

## Karakteristik genotipe dan fenotipe methicillin-resistant Staphylococcus aureus isolat Rumah Sakit di Jakarta = Genotype and phenotype characteristics of hospital- isolated methicillin-resistant Staphylococcus aureus in Jakarta

Lia Waslia, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20485541&lokasi=lokal>

---

### Abstrak

#### **ABSTRAK**

Methicillin resistant Staphylococcus aureus (MRSA) merupakan bakteri yang resisten terhadap antibiotik methicillin dan antibiotik golongan  $\beta$ -laktam lainnya. MRSA adalah patogen umum di rumah sakit dan masyarakat. Isolasi MRSA tidak mudah dilakukan karena seringkali bercampur atau terkontaminasi dengan flora normal seperti coagulase negative Staphylococci (CoNS) yaitu Staphylococcus epidermidis dan Staphylococcus haemolyticus. Studi ini menggunakan metode fenotipik berupa pengamatan morfologi, pengecatan Gram, Uji biokimia, serta kepekaan antibiotik sedangkan uji genotipik (metode molekular) berupa PCR gen nuc dan mec, SCCmec typing, MLST dan sekuensing. Subyek penelitian sebanyak 48 isolat tersimpan di Laboratorium Bakteriologi Molekular, Lembaga Eijkman Jakarta. Diperoleh sebanyak 33 sampel (68.75) memiliki tipe 5 ccr, 9 sampel (18.75) tipe 2 ccr dan 6 sampel (12.5) nontypeable. Sequence type (ST) yang dominan pada penelitian ini adalah ST239 (2-3-1-1-4-4-3) dan merupakan strain yang multidrug resistant dominan. Pada penelitian ini semua isolat MRSA yang berjumlah 48 isolat telah dikonfirmasi memiliki ciri-ciri fenotipik yang sesuai, yaitu Gram positif coccus menyerupai buah anggur, hemolisis, oksidase negatif, katalase positif dan koagulase positif. Sifat bakteri MRSA secara genotipik mempunyai gen nuc dan gen mecA positif. Hubungan antara sifat genotipe dan sifat fenotipe MRSA yang terlihat dalam penelitian ini adalah semua isolat MRSA yang multidrug resistant (uji secara fenotipik) juga merupakan sequence type yang dominan di rumah sakit (uji genotipik).

---

#### **ABSTRACT**

Methicillin resistant Staphylococcus aureus (MRSA) is a bacterium that is resistant to the methicillin antibiotics and other  $\beta$ -lactam group antibiotics. MRSA is a common pathogen in hospitals and communities. Isolation of MRSA is not easy to do because it is often mixed or contaminated with normal flora such as coagulase negative Staphylococci (CoNS), namely Staphylococcus epidermidis and Staphylococcus haemolyticus. This study used phenotypic methods in the form of morphological observations, Gram staining, biochemical tests, and antibiotic sensitivity while genotypic tests (molecular methods) in the form of nuc and mec PCR, SCCmec typing, MLST and sequencing. The research subjects were 48 isolates stored in the Molecular Bacteriology Laboratory, Eijkman Institute Jakarta. Thirty three samples (68.75) had

type 5 ccr, 9 samples (18.75) type 2 ccr and 6 samples (12.5) nontypeable. The dominant sequence type (ST) in this study is ST239 (2-3-1-1-4-4-3) and is a multidrug resistant dominant strain. In this study, all isolates of MRSA, total of 48 isolates, were confirmed to have appropriate phenotypic features, which are Gram positive cocci resembling grapes, -hemolysis, negative oxidase, positive catalase and positive coagulase. Genotypically all isolates have positive nuc gene and mecA gene. The relationship between genotype features and MRSA phenotype seen in this study is that MRSA isolates that are multidrug resistant (phenotypic test) are also the dominant sequence types in the hospital (genotypic test).