

Hybrid *De Novo* Genome Assembly for the Generation of Complete Genomes of Urinary Bacteria using Short- and Long-read Sequencing Technologies

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Materials

Name	Company	Catalog Number	Comments
Equipment:			
Bioanalyzer 2100	Agilent	G29398A	Optional but recommended
Centrifuge	Eppendorf	--	Any centrifuge for spinning conicals and microcentrifuge tubes (e.g. Models 5810R/5424R)
Electrophoresis	BioRad Laboratories	1645070	
Gel Imaging System	BioRad Laboratories		ChemiDoc models
Incubator	ThermoFisher Scientific	--	Any CO ₂ Incubator (e.g. Thermo Forma model 3110)
Magnetic Rack	New England Biolabs	S15095	12-tube rack
MinION	Oxford Nanopore Technologies	--	
Nanodrop	ThermoFisher Scientific	ND-ONE-W	
NextSeq 500	Illumina	SY-415-1002	Other Illumina models are acceptable
Plate Reader	BioTek	--	Synergy H1
Qubit fluorometer	ThermoFisher Scientific	Q33238	
Rotator	Benchmark Scientific	H2024	
Thermocycler	ThermoFisher Scientific	--	Any thermocycler for PCR reactions (e.g. ProFlex PCR system)
Materials:			
10X Phosphate Buffered Saline (PBS)	Fisher Scientific	BP3991	
10X TBE buffer	--	--	1M Tris, 1M Boric Acid, 0.2M EDTA (pH 8.0)
1429R primer	Sigma Aldrich (Custom oligos)	--	GGTTACCTTGTTACGACTT
1kb Ladder	VWR	101228-494	
1M Tris-Cl (pH 7.5)	ThermoFisher Scientific	15567027	
6x Loading dye	Fisher Scientific	NC0783588	

8F primer	Sigma Aldrich (Custom oligos)	--	AGAGTTTGATCCTGGCTCAG
Agar	Fisher Scientific	BP1423-2	
Agarose	BioRad Laboratories	63001	
AMPure XP Beads	Beckman Coulter	A63880	
Anaerobe Pouch System - GasPak EZ	BD Diagnostic Systems	B260683	
Boric Acid	Fisher Scientific	A73-500	
Brain Heart Infusion Broth	BD Diagnostic Systems	212304	
CDC Anaerobe 5% Sheep Blood Agar	BD Diagnostic Systems	L007357	
CHROMagar Orientation	BD Diagnostic Systems	PA-257481.04	
DNeasy Blood & Tissue	QIAGEN	69504	
DreamTaq Master Mix	ThermoFisher Scientific	K1081	
Dry Anaerobic Indicator Strips	BD Diagnostic Systems	271051	
EDTA	Fisher Scientific	S311-500	
Ethanol 200 Proof	Sigma Aldrich	E7023	For molecular biology
Ethidium Bromide	ThermoFisher Scientific	BP130210	
Flow cell priming kit	Oxford Nanopore Technologies	EXP-FLP002	
Flow cell wash kit	Oxford Nanopore Technologies	EXP-WSH003	
Gel Extraction Miniprep Kit	BioBasic	BS654	
Ligation sequencing kit	Oxford Nanopore Technologies	SQK-LSK109	
Lysozyme	Research Products International Corp	L381005.05	
Mutanolysin	Sigma Aldrich	M9901-5KU	
Native barcoding expansion 1-12	Oxford Nanopore Technologies	EXP-NBD104	
NEB Blunt/TA Ligase Master Mix	New England BioLabs	M0367L	
NEBNext FFPE DNA Repair Mix	New England BioLabs	M6630L	
NEBNext quick ligation buffer	New England BioLabs	B6058S	
NEBNext Ultra II End repair / dA-tailing module	New England BioLabs	E7546L	
Nextera DNA CD Indexes	Illumina	20018708	
Nextera DNA Flex Library Prep - (M) Tagmentation	Illumina	20018705	
Nuclease-free water	Sigma Aldrich	W4502	
Qubit 1X dsDNA HS Assay Kit	ThermoFisher Scientific	Q33230	
Qubit Assay Tubes	ThermoFisher Scientific	Q32856	
Quick T4 DNA Ligase	New England BioLabs	E6056L	
R9 Flow cell	Oxford Nanopore Technologies	FLO-MIN106D	
RNase A	ThermoFisher Scientific	EN0531	
Sheep Blood	Hemostat Laboratories	DS13250	
TE buffer	--	--	10mM Tris, 1mM EDTA (pH 8.0)
Triton X-100	Sigma Aldrich	T8787	
Tryptic Soy Broth	BD Diagnostic Systems	211825	
Software & Bioinformatic Tools:			
Bandage	--	--	https://rrwick.github.io/Bandage/
Center for Genomic Epidemiology	--	--	http://www.genomicepidemiology.org/
CLC Genomics Workbench 12	QIAGEN	--	
CRISPRcasFinder	--	--	https://crisprcas.i2bc.paris-saclay.fr/

FastQC	--	--	https://www.bioinformatics.babraham.ac.uk/projects/fastqc/
Geneious Prime	Geneious	--	
gVolante (BUSCO)	--	--	https://gvolante.riken.jp/
Kbase Prokka Wrapper	--	--	https://kbase.us/applist/apps/ProkkaAnnotation/annotate_contigs/release
Minimap2	--	--	https://github.com/lh3/minimap2
MinKNOW	Oxford Nanopore Technologies	--	
NanoFilt	--	--	https://github.com/wdecoster/nanofilt
NanoStat	--	--	https://github.com/wdecoster/nanostat
PHASTER	--	--	https://phaster.ca/
Prokka	--	--	https://github.com/tseemann/prokka
QUAST	--	--	http://quast.sourceforge.net/quast
Trim Galore	--	--	https://www.bioinformatics.babraham.ac.uk/projects/trim_galore/
Trimmomatic	--	--	http://www.usadellab.org/cms/?page=trimmomatic
Unicycler	--	--	https://github.com/rrwick/Unicycler#necessary-read-length