Complete Genome Sequence of WM99c, an Antibiotic-Resistant Acinetobacter baumannii Global Clone 2 (GC2) Strain Representing an Australian GC2 Lineage

Steven J. Nigro, a Ryan Wick, b,c Kathryn E. Holt, b,c Ruth M. Hall a

ABSTRACT  The extensively antibiotic-resistant Acinetobacter baumannii isolate WM99c recovered in Sydney, Australia, in 1999 is an early representative of a distinct lineage of global clone 2 (GC2) seen on the east coast of Australia. We present the complete 4.121-Mbp genome sequence (chromosome plus 2 plasmids), generated via long-read sequencing (PacBio).

Received 30 September 2018  Accepted 10 November 2018  Published 6 December 2018


Editor Irene L. G. Newton, Indiana University, Bloomington
Copyright © 2018 Nigro et al. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International license.
Address correspondence to Ruth M. Hall, ruth.hall@sydney.edu.au.

School of Life and Environmental Sciences, University of Sydney, Sydney, Australia
Centre for Systems Genomics, University of Melbourne, Melbourne, Australia
Department of Biochemistry and Molecular Biology, Bio21 Molecular Science and Biotechnology Institute, University of Melbourne, Melbourne, Australia
element encoding a site-specific tyrosine recombinase was detected in the excised free circular form as well as in the chromosome (bp 992828 to 1006173). Protein coding, rRNA, and tRNA genes were annotated with Prokka version 1.12 (10), and the antibiotic resistance regions, transposons, insertion sequences, and plasmids were annotated manually. Polysaccharide biosynthesis loci for capsule (KL) and outer core of lipooligosaccharide (OCL) were annotated according to published nomenclature (11). Four potential integrated phage genomes of 52.6 kb, 49.5 kb, 37 bp, and 36.1 kb were identified with PHASTER (12).

WM99c belongs to sequence type 208 (ST208) (Oxford scheme; https://pubmlst.org/abaumannii/) and carries the KL2 capsule cluster and the OCL1 lipooligosaccharide outer core cluster (11). In addition to the IS26 copies in AbGRI2-1, the chromosome includes 20 copies of the insertion sequence ISAba1, including 4 associated with expression of antibiotic resistance genes, namely, the 2 that are part of Tn2006 and the single copies upstream of the ampC and sul2 resistance genes. Two copies each of ISAba17 and ISAba22 and 1 of ISAba26 were also detected using ISfinder (https://isfinder.biotoul.fr/).

The genome sequence of WM99c will underpin studies of the origin and evolution of the unique GC2 lineage found in hospitals on the east coast of Australia.

**Data availability.** The complete genome sequence of the *Acinetobacter baumannii* isolate WM99c has been deposited in DDBJ/ENA/GenBank under the accession numbers CP031743 (chromosome), CP031745 (pWM99c-1), and CP031744 (pWM99c-2). The versions described in this paper are the first versions, CP031743.1 to CP031745.1. The PacBio reads have been deposited in the SRA under accession number SRR8162697. Illumina HiSeq data are available under SRA accession number ERR110084.

**ACKNOWLEDGMENTS**

This work was supported by the NHMRC of Australia (project grant number 1026189 to R.M.H. and fellowship number 1061409 to K.E.H.).

We thank Jon Iredell for supplying isolate WM99c.

**REFERENCES**


