

The **Matrix** worksheet contains a presence/absence matrix for each replicon in the consistency test genomes (the same information shown in Figure 3). Cell comments are used to describe cases of misassembly and extra contigs.

The **Trycycler vs Trycycler** worksheet shows the types of differences between all pairwise combinations of Trycycler-assembled chromosomes in the consistency test genomes.

The **Trycycler vs polished** worksheet shows the types of differences between Trycycler-assembled chromosomes and the short-read-polished chromosomes in the consistency test genomes.

The **Other vs other** worksheet shows the types of differences between all pairwise combinations of single-assembler-assembled chromosomes in the consistency test genomes.

The **Tester assemblers** worksheet shows which assemblers the Trycycler testers used to generate the input assemblies for Trycycler.

# Matrix

	Acinetobacter baumannii J9				Citrobacter koseri MINF_9D				Enterobacter kobei MSB1_1B				Haemophilus M1C132_1				Klebsiella oxytoca MSB1_2C				Klebsiella variicola INF345											
	chromosome	plasmid_1	plasmid_2	extra contigs	chromosome	plasmid_1	plasmid_2	extra contigs	chromosome	plasmid_1	plasmid_2	plasmid_3	extra contigs	chromosome	plasmid_1	plasmid_2	plasmid_3	extra contigs	chromosome	plasmid_1	plasmid_2	plasmid_3	extra contigs	chromosome	plasmid_1	plasmid_2	plasmid_3	plasmid_4	plasmid_5	extra contigs		
Miniasm/Minipolish	yes	yes	no	0	yes <sup>1</sup>	yes	yes <sup>2</sup>	57	yes	yes	yes	yes	yes <sup>3</sup>	2	yes	yes <sup>3</sup>	yes	yes <sup>1</sup>	82	yes	yes	yes	yes <sup>3</sup>	3	yes	yes	yes	yes	yes <sup>3</sup>	yes	2	
Raven	yes	yes	no	0	yes <sup>4</sup>	yes	yes <sup>2,3</sup>	63	yes	yes <sup>5</sup>	no	no	yes <sup>5</sup>	0	yes	yes	yes	no	65	yes	yes	yes	yes <sup>2</sup>	0	yes	yes	yes	yes	yes <sup>2</sup>	yes <sup>2,5</sup>	0	
Flye	yes	yes	yes	0	yes	yes	yes <sup>2</sup>	0	yes	yes	yes	no	yes	1	yes	yes	yes	yes	3	yes	yes	yes	yes	1	yes	yes	yes	yes <sup>5</sup>	yes <sup>2</sup>	yes	0	
Trycycler - developer	yes	yes	yes	0	yes	yes	yes	0	yes	yes	yes	yes	yes	0	yes	yes	yes	yes	0	yes	yes	yes	yes	0	yes	yes	yes	yes	yes	yes	0	
Trycycler - tester 1	yes	yes	yes	0	yes	yes	no	0	yes	yes	yes	yes	yes	0	yes	yes	no	yes	2	yes	yes	yes	yes	1	yes	yes	yes	no	yes	yes	0	
Trycycler - tester 2	yes	yes	yes	0	yes	yes	no	0	yes	no	yes	yes	yes	0	yes	yes	yes	yes	4	yes	yes	yes	yes	1	yes	yes	yes	no	yes	yes	0	
Trycycler - tester 3	yes	yes	yes	0	yes	yes	yes	0	yes	yes	yes	yes	no	0	yes	yes	no	yes	2	yes	yes	yes	yes	1	yes	yes	yes	no	yes	yes	0	
Trycycler - tester 4	yes	yes	yes	0	yes	yes	yes	0	yes	yes	yes	yes	no	0	yes	yes	no	no	0	yes	yes	yes	yes	1	yes	yes	yes	yes	yes	yes	0	
Trycycler - tester 5	yes	yes	yes	0	yes	yes	no	0	yes	yes	yes	yes	yes <sup>6</sup>	yes <sup>6</sup>	0	yes	yes	no	no	3	yes	yes	yes	yes	1	yes	yes	yes	no	no	yes	0

1. Contig was too long and not circularised.

2. Multiple copies of the small plasmid sequence in one contig.

3. The assembly contains multiple redundant contigs for this plasmid, some/all of which failed to circularised well.

4. Contig was too short because some chunks of the chromosome ended up in separate contigs.

5. Contig contains misassemblies

6. The assembly contained a correct contig for this plasmid, but it also contained a misassembled contig which contains large pieces of plasmid 3 and plasmid 4.





## Other vs other

Genome/replicon	Replicon size	Assembly 1	Assembly 2	Substitutions		Homopolymer indels													Non-homopolymer indels														
				1 bp homopolymer indels	1 bp non-homopolymer indels	2 bp homopolymer indels	3 bp homopolymer indels	4 bp homopolymer indels	5 bp homopolymer indels	6 bp homopolymer indels	7 bp homopolymer indels	8 bp homopolymer indels	9 bp homopolymer indels	10 bp homopolymer indels	11 bp homopolymer indels	12 bp homopolymer indels	13 bp homopolymer indels	14 bp homopolymer indels	15 bp homopolymer indels	16 bp homopolymer indels	17 bp homopolymer indels	18 bp homopolymer indels	19 bp homopolymer indels	20 bp homopolymer indels	21 bp homopolymer indels	22 bp homopolymer indels	23 bp homopolymer indels	26 bp homopolymer indels	32 bp homopolymer indels	91 bp homopolymer indels	106 bp homopolymer indels	453 bp homopolymer indels	
Acinetobacter_baumannii_J9_chromosome	3798645	miniasm	raven	2975	670	2507	67	769	8	283	3	148	82	41	22	20	14	10	8	6	7	4	1	1	0	1	3	2	0	1	0	1	0
Acinetobacter_baumannii_J9_chromosome	3798645	miniasm	flye	2950	968	2335	64	724	8	247	2	133	60	34	16	14	9	4	4	2	3	4	1	1	0	1	0	0	0	0	1	0	
Acinetobacter_baumannii_J9_chromosome	3798645	raven	flye	48	804	243	19	88	1	51	1	41	22	16	13	12	10	4	5	1	2	2	2	1	0	1	0	3	0	0	0		
Enterobacter_kobei_MS81_1B_chromosome	4837926	miniasm	raven	215	692	1074	36	227	2	56	2	17	5	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
Enterobacter_kobei_MS81_1B_chromosome	4837926	miniasm	flye	414	1159	1037	37	155	2	41	2	12	5	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
Enterobacter_kobei_MS81_1B_chromosome	4837926	raven	flye	307	1101	1008	19	99	2	10	0	7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Haemophilus_MIC132_1_chromosome	2051886	miniasm	raven	120	322	431	66	166	9	48	0	7	3	2	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Haemophilus_MIC132_1_chromosome	2051886	miniasm	flye	107	514	326	43	106	10	28	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haemophilus_MIC132_1_chromosome	2051886	raven	flye	77	480	269	23	99	2	25	0	6	4	2	2	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Klebsiella_oxytoca_MS81_2C_chromosome	5804453	miniasm	raven	796	713	1208	37	493	4	219	1	102	61	33	22	12	15	9	0	3	2	2	1	0	1	0	0	0	0	1	0	0	0
Klebsiella_oxytoca_MS81_2C_chromosome	5804453	miniasm	flye	842	1400	1108	47	450	4	207	1	100	56	31	19	9	15	8	0	3	2	1	1	0	0	0	0	0	0	0	0	0	0
Klebsiella_oxytoca_MS81_2C_chromosome	5804453	raven	flye	71	1348	243	31	92	0	17	0	1	8	0	2	2	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	
Klebsiella_varicola_INF345_chromosome	5417034	miniasm	raven	131	805	594	40	179	2	40	0	11	4	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Klebsiella_varicola_INF345_chromosome	5417034	miniasm	flye	285	1451	622	35	156	1	29	0	6	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Klebsiella_varicola_INF345_chromosome	5417034	raven	flye	244	1381	454	32	107	0	21	0	6	4	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
Totals:	9582	13808	13459	596	3910	55	1322	13	600	317	159	106	75	66	35	17	15	18	16	6	3	2	2	5	2	3	1	3	2	1	1		
Proportions:	21.68%	31.24%	30.45%	1.35%	8.85%	0.12%	2.99%	0.03%	1.36%	0.72%	0.36%	0.24%	0.17%	0.15%	0.08%	0.04%	0.03%	0.04%	0.04%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	
Rate per Mbp:	155.35	210.80	215.50	10.83	63.76	1.19	21.15	0.22	9.28	4.83	2.46	1.62	1.23	0.96	0.51	0.30	0.23	0.32	0.25	0.09	0.05	0.02	0.04	0.09	0.04	0.05	0.02	0.04	0.02	0.01	0.02	0.02	

# Tester assemblers

Assemblers used	
Trycycler - developer	3x Flye, 3x Miniasm/Minipolish, 3x Raven, 3x Redbean
Trycycler - tester 1	3x Flye, 3x Miniasm/Minipolish, 3x Raven, 3x Redbean
Trycycler - tester 2	3x Flye, 3x Miniasm/Minipolish, 3x Raven, 3x Redbean
Trycycler - tester 3	4x Flye, 4x Miniasm/Minipolish, 4x Raven
Trycycler - tester 4	3x Flye, 3x Miniasm/Minipolish, 3x Raven
Trycycler - tester 5	4x Flye, 4x Miniasm/Minipolish, 4x Raven