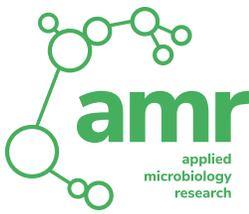




University of  
Zurich<sup>UZH</sup>

Institute of Medical Microbiology

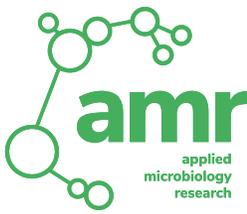


# Typing: discussion

Helena Seth-Smith PhD

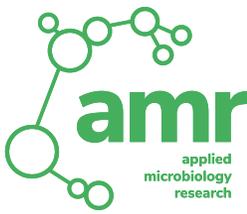
24.03.2023

# Table of Contents



- Core gene typing methods
- Different tools
- Differences between Illumina and ONT and hybrid assemblies
- Stable schemes versus Panaroo generated schemes

# Sequenced samples: Back story MRSA



Hospital 1 suspects an outbreak from July. Hospital 2 also suspects an outbreak, possibly originating as a transmission from P7 in August.

NB Patient 2 was at Hospital 1 but was not sampled

NB P7 was also a patient at H1 in June

SaH1P10622

SaH1P41122

SaH2P70722

SaH1P51022

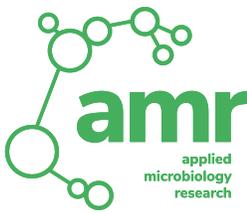
SaH1P30922

SaH2P90822

SaH2P60722

Sa= species; H# is hospital; P# is patient; MMY

# Sequenced samples: Back story UPEC



Three urine samples from one week period in November 2022, plus one bloodstream isolate from one of these patients, who developed an invasive infection

EcP2U1122

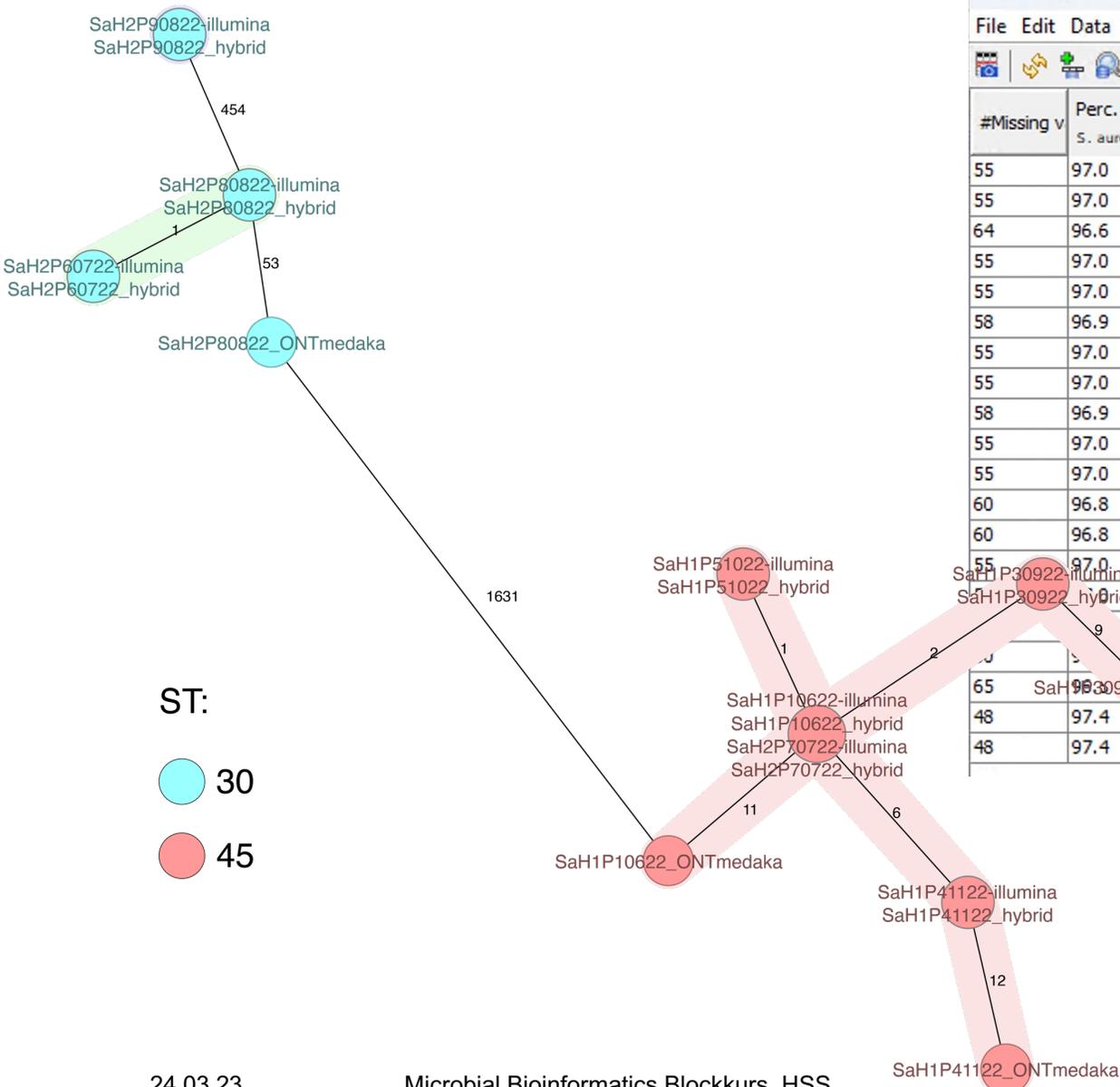
EcP2B1122

EcP1U1122

EcP3U1122

Ec\_species; P# is patient; U=urine; B=bloodstream; MMY

# Ridom Seqsphere+ analysis of the different assemblies: *S. aureus*

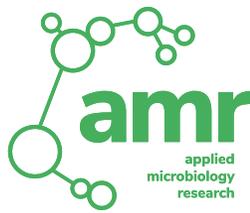


Comparison Table: Staphylococcus aureus [unstored]

File Edit Data Columns Analysis Tools

#Missing v	Perc. Gc	Approx Contamination Check Result	Contig Count	Top Spe	Top Species Match	Sample ID	ST
	<i>S. aureus</i>	Procedu Procedure Details and Statistics	Procedure Detail	Procedur	Procedure Details and Statis	Sample	<i>S. aureus</i> MLS*
55	97.0	2.7 No evidence for contamin...	14	1.00	Staphylococcus aureus	SaH1P10622-illumina	45
55	97.0	2.7 No evidence for contamin...	8	1.00	Staphylococcus aureus	SaH1P10622_hybrid	45
64	96.6	2.7 No evidence for contamin...	2	1.00	Staphylococcus aureus	SaH1P10622_ONTmedaka	45
55	97.0	2.7 No evidence for contamin...	25	1.00	Staphylococcus aureus	SaH1P30922-illumina	45
55	97.0	2.7 No evidence for contamin...	2	1.00	Staphylococcus aureus	SaH1P30922_hybrid	45
58	96.9	2.7 No evidence for contamin...	2	1.00	Staphylococcus aureus	SaH1P30922_ONTmedaka	45
55	97.0	2.7 No evidence for contamin...	20	1.00	Staphylococcus aureus	SaH1P41122-illumina	45
55	97.0	2.7 No evidence for contamin...	2	1.00	Staphylococcus aureus	SaH1P41122_hybrid	45
58	96.9	2.7 No evidence for contamin...	2	1.00	Staphylococcus aureus	SaH1P41122_ONTmedaka	45
55	97.0	2.7 No evidence for contamin...	14	1.00	Staphylococcus aureus	SaH1P51022-illumina	45
55	97.0	2.7 No evidence for contamin...	20	1.00	Staphylococcus aureus	SaH1P51022_hybrid	45
60	96.8	2.8 No evidence for contamin...	49	1.00	Staphylococcus aureus	SaH2P60722-illumina	30
60	96.8	2.8 No evidence for contamin...	41	1.00	Staphylococcus aureus	SaH2P60722_hybrid	30
55	97.0	2.7 No evidence for contamin...	23	1.00	Staphylococcus aureus	SaH2P70722-illumina	45
55	97.0	2.7 No evidence for contamin...	20	1.00	Staphylococcus aureus	SaH2P70722_hybrid	45
55	97.0	2.8 No evidence for contamin...	56	1.00	Staphylococcus aureus	SaH2P80822-illumina	30
55	97.0	2.8 No evidence for contamin...	1	1.00	Staphylococcus aureus	SaH2P80822_hybrid	30
55	97.0	2.8 No evidence for contamin...	1	1.00	Staphylococcus aureus	SaH2P80822_ONTmedaka	30
48	97.4	2.8 No evidence for contamin...	37	1.00	Staphylococcus aureus	SaH2P90822-illumina	30
48	97.4	2.8 No evidence for contamin...	14	1.00	Staphylococcus aureus	SaH2P90822_hybrid	30

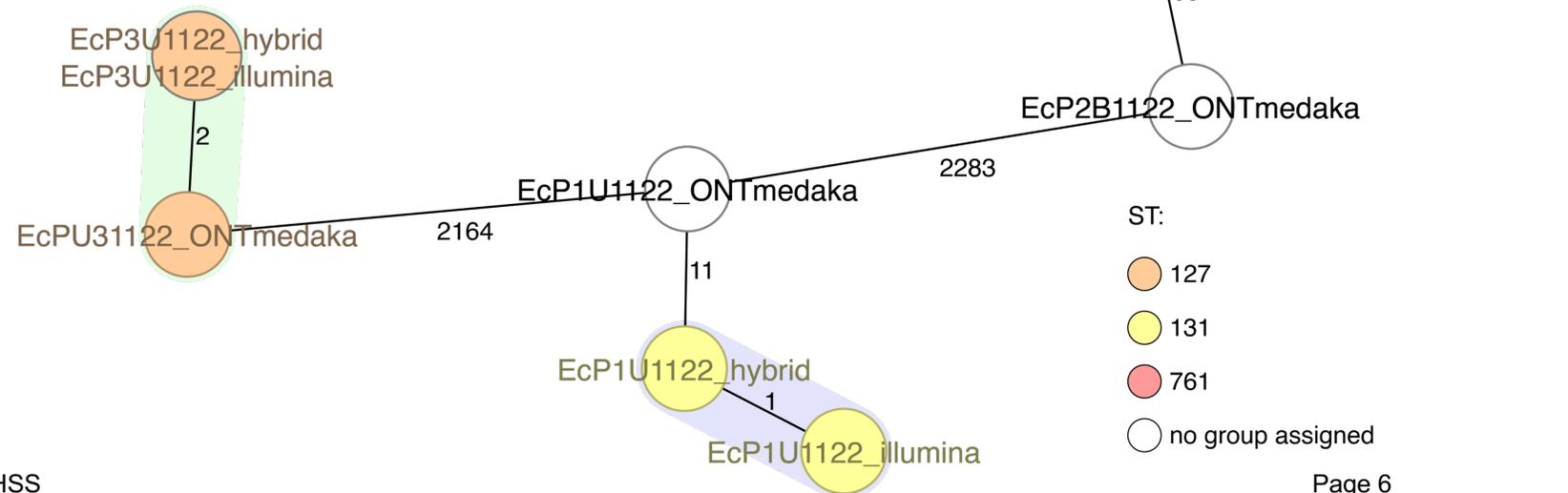
# Ridom Seqsphere+ analysis of the different assemblies: *E. coli*



Comparison Table: Escherichia coli [unstored]

File Edit Data Columns Analysis Tools

#Missing v	Perc. Gc E. coli cg	Avg. C Procedu	Approxii Procedur	Contig C Procedur	Contamination Check Result Procedure Details and Statistics	Top Species Ma Procedure Details	Top Spe Procedur	Cluster Source	Sample ID Sample	ST Warwick E. coli MLST W	ST Pasteur E. coli MLST P	Comple E. coli o
22	99.1	?	5.5	13	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP1U1122_hybrid</b>	131	43	6724
22	99.1	?	5.4	205	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP1U1122_illumina</b>	131	43	6724
64	97.5	?	5.5	53	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP1U1122_ONTme...</b>	?	43	?
23	99.1	?	5.1	374	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP2B1122-illumina</b>	761	? (unknown)	?
23	99.1	?	5.3	5	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP2B1122_hybrid</b>	761	? (unknown)	?
78	96.9	?	5.3	7	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP2B1122_ONTme...</b>	?	? (unknown)	?
23	99.1	?	5.1	279	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP2U1122-illumina</b>	761	? (unknown)	?
23	99.1	?	5.3	5	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP2U1122_hybrid</b>	761	? (unknown)	?
65	97.4	?	5.3	5	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP2U1122_ONTme...</b>	761	? (unknown)	?
12	99.5	?	5.2	11	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP3U1122_hybrid</b>	127	33	1885
12	99.5	?	5.1	156	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcP3U1122_illumina</b>	127	33	1885
41	98.4	?	5.1	21	No evidence for contamination found	Escherichia coli	1.00	?	<b>EcPU31122_ONTme...</b>	127	33	1885



**Many thanks for your  
attention**

**Questions??**