTQ --
reverse AW52_S52_L001_R2_001.FASTQ --relabel AW52. --fastqout
AW52.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW53_S53_L001_R1_001.FASTQ --
reverse AW53_S53_L001_R2_001.FASTQ --relabel AW53. --fastqout
AW53.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW54_S54_L001_R1_001.FASTQ --
reverse AW54_S54_L001_R2_001.FASTQ --relabel AW54. --fastqout
AW54.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW55_S55_L001_R1_001.FASTQ --
reverse AW55_S55_L001_R2_001.FASTQ --relabel AW55. --fastqout
AW55.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW56_S56_L001_R1_001.FASTQ --
reverse AW56_S56_L001_R2_001.FASTQ --relabel AW56. --fastqout
AW56.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW57_S57_L001_R1_001.FASTQ --
reverse AW57_S57_L001_R2_001.FASTQ --relabel AW57. --fastqout
AW57.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW58_S58_L001_R1_001.FASTQ --
reverse AW58_S58_L001_R2_001.FASTQ --relabel AW58. --fastqout
AW58.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW59_S59_L001_R1_001.FASTQ --
reverse AW59_S59_L001_R2_001.FASTQ --relabel AW59. --fastqout
AW59.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW5_S5_L001_R1_001.FASTQ --reverse
AW5_S5_L001_R2_001.FASTQ --relabel AW5. --fastqout AW5.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW60_S60_L001_R1_001.FASTQ --
reverse AW60_S60_L001_R2_001.FASTQ --relabel AW60. --fastqout
AW60.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW6_S6_L001_R1_001.FASTQ --reverse
AW6_S6_L001_R2_001.FASTQ --relabel AW6. --fastqout AW6.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW7_S7_L001_R1_001.FASTQ --reverse
AW7_S7_L001_R2_001.FASTQ --relabel AW7. --fastqout AW7.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW8_S8_L001_R1_001.FASTQ --reverse
AW8_S8_L001_R2_001.FASTQ --relabel AW8. --fastqout AW8.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs AW9_S9_L001_R1_001.FASTQ --reverse
AW9_S9_L001_R2_001.FASTQ --relabel AW9. --fastqout AW9.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL1_S61_L001_R1_001.FASTQ --
reverse CONTROL1_S61_L001_R2_001.FASTQ --relabel CONTROL1. --fastqout
mock_CONTROL1.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL2_S62_L001_R1_001.FASTQ --
reverse CONTROL2_S62_L001_R2_001.FASTQ --relabel CONTROL2. --fastqout
mock_CONTROL2.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL3_S63_L001_R1_001.FASTQ --
reverse CONTROL3_S63_L001_R2_001.FASTQ --relabel CONTROL3. --fastqout
mock_CONTROL3.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL4_S64_L001_R1_001.FASTQ --
reverse CONTROL4_S64_L001_R2_001.FASTQ --relabel CONTROL4. --fastqout
mock_CONTROL4.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL5_L001_R1_001.FASTQ --
reverse CONTROL5_L001_R2_001.FASTQ --relabel CONTROL5. --fastqout
mock_CONTROL5.old.vmerged.fq
```

```
vsearch.vsearch.exe --fastq_mergepairs CONTROL6_L001_R1_001.FASTQ --
reverse CONTROL6_L001_R2_001.FASTQ --relabel CONTROL6. --fastqout
mock_CONTROL6.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL7_L001_R1_001.FASTQ --
reverse CONTROL7_L001_R2_001.FASTQ --relabel CONTROL7. --fastqout
mock_CONTROL7.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs CONTROL8_L001_R1_001.FASTQ --
reverse CONTROL8_L001_R2_001.FASTQ --relabel CONTROL8. --fastqout
mock_CONTROL8.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU10_L001_R1_001.FASTQ --reverse
SU10_L001_R2_001.FASTQ --relabel SU10. --fastqout SU10.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU11_L001_R1_001.FASTQ --reverse
SU11_L001_R2_001.FASTQ --relabel SU11. --fastqout SU11.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU12_L001_R1_001.FASTQ --reverse
SU12_L001_R2_001.FASTQ --relabel SU12. --fastqout SU12.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU13_L001_R1_001.FASTQ --reverse
SU13_L001_R2_001.FASTQ --relabel SU13. --fastqout SU13.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU14_L001_R1_001.FASTQ --reverse
SU14_L001_R2_001.FASTQ --relabel SU14. --fastqout SU14.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU15_L001_R1_001.FASTQ --reverse
SU15_L001_R2_001.FASTQ --relabel SU15. --fastqout SU15.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU16_L001_R1_001.FASTQ --reverse
SU16_L001_R2_001.FASTQ --relabel SU16. --fastqout SU16.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU17_L001_R1_001.FASTQ --reverse
SU17_L001_R2_001.FASTQ --relabel SU17. --fastqout SU17.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU18_L001_R1_001.FASTQ --reverse
SU18_L001_R2_001.FASTQ --relabel SU18. --fastqout SU18.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU19_L001_R1_001.FASTQ --reverse
SU19_L001_R2_001.FASTQ --relabel SU19. --fastqout SU19.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU1_L001_R1_001.FASTQ --reverse
SU1_L001_R2_001.FASTQ --relabel SU1. --fastqout SU1.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU20_L001_R1_001.FASTQ --reverse
SU20_L001_R2_001.FASTQ --relabel SU20. --fastqout SU20.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU21_L001_R1_001.FASTQ --reverse
SU21_L001_R2_001.FASTQ --relabel SU21. --fastqout SU21.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU22_L001_R1_001.FASTQ --reverse
SU22_L001_R2_001.FASTQ --relabel SU22. --fastqout SU22.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU23_L001_R1_001.FASTQ --reverse
SU23_L001_R2_001.FASTQ --relabel SU23. --fastqout SU23.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU24_L001_R1_001.FASTQ --reverse
SU24_L001_R2_001.FASTQ --relabel SU24. --fastqout SU24.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU25_L001_R1_001.FASTQ --reverse
SU25_L001_R2_001.FASTQ --relabel SU25. --fastqout SU25.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU26_L001_R1_001.FASTQ --reverse
SU26_L001_R2_001.FASTQ --relabel SU26. --fastqout SU26.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU28_L001_R1_001.FASTQ --reverse
SU28_L001_R2_001.FASTQ --relabel SU28. --fastqout SU28.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU29_L001_R1_001.FASTQ --reverse
SU29_L001_R2_001.FASTQ --relabel SU29. --fastqout SU29.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU2_L001_R1_001.FASTQ --reverse
SU2_L001_R2_001.FASTQ --relabel SU2. --fastqout SU2.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU30_L001_R1_001.FASTQ --reverse
SU30_L001_R2_001.FASTQ --relabel SU30. --fastqout SU30.old.vmerged.fq
```



```
vsearch.vsearch.exe --fastq_mergepairs SU81_L001_R1_001.FASTQ --reverse
SU81_L001_R2_001.FASTQ --relabel SU81. --fastqout SU81.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU82_L001_R1_001.FASTQ --reverse
SU82_L001_R2_001.FASTQ --relabel SU82. --fastqout SU82.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU8_L001_R1_001.FASTQ --reverse
SU8_L001_R2_001.FASTQ --relabel SU8. --fastqout SU8.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU9_L001_R1_001.FASTQ --reverse
SU9_L001_R2_001.FASTQ --relabel SU9. --fastqout SU9.old.vmerged.fq
vsearch.vsearch.exe --fastq_mergepairs SU37_L001_R1_001.FASTQ --reverse
SU37_L001_R2_001.FASTQ --relabel SU37. --fastqout SU37.old.vmerged.fq
90% merged
--relabel does not work in vsearch fastq_mergepairs
```

###Quality filtering and relabeling

```
vsearch.vsearch.exe --fastq_filter AW10.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW10. --
fastaout AW10.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW11.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW11. --
fastaout AW11.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW12.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW12. --
fastaout AW12.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW13.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW13. --
fastaout AW13.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW14.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW14. --
fastaout AW14.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW15.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW15. --
fastaout AW15.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW16.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW16. --
fastaout AW16.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW17.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW17. --
fastaout AW17.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW18.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW18. --
fastaout AW18.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW19.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW19. --
fastaout AW19.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW1.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW1. --
fastaout AW1.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW20.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW20. --
fastaout AW20.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW21.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW21. --
fastaout AW21.vmerged.fa
```



```
vsearch.vsearch.exe --fastq_filter AW55.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW55. --
fastaout AW55.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW56.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW56. --
fastaout AW56.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW57.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW57. --
fastaout AW57.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW58.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW58. --
fastaout AW58.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW59.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW59. --
fastaout AW59.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW5.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW5. --
fastaout AW5.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW60.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW60. --
fastaout AW60.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW6.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW6. --
fastaout AW6.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW7.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW7. --
fastaout AW7.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW8.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW8. --
fastaout AW8.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW9.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel AW9. --
fastaout AW9.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL1.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel
mock1_CONTROL1. --fastaout mock_CONTROL1.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL2.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel
mock2_CONTROL2. --fastaout mock_CONTROL2.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL3.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel
mock3_CONTROL3. --fastaout mock_CONTROL3.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL4.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel
mock4_CONTROL4. --fastaout mock_CONTROL4.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL5.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel
mock5_CONTROL5. --fastaout mock_CONTROL5.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL6.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel
mock6_CONTROL6. --fastaout mock_CONTROL6.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL7.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel
mock7_CONTROL7. --fastaout mock_CONTROL7.vmerged.fa
```



```
vsearch.vsearch.exe --fastq_filter SU75.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU75. --
fastaout SU75.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU76.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU76. --
fastaout SU76.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU77.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU77. --
fastaout SU77.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU78.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU78. --
fastaout SU78.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU79.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU79. --
fastaout SU79.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU7.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU7. --
fastaout SU7.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU80.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU80. --
fastaout SU80.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU81.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU81. --
fastaout SU81.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU82.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU82. --
fastaout SU82.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU8.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU8. --
fastaout SU8.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU9.vmerged.fq --fastq_maxee 1.0 --
fastq_minlen 320 --fastq_maxlen 380 --fastq_maxns 0 --relabel SU9. --
fastaout SU9.vmerged.fa

vsearch.vsearch.exe --fastq_filter AW10.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel AW10. --
fastaout AW10.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW11.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel AW11. --
fastaout AW11.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW12.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel AW12. --
fastaout AW12.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW13.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel AW13. --
fastaout AW13.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW14.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel AW14. --
fastaout AW14.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter AW15.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel AW15. --
fastaout AW15.old.vmerged.fa
```



```
vsearch.vsearch.exe --fastq_filter CONTROL1.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel mock1_CONTROL1. --fastaout mock_CONTROL1.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL2.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel mock2_CONTROL2. --fastaout mock_CONTROL2.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL3.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel mock3_CONTROL3. --fastaout mock_CONTROL3.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL4.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel mock4_CONTROL4. --fastaout mock_CONTROL4.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL5.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel mock5_CONTROL5. --fastaout mock_CONTROL5.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL6.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel mock6_CONTROL6. --fastaout mock_CONTROL6.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL7.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel mock7_CONTROL7. --fastaout mock_CONTROL7.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter CONTROL8.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel mock8_CONTROL8. --fastaout mock_CONTROL8.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU10.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU10. --fastaout SU10.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU11.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU11. --fastaout SU11.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU12.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU12. --fastaout SU12.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU13.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU13. --fastaout SU13.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU14.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU14. --fastaout SU14.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU15.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU15. --fastaout SU15.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU16.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU16. --fastaout SU16.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU17.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU17. --fastaout SU17.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU18.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU18. --fastaout SU18.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU19.old.vmerged.fq --fastq_maxee 1.0 --fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU19. --fastaout SU19.old.vmerged.fa
```



```
vsearch.vsearch.exe --fastq_filter SU70.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU70. --
fastaout SU70.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU71.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU71. --
fastaout SU71.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU72.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU72. --
fastaout SU72.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU73.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU73. --
fastaout SU73.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU74.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU74. --
fastaout SU74.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU75.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU75. --
fastaout SU75.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU76.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU76. --
fastaout SU76.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU77.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU77. --
fastaout SU77.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU78.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU78. --
fastaout SU78.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU79.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU79. --
fastaout SU79.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU7.old.vmerged.fq --fastq_maxee 1.0 -
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU7. --
fastaout SU7.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU80.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU80. --
fastaout SU80.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU81.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU81. --
fastaout SU81.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU82.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU82. --
fastaout SU82.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU8.old.vmerged.fq --fastq_maxee 1.0 -
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU8. --
fastaout SU8.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU9.old.vmerged.fq --fastq_maxee 1.0 -
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU9. --
fastaout SU9.old.vmerged.fa
vsearch.vsearch.exe --fastq_filter SU37.old.vmerged.fq --fastq_maxee 1.0
--fastq_minlen 550 --fastq_maxlen 610 --fastq_maxns 0 --relabel SU37. --
fastaout SU37.old.vmerged.fa
```

```
mothur merge.files(input=AW10.vmerged.fa-AW11.vmerged.fa-AW12.vmerged.fa-
AW13.vmerged.fa-AW14.vmerged.fa-AW15.vmerged.fa-AW16.vmerged.fa-
```


AW17.vmerged.fa-AW18.vmerged.fa-AW19.vmerged.fa-AW1.vmerged.fa-AW20.vmerged.fa-AW21.vmerged.fa-AW22.vmerged.fa-AW23.vmerged.fa-AW24.vmerged.fa-AW25.vmerged.fa-AW26.vmerged.fa-AW27.vmerged.fa-AW28.vmerged.fa-AW29.vmerged.fa-AW2.vmerged.fa-AW30.vmerged.fa-AW31.vmerged.fa-AW32.vmerged.fa-AW33.vmerged.fa-AW34.vmerged.fa-AW35.vmerged.fa-AW36.vmerged.fa-AW37.vmerged.fa-AW38.vmerged.fa-AW39.vmerged.fa-AW3.vmerged.fa-AW40.vmerged.fa-AW41.vmerged.fa-AW42.vmerged.fa-AW43.vmerged.fa-AW44.vmerged.fa-AW45.vmerged.fa-AW46.vmerged.fa-AW47.vmerged.fa-AW48.vmerged.fa-AW49.vmerged.fa-AW4.vmerged.fa-AW50.vmerged.fa-AW51.vmerged.fa-AW52.vmerged.fa-AW53.vmerged.fa-AW54.vmerged.fa-AW55.vmerged.fa-AW56.vmerged.fa-AW57.vmerged.fa-AW58.vmerged.fa-AW59.vmerged.fa-AW5.vmerged.fa-AW60.vmerged.fa-AW6.vmerged.fa-AW7.vmerged.fa-AW8.vmerged.fa-AW9.vmerged.fa-mock_CONTROL1.vmerged.fa-mock_CONTROL2.vmerged.fa-mock_CONTROL3.vmerged.fa-mock_CONTROL4.vmerged.fa-mock_CONTROL5.vmerged.fa-mock_CONTROL6.vmerged.fa-mock_CONTROL7.vmerged.fa-MOCK.vmerged.fa-SU10.vmerged.fa-SU11.vmerged.fa-SU12.vmerged.fa-SU13.vmerged.fa-SU14.vmerged.fa-SU15.vmerged.fa-SU16.vmerged.fa-SU17.vmerged.fa-SU18.vmerged.fa-SU19.vmerged.fa-SU1.vmerged.fa-SU20.vmerged.fa-SU21.vmerged.fa-SU22.vmerged.fa-SU23.vmerged.fa-SU24.vmerged.fa-SU25.vmerged.fa-SU26.vmerged.fa-SU27.vmerged.fa-SU28.vmerged.fa-SU29.vmerged.fa-SU2.vmerged.fa-SU30.vmerged.fa-SU31.vmerged.fa-SU32.vmerged.fa-SU33.vmerged.fa-SU34.vmerged.fa-SU35.vmerged.fa-SU36.vmerged.fa-SU37.vmerged.fa-SU38.vmerged.fa-SU39.vmerged.fa-SU3.vmerged.fa-SU40.vmerged.fa-SU41.vmerged.fa-SU42.vmerged.fa-SU43.vmerged.fa-SU44.vmerged.fa-SU45.vmerged.fa-SU46.vmerged.fa-SU47.vmerged.fa-SU48.vmerged.fa-SU49.vmerged.fa-SU4.vmerged.fa-SU50.vmerged.fa-SU51.vmerged.fa-SU52.vmerged.fa-SU53.vmerged.fa-SU54.vmerged.fa-SU55.vmerged.fa-SU56.vmerged.fa-SU57.vmerged.fa-SU58.vmerged.fa-SU59.vmerged.fa-SU5.vmerged.fa-SU60.vmerged.fa-SU61.vmerged.fa-SU62.vmerged.fa-SU63.vmerged.fa-SU64.vmerged.fa-SU65.vmerged.fa-SU66.vmerged.fa-SU67.vmerged.fa-SU68.vmerged.fa-SU69.vmerged.fa-SU6.vmerged.fa-SU70.vmerged.fa-SU71.vmerged.fa-SU72.vmerged.fa-SU73.vmerged.fa-SU74.vmerged.fa-SU75.vmerged.fa-SU76.vmerged.fa-SU77.vmerged.fa-SU78.vmerged.fa-SU79.vmerged.fa-SU7.vmerged.fa-SU80.vmerged.fa-SU81.vmerged.fa-SU82.vmerged.fa-SU8.vmerged.fa-SU9.vmerged.fa, output=new.vall.merged.fa)

mothur merge.files(input=AW10.old.vmerged.fa-AW11.old.vmerged.fa-AW12.old.vmerged.fa-AW13.old.vmerged.fa-AW14.old.vmerged.fa-AW15.old.vmerged.fa-AW16.old.vmerged.fa-AW17.old.vmerged.fa-AW18.old.vmerged.fa-AW19.old.vmerged.fa-AW1.old.vmerged.fa-AW20.old.vmerged.fa-AW21.old.vmerged.fa-AW22.old.vmerged.fa-AW23.old.vmerged.fa-AW24.old.vmerged.fa-AW25.old.vmerged.fa-AW26.old.vmerged.fa-AW27.old.vmerged.fa-AW28.old.vmerged.fa-AW29.old.vmerged.fa-AW2.old.vmerged.fa-AW30.old.vmerged.fa-AW31.old.vmerged.fa-AW32.old.vmerged.fa-AW33.old.vmerged.fa-AW34.old.vmerged.fa-AW35.old.vmerged.fa-AW36.old.vmerged.fa-AW37.old.vmerged.fa, output=old.all.vmerged1.fa)

merge.files(input=AW38.old.vmerged.fa-AW39.old.vmerged.fa-AW3.old.vmerged.fa-AW40.old.vmerged.fa-AW41.old.vmerged.fa-AW42.old.vmerged.fa-AW43.old.vmerged.fa-AW44.old.vmerged.fa-AW45.old.vmerged.fa-AW46.old.vmerged.fa-AW47.old.vmerged.fa-AW48.old.vmerged.fa-AW49.old.vmerged.fa-AW4.old.vmerged.fa-

```

AW50.old.vmerged.fa-AW51.old.vmerged.fa-AW52.old.vmerged.fa-
AW53.old.vmerged.fa-AW54.old.vmerged.fa-AW55.old.vmerged.fa-
AW56.old.vmerged.fa-AW57.old.vmerged.fa-AW58.old.vmerged.fa-
AW59.old.vmerged.fa-AW5.old.vmerged.fa-AW60.old.vmerged.fa-
AW6.old.vmerged.fa-AW7.old.vmerged.fa-AW8.old.vmerged.fa-
AW9.old.vmerged.fa-mock_CONTROL1.old.vmerged.fa-
mock_CONTROL2.old.vmerged.fa-mock_CONTROL3.old.vmerged.fa-
mock_CONTROL4.old.vmerged.fa-mock_CONTROL5.old.vmerged.fa-
mock_CONTROL6.old.vmerged.fa-mock_CONTROL7.old.vmerged.fa-
mock_CONTROL8.old.vmerged.fa, output=old.all.vmerged2.fa)
merge.files(input=SU10.old.vmerged.fa-SU11.old.vmerged.fa-
SU12.old.vmerged.fa-SU13.old.vmerged.fa-SU14.old.vmerged.fa-
SU15.old.vmerged.fa-SU16.old.vmerged.fa-SU17.old.vmerged.fa-
SU18.old.vmerged.fa-SU19.old.vmerged.fa-SU1.old.vmerged.fa-
SU20.old.vmerged.fa-SU21.old.vmerged.fa-SU22.old.vmerged.fa-
SU23.old.vmerged.fa-SU24.old.vmerged.fa-SU25.old.vmerged.fa-
SU26.old.vmerged.fa-SU28.old.vmerged.fa-SU29.old.vmerged.fa-
SU2.old.vmerged.fa-SU30.old.vmerged.fa-SU31.old.vmerged.fa-
SU32.old.vmerged.fa-SU33.old.vmerged.fa-SU34.old.vmerged.fa-
SU35.old.vmerged.fa-SU37.old.vmerged.fa-SU38.old.vmerged.fa-
SU39.old.vmerged.fa-SU3.old.vmerged.fa-SU40.old.vmerged.fa,
output=old.all.vmerged3.fa)
merge.files(input=SU41.old.vmerged.fa-SU42.old.vmerged.fa-
SU43.old.vmerged.fa-SU44.old.vmerged.fa-SU45.old.vmerged.fa-
SU46.old.vmerged.fa-SU47.old.vmerged.fa-SU48.old.vmerged.fa-
SU49.old.vmerged.fa-SU4.old.vmerged.fa-SU50.old.vmerged.fa-
SU51.old.vmerged.fa-SU52.old.vmerged.fa-SU53.old.vmerged.fa-
SU54.old.vmerged.fa-SU55.old.vmerged.fa-SU56.old.vmerged.fa-
SU57.old.vmerged.fa-SU58.old.vmerged.fa-SU59.old.vmerged.fa-
SU5.old.vmerged.fa-SU60.old.vmerged.fa-SU61.old.vmerged.fa-
SU62.old.vmerged.fa-SU63.old.vmerged.fa-SU64.old.vmerged.fa-
SU65.old.vmerged.fa-SU66.old.vmerged.fa-SU67.old.vmerged.fa-
SU68.old.vmerged.fa-SU69.old.vmerged.fa-SU6.old.vmerged.fa-
SU70.old.vmerged.fa-SU71.old.vmerged.fa-SU72.old.vmerged.fa-
SU73.old.vmerged.fa-SU74.old.vmerged.fa-SU75.old.vmerged.fa-
SU76.old.vmerged.fa-SU77.old.vmerged.fa-SU78.old.vmerged.fa-
SU79.old.vmerged.fa-SU7.old.vmerged.fa-SU80.old.vmerged.fa-
SU81.old.vmerged.fa-SU82.old.vmerged.fa-SU8.old.vmerged.fa-
SU9.old.vmerged.fa, output=old.all.vmerged4.fa)

##Strip primers
mothur trim.seqs(fasta=new.vall.merged.fa, oligos=new.oligos)
trim.seqs(fasta=old.all.vmerged1.fa, oligos=old.oligos)
trim.seqs(fasta=old.all.vmerged2.fa, oligos=old.oligos)
trim.seqs(fasta=old.all.vmerged3.fa, oligos=old.oligos)
trim.seqs(fasta=old.all.vmerged4.fa, oligos=old.oligos)
trim.seqs(fasta=old.vall.vmerged.fa, oligos=old.oligos)

###Unique sequences
vsearch.vsearch.exe --derep_fulllength new.vall.merged.trim.fasta --
sizeout --output new.vuniques.fa
vsearch.vsearch.exe --derep_fulllength old.all.vmerged1.trim.fasta --
sizeout --output old.vuniques1.fa

```

```
vsearch.vsearch.exe --derep_fulllength old.all.vmerged2.trim.fasta --
sizeout --output old.vuniques2.fa
vsearch.vsearch.exe --derep_fulllength old.all.vmerged3.trim.fasta --
sizeout --output old.vuniques3.fa
vsearch.vsearch.exe --derep_fulllength old.all.vmerged4.trim.fasta --
sizeout --output old.vuniques4.fa
mothur merge.files(input=old.vuniques1.fa-old.vuniques2.fa-
old.vuniques3.fa-old.vuniques4.fa, output=old.vuniquesa.fa)
vsearch.vsearch.exe --derep_fulllength old.vuniquesa.fa --sizein --
sizeout --output old.vuniques.fa
```

##chimeraremoval

```
Edgar says abskew 2 gives high rate of false positives, let's use 5
vsearch.vsearch.exe --uchime_denovo new.vuniques.fa --abskew 5 --
nonchimeras new.vnonchimeras.fas --chimeras new.vchimeras.fas --uchimeout
new.vchimeradetection.txt --log log.vchimeras.txt
vsearch.vsearch.exe --uchime_denovo old.vuniques.fa --abskew 5 --
nonchimeras old.vnonchimeras.fas --chimeras old.vchimeras.fas --uchimeout
old.vchimeradetection.txt --log log.vchimeras.txt
```

for swarm:

```
usearch -fastx_uniques new.vnonchimeras.fas -sizein -sizeout -fastaout
new.vnonchimeras.fa
usearch -fastx_uniques old.vnonchimeras.fas -sizein -sizeout -fastaout
old.vnonchimeras.fa
```

##otus

```
swarm -t 2 -z -f -w new.vnonchimeras.swarms.representatives.fasta <
new.vnonchimeras.fa > new.vnonchimeras.swarms -l
new.vswarm.nonchimeras.log -s new.vnonchimeras.swarm.statistics.txt
small letters actg replaced with ACGT in
new.vnonchimeras.swarms.representatives.fasta
swarm -t 2 -z -f -w old.vnonchimeras.swarms.representatives.fasta <
old.vnonchimeras.fa > old.vnonchimeras.swarms -l
old.vswarm.nonchimeras.log -s old.vnonchimeras.swarm.statistics.txt
small letters actg replaced with ACGT in
old.vnonchimeras.swarms.representatives.fasta
```

##otutab

```
mothur merge.files(input=AW10.old.vmerged.fa-AW11.old.vmerged.fa-
AW12.old.vmerged.fa-AW13.old.vmerged.fa-AW14.old.vmerged.fa-
AW15.old.vmerged.fa-AW16.old.vmerged.fa-AW17.old.vmerged.fa-
AW18.old.vmerged.fa-AW19.old.vmerged.fa-AW1.old.vmerged.fa-
AW20.old.vmerged.fa-AW21.old.vmerged.fa-AW22.old.vmerged.fa-
AW23.old.vmerged.fa-AW24.old.vmerged.fa-AW25.old.vmerged.fa-
AW26.old.vmerged.fa-AW27.old.vmerged.fa-AW28.old.vmerged.fa-
AW29.old.vmerged.fa-AW2.old.vmerged.fa-AW30.old.vmerged.fa-
AW31.old.vmerged.fa-AW32.old.vmerged.fa-AW33.old.vmerged.fa-
AW34.old.vmerged.fa-AW35.old.vmerged.fa-AW36.old.vmerged.fa-
AW37.old.vmerged.fa-AW38.old.vmerged.fa-AW39.old.vmerged.fa-
AW3.old.vmerged.fa-AW40.old.vmerged.fa-AW41.old.vmerged.fa-
AW42.old.vmerged.fa-AW43.old.vmerged.fa-AW44.old.vmerged.fa-
AW45.old.vmerged.fa-AW46.old.vmerged.fa-AW47.old.vmerged.fa-
```

```

AW48.old.vmerged.fa-AW49.old.vmerged.fa-AW4.old.vmerged.fa-
AW50.old.vmerged.fa-AW51.old.vmerged.fa-AW52.old.vmerged.fa-
AW53.old.vmerged.fa-AW54.old.vmerged.fa-AW55.old.vmerged.fa-
AW56.old.vmerged.fa-AW57.old.vmerged.fa-AW58.old.vmerged.fa-
AW59.old.vmerged.fa-AW5.old.vmerged.fa-AW60.old.vmerged.fa-
AW6.old.vmerged.fa-AW7.old.vmerged.fa-AW8.old.vmerged.fa-
AW9.old.vmerged.fa-mock_CONTROL1.old.vmerged.fa-
mock_CONTROL2.old.vmerged.fa-mock_CONTROL3.old.vmerged.fa-
mock_CONTROL4.old.vmerged.fa-mock_CONTROL5.old.vmerged.fa-
mock_CONTROL6.old.vmerged.fa-mock_CONTROL7.old.vmerged.fa-
mock_CONTROL8.old.vmerged.fa-SU10.old.vmerged.fa-SU11.old.vmerged.fa-
SU12.old.vmerged.fa-SU13.old.vmerged.fa-SU14.old.vmerged.fa-
SU15.old.vmerged.fa-SU16.old.vmerged.fa-SU17.old.vmerged.fa-
SU18.old.vmerged.fa-SU19.old.vmerged.fa-SU1.old.vmerged.fa-
SU20.old.vmerged.fa-SU21.old.vmerged.fa-SU22.old.vmerged.fa-
SU23.old.vmerged.fa-SU24.old.vmerged.fa-SU25.old.vmerged.fa-
SU26.old.vmerged.fa-SU28.old.vmerged.fa-SU29.old.vmerged.fa-
SU2.old.vmerged.fa-SU30.old.vmerged.fa-SU31.old.vmerged.fa-
SU32.old.vmerged.fa-SU33.old.vmerged.fa-SU34.old.vmerged.fa-
SU35.old.vmerged.fa-SU37.old.vmerged.fa-SU38.old.vmerged.fa-
SU39.old.vmerged.fa-SU3.old.vmerged.fa-SU40.old.vmerged.fa-
SU41.old.vmerged.fa-SU42.old.vmerged.fa-SU43.old.vmerged.fa-
SU44.old.vmerged.fa-SU45.old.vmerged.fa-SU46.old.vmerged.fa-
SU47.old.vmerged.fa-SU48.old.vmerged.fa-SU49.old.vmerged.fa-
SU4.old.vmerged.fa-SU50.old.vmerged.fa-SU51.old.vmerged.fa-
SU52.old.vmerged.fa-SU53.old.vmerged.fa-SU54.old.vmerged.fa-
SU55.old.vmerged.fa-SU56.old.vmerged.fa-SU57.old.vmerged.fa-
SU58.old.vmerged.fa-SU59.old.vmerged.fa-SU5.old.vmerged.fa-
SU60.old.vmerged.fa-SU61.old.vmerged.fa-SU62.old.vmerged.fa-
SU63.old.vmerged.fa-SU64.old.vmerged.fa-SU65.old.vmerged.fa-
SU66.old.vmerged.fa-SU67.old.vmerged.fa-SU68.old.vmerged.fa-
SU69.old.vmerged.fa-SU6.old.vmerged.fa-SU70.old.vmerged.fa-
SU71.old.vmerged.fa-SU72.old.vmerged.fa-SU73.old.vmerged.fa-
SU74.old.vmerged.fa-SU75.old.vmerged.fa-SU76.old.vmerged.fa-
SU77.old.vmerged.fa-SU78.old.vmerged.fa-SU79.old.vmerged.fa-
SU7.old.vmerged.fa-SU80.old.vmerged.fa-SU81.old.vmerged.fa-
SU82.old.vmerged.fa-SU8.old.vmerged.fa-SU9.old.vmerged.fa,
output=old.vall.merged.fa)
vsearch.vsearch.exe --usearch_global new.vall.merged.fa --db
new.vnonchimeras.swarms.representatives.fasta --strand both --id 0.0 --
fasta_width 0 --notmatched
notmatched.new.vnonchimeras.swarms.representatives.fasta --otutabout
votutab_new.swarms.txt
vsearch.vsearch.exe --usearch_global old.vall.merged.fa --db
old.vnonchimeras.swarms.representatives.fasta --strand both --id 0.0 --
fasta_width 0 --notmatched
notmatched.old.vnonchimeras.swarms.representatives.fasta --otutabout
votutab_old.swarms.txt

;size*; removed in swarms.representative.fasta and saved as .fa
mothur get.seqs(fasta=new.vnonchimeras.swarms.representatives.fa,
accnos=Forblast.new.txt)
get.seqs(fasta=old.vnonchimeras.swarms.representatives.fa,
accnos=Forblast.old.txt)

```

```
blastn -db nt -query
F:\BalticAntarctic\new.vnonchimeras.swarms.representatives.pick.fa -
evaluate 1e-20 -num_descriptions 250 -num_alignments 250 -out
F:\BalticAntarctic\new.vnonchimeras.swarms.representatives.fasta.taxonomy
.txt -remote
blastn -db nt -query
F:\OldMiseqRun\run\old.vnonchimeras.swarms.representatives.pick.fa -
evaluate 1e-20 -num_descriptions 250 -num_alignments 250 -out
F:\OldMiseqRun\run\old.vnonchimeras.swarms.representatives.fasta.taxonomy
.txt -remote
```

```
MEGAN6:
import new.vnonchimeras.swarms.representatives.fasta.taxonomy.txt
minimum bit score 400.0 / 530
top percentage 3.0 / 1.0
Minimum support percentage 0.0001 / 0
minimum support 1
naive / weighted LCA
```

```
Total: 5404
Not assigned: 762 (14.1%) / 2098 (38.8%)
No hits 15 (0.3%)
##two settings to get the higher rank for all possibles and then to get a
species level identity to the most
```

```
MEGAN6:
import old.vnonchimeras.swarms.representatives.fasta.taxonomy.txt
minimum bit score 700.0 / 940
top percentage 3.0 / 1.0
Minimum support percentage 0.0001 / 0
minimum support 1
naive / weighted LCA
```

```
Total: 4428
Not assigned: 611 (13.8%) / 2344 (52.9%)
No hits 1 (0.0%)
```

```
makeblastdb -in D:\silva\SILVA_132_SSURef_tax_silva.fasta -parse_seqids -
dbtype nucl
blastn -db D:\silva\SILVA_132_SSURef_tax_silva.fasta -query
F:\BalticAntarctic\new.vnonchimeras.swarms.representatives.pick.fa -
evaluate 1e-20 -num_descriptions 250 -num_alignments 250 -out
F:\BalticAntarctic\new.vnonchimeras.swarms.representatives.fasta.silva.ta
xonomy.txt
blastn -db D:\silva\SILVA_132_SSURef_tax_silva.fasta -query
F:\OldMiseqRun\run\old.vnonchimeras.swarms.representatives.pick.fa -
evaluate 1e-20 -num_descriptions 250 -num_alignments 250 -out
F:\OldMiseqRun\run\old.vnonchimeras.swarms.representatives.fasta.silva.ta
xonomy.txt
```

```
MEGAN6:
import new.vnonchimeras.swarms.representatives.fasta.silva.taxonomy.txt
minimum bit score 530.0
```

top percentage 1.0
Minimum support percentage 0
minimum support 1
weighted LCA

Total: 5404
Not assigned: 2103 (38.9%)
No hits 19 (0.4%)

MEGAN6:
import old.vnonchimeras.swarms.representatives.fasta.silva.taxonomy.txt
minimum bit score 940.0
top percentage 1.0
Minimum support percentage 0
minimum support 1

Total:
Not assigned: (13.8%)
No hits (0.0%)

Compared NCBI and SILVA taxonomy. SILVA taken in unagreement.

Mamiellophyceae reads taken to Mamiellophyceae.xlsx file

SILVA + own Mamiellophyceae:

```
get.seqs(fasta=old.vnonchimeras.swarms.representatives.pick.fa,  
accnos=old.Mamiellophyceae.txt)  
get.seqs(fasta=new.vnonchimeras.swarms.representatives.pick.fa,  
accnos=new.Mamiellophyceae.txt)
```

old new and outgroup added to file: SILVA.own.outgroup.fasta

Align with MAFFT online tool: mafft --thread 10 --threadtb 5 --threadit 0
--reorder --anysymbol --auto input > output Method FFT-NS-2 (Fast but
rough)

Cut the SILVA as long as new/old reads. Took away not-well-overlapping
SILVA sequences, and not-well-aligned. file is
short.aligned.SILVA.own.outgroup.fasta

To reduce number of seqs:
dist.seqs(fasta=short.aligned.SILVA.fasta, output=square)
cluster(phylip=current, cutoff=0.01)
get.seqs(fasta=current, accnos=pick.list.txt)

There were identical sequences. In mothur:

```
unique.seqs(fasta=short.aligned.SILVA.own.outgroup.fasta)  
get.seqs(fasta=short.aligned.SILVA.own.outgroup.fasta,  
accnos=uniques.txt)
```

file short.aligned.SILVA.own.outgroup.pick.fasta

MrBayes 3.2.6

```
added outgroup and own seqs: short.aligned.SILVA.own.outgroup.pick.fasta
fasta to nexus in ALTER, file named as
short.aligned.SILVA.own.outgroup.pick.fasta.alter.nex
```

MrBayes:

```
execute short.aligned.SILVA.own.outgroup.pick.fasta.alter.nex
lset nst=mixed rates=gamma
mcmc ngen=200000
```

```
split freq = 0.14
```

```
sump burninfrac = 0.25
```

```
sumt burninfrac = 0.25
```

```
viewed in figtree
```

Reduced the number of reads by eye, taking closely situated reads away manually..

Took all from Yau et al. 2019, plus some from GenBank and SILVA based on the whole dataset tree, and combined identicals by eye. File named Yau.outgroup.own.aligned.short.uniques.fas is aligned in MAFFT online tool, shortened, and ? added to the end of reads.

To combine the identical new and old reads:

```
library(dplyr)
setwd("F:/Annotated_trees_papers/Mamiellophyceae_Note/Manuscript")
New <- read.csv('new.csv')
Old <- read.csv('old.csv')
Combined <- bind_rows(New,Old) %>%
```

```
group_by(combinedname) %>%
```

```
summarize(SU1=sum(SU1), SU10=sum(SU10), SU11=sum(SU11), SU12=sum(SU12), SU13=
sum(SU13), SU14=sum(SU14), SU15=sum(SU15), SU16=sum(SU16), SU17=sum(SU17), SU1
8=sum(SU18), SU19=sum(SU19), SU2=sum(SU2), SU20=sum(SU20), SU21=sum(SU21), SU2
2=sum(SU22), SU23=sum(SU23), SU24=sum(SU24), SU25=sum(SU25), SU26=sum(SU26), S
U27=sum(SU27), SU28=sum(SU28), SU29=sum(SU29), SU3=sum(SU3), SU30=sum(SU30), S
U31=sum(SU31), SU32=sum(SU32), SU33=sum(SU33), SU34=sum(SU34), SU35=sum(SU35)
, SU36=sum(SU36), SU37=sum(SU37), SU38=sum(SU38), SU39=sum(SU39), SU4=sum(SU4)
, SU40=sum(SU40), SU41=sum(SU41), SU42=sum(SU42), SU43=sum(SU43), SU44=sum(SU4
4), SU45=sum(SU45), SU46=sum(SU46), SU47=sum(SU47), SU48=sum(SU48), SU49=sum(S
U49), SU5=sum(SU5), SU50=sum(SU50), SU51=sum(SU51), SU52=sum(SU52), SU53=sum(S
U53), SU54=sum(SU54), SU55=sum(SU55), SU56=sum(SU56), SU57=sum(SU57), SU58=sum
(SU58), SU59=sum(SU59), SU6=sum(SU6), SU60=sum(SU60), SU61=sum(SU61), SU62=sum
(SU62), SU63=sum(SU63), SU64=sum(SU64), SU65=sum(SU65), SU66=sum(SU66), SU67=s
```

```
um (SU67) , SU68=sum (SU68) , SU69=sum (SU69) , SU7=sum (SU7) , SU70=sum (SU70) , SU71=s
um (SU71) , SU72=sum (SU72) , SU73=sum (SU73) , SU74=sum (SU74) , SU75=sum (SU75) , SU76
=sum (SU76) , SU77=sum (SU77) , SU78=sum (SU78) , SU79=sum (SU79) , SU8=sum (SU8) , SU80
=sum (SU80) , SU81=sum (SU81) , SU82=sum (SU82) , SU9=sum (SU9) )
write.csv(Combined, file="combined.csv")
```

MrBayes:

```
execute Fig1.mamiellophyceae.new.nex
lset nst=mixed rates=gamma
mcmc ngen=1500000
```

```
split freq = 0.010898
```

```
sump burninfrac = 0.25
sumt burninfrac = 0.25
```

```
redible sets of trees 4502 trees sampled
99% credible sets contains 4457 trees
```

```
viewed in figtree
```