

**EURGen\_C26-10** is an **NDM-1** producing *Citrobacter freundii* strain from Denmark

**Sequence type:**  
ST18

**Resistance genes<sup>1</sup>:**

| Antimicrobial agent             | Resistance gene <sup>1</sup>                                                                 |
|---------------------------------|----------------------------------------------------------------------------------------------|
| Carbapenems                     | <i>bla</i> <sub>NDM-1</sub>                                                                  |
| Third generation cephalosporins | <i>bla</i> <sub>CMY-6</sub> , <i>bla</i> <sub>CMY117</sub> ,                                 |
| Other beta-lactams              | <i>bla</i> <sub>OXA-1</sub> , <i>bla</i> <sub>TEM-1</sub>                                    |
| Colistin                        | Not detected                                                                                 |
| Fluoroquinolones                | Not detected                                                                                 |
| Aminoglycosides                 | <i>aac(6')-Ib-cr</i> , <i>aac(6')-Ib3</i> ,<br><i>aadA5</i> , <i>aph(6)-Id</i> , <i>rmtC</i> |
| Tetracyclines                   | Not detected                                                                                 |
| Trimethoprim                    | <i>dfrA17</i>                                                                                |
| Sulphonamide                    | <i>sul1</i> , <i>sul2</i>                                                                    |
| Fosfomycin                      | Not detected                                                                                 |

<sup>1</sup>Detected using AMRFinder 4.2.7 and ResFinder 4.7.2 (database 2.6.0)

**Phenotype:**

| Antimicrobial agent           | Reference MIC (mg/ml) | Reference inhibition zone (mm) <sup>2</sup> | Interpretation <sup>3</sup> |
|-------------------------------|-----------------------|---------------------------------------------|-----------------------------|
| Piperacillin-tazobactam       | >64                   | 6                                           | R                           |
| Cefiderocol                   | ND                    | 19-21                                       | R                           |
| Cefotaxime                    | >8                    | 6                                           | R                           |
| Ceftazidime                   | >16                   | 6                                           | R                           |
| Ceftazidime-avibactam         | >32                   | 6                                           | R                           |
| Ceftolozane-tazobactam        | >16                   | 6                                           | R                           |
| Ertapenem                     | >4                    | 13-16                                       | R                           |
| Imipenem                      | 4-8                   | 15-18                                       | R <sup>4</sup>              |
| Imipenem-relebactam           | 4-8                   | 16-20                                       | R                           |
| Meropenem                     | 8-16                  | 12-17                                       | R <sup>5</sup>              |
| Meropenem-vaborbactam         | 8-16                  | 13-18                                       | R <sup>5</sup>              |
| Aztreonam                     | 8                     | 12-18                                       | R                           |
| Aztreonam-avibactam           | 0.125                 | 27-29                                       | S                           |
| Ciprofloxacin                 | >4                    | 6-8                                         | R                           |
| Levofloxacin                  | >4                    | 11-13                                       | R                           |
| Amikacin                      | >64                   | 6                                           | R                           |
| Gentamicin                    | >16                   | 6                                           | R                           |
| Tobramycin                    | >16                   | 6                                           | R                           |
| Colistin                      | 0.25-0.5              | -                                           | S                           |
| Trimethoprim-sulfamethoxazole | >16                   | 6                                           | R                           |

ND: not determined

<sup>2</sup>Using EUCAST disk diffusion methodology ([https://www.eucast.org/ast\\_of\\_bacteria/disk\\_diffusion\\_methodology](https://www.eucast.org/ast_of_bacteria/disk_diffusion_methodology))

<sup>3</sup>SIR-categorization according to The European Committee on Antimicrobial Susceptibility Testing. Breakpoint tables for interpretation of MICs and zone diameters. Version 16.1, 2026. <https://www.eucast.org>.

<sup>4</sup> MICs are close to the breakpoint, increasing the risk of erroneous SIR categorisation.

<sup>5</sup> MICs and inhibition zones are close to the breakpoint, increasing the risk of erroneous SIR categorisation.