

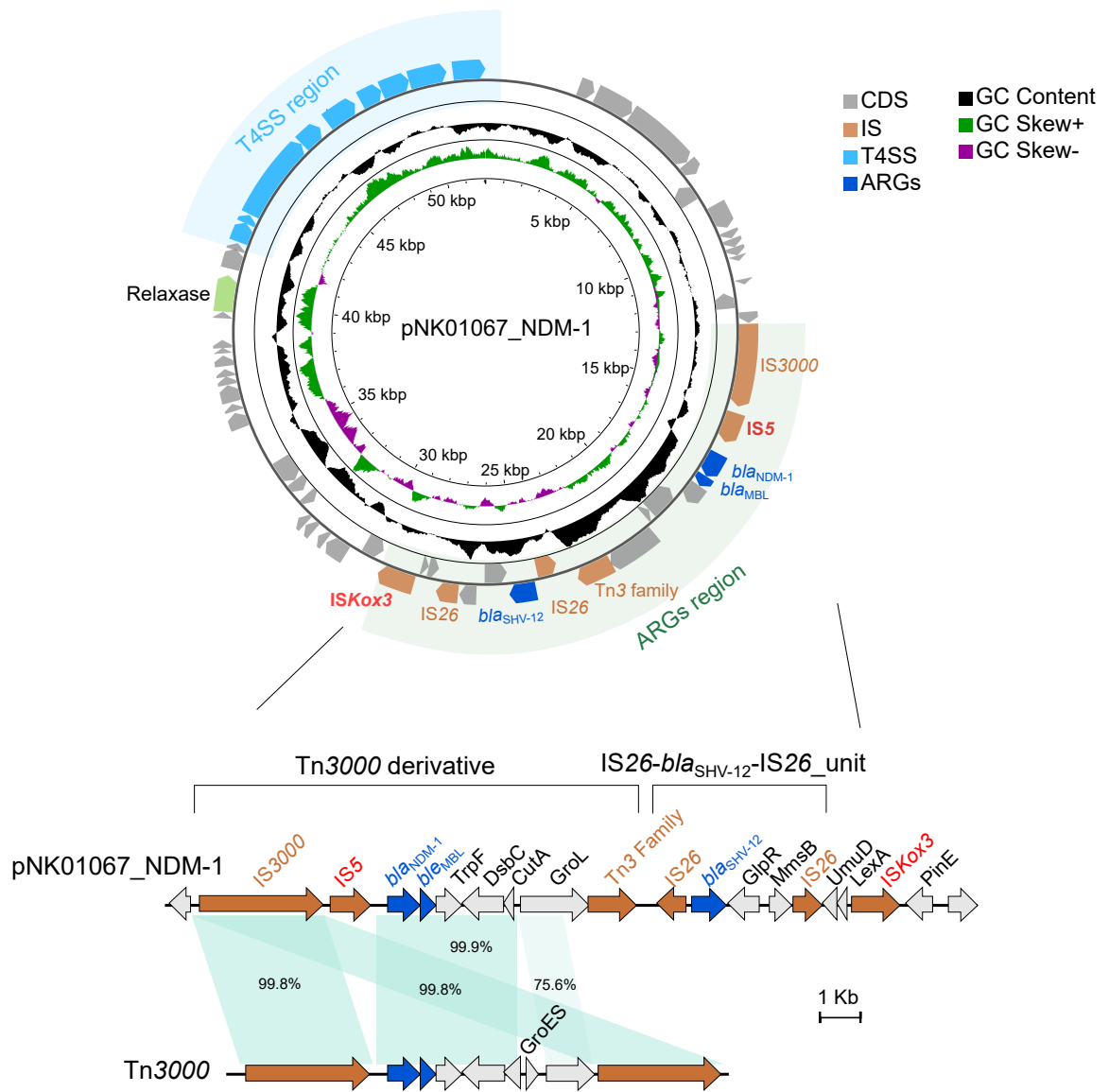


Figure S1. Circular representation of the IncX3-type resistance plasmid pNK01067-NDM-1. In comparison to Tn3000, the *bla*_{NDM-1} gene-carrying transposon features an upstream IS5 insertion sequence. Furthermore, the plasmid includes an IS26-mediated *bla*_{SHV-12} module and the ISKox3 insertion sequence.

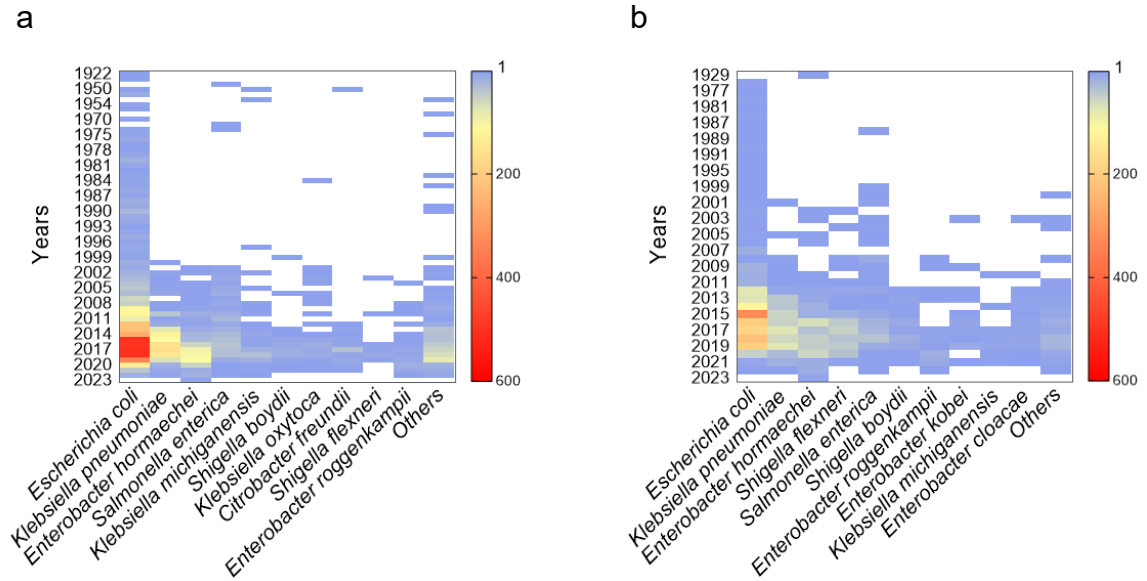


Figure S2. Distribution and origin of IS5 and ISKox3 in pathogenic bacteria. **a.** Temporal distribution and number of IS5-carrying strains. **b.** Temporal distribution and number of ISKox3-carrying strains. The y-axis indicates the year and the heat map color spectrum from blue to red indicates the emergence and escalation of strain numbers.

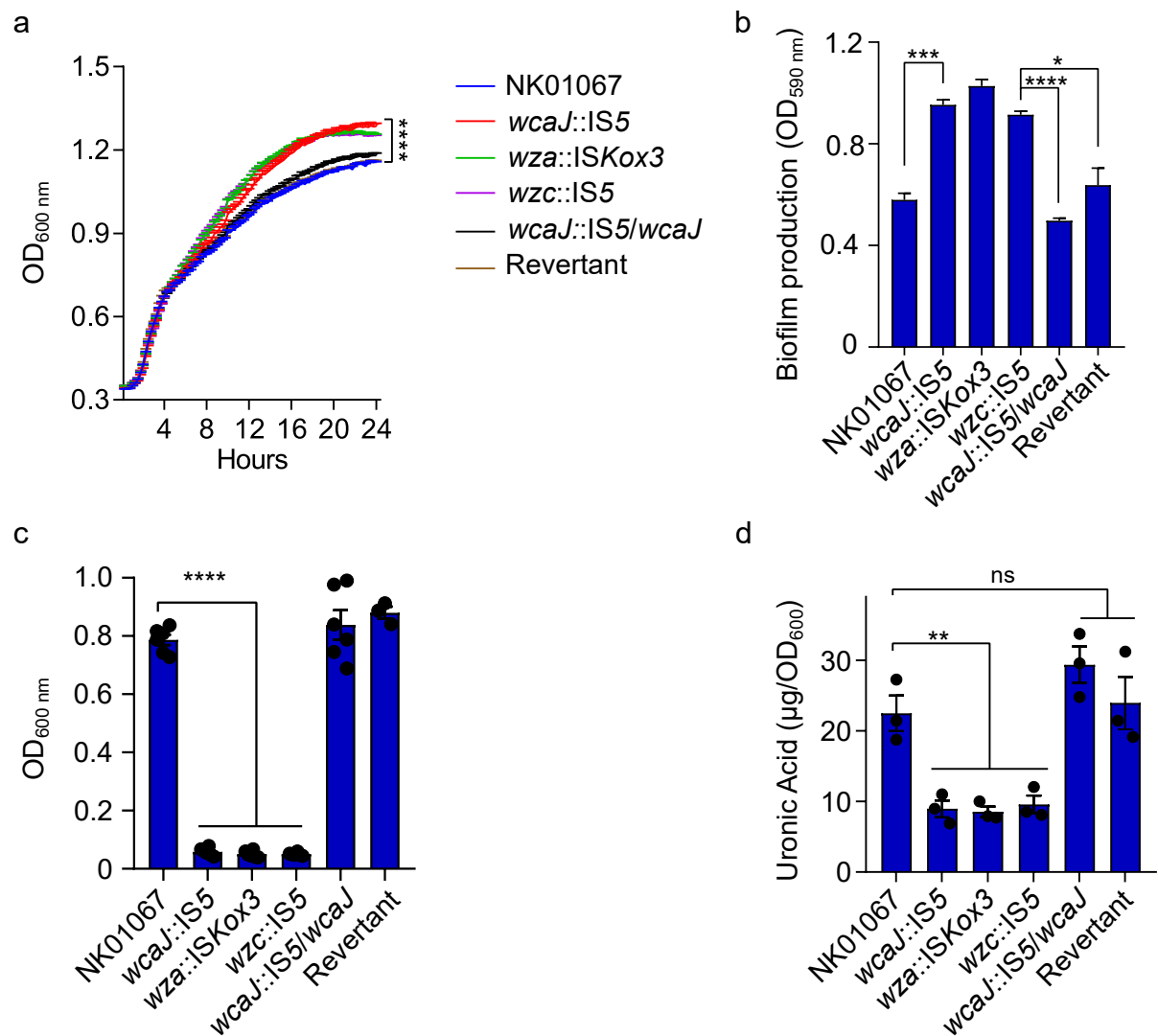


Figure S3. Phenotypic analysis of NK01067 wild type and its mutants. **a.** Growth curves of NK01067 wild type and mutants ($n = 4$). **b.** Biofilm formation in NK01067 wild type and mutants ($n = 3$). **c.** Mucoid phenotype of NK01067 wild type and mutants ($n = 6$). **d.** Uronic acid content in NK01067 wild type and mutants ($n = 3$). Error bars represent the standard error of the mean. Significance levels are indicated as follows: *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$; ****, $p < 0.0001$; ns, not significant.

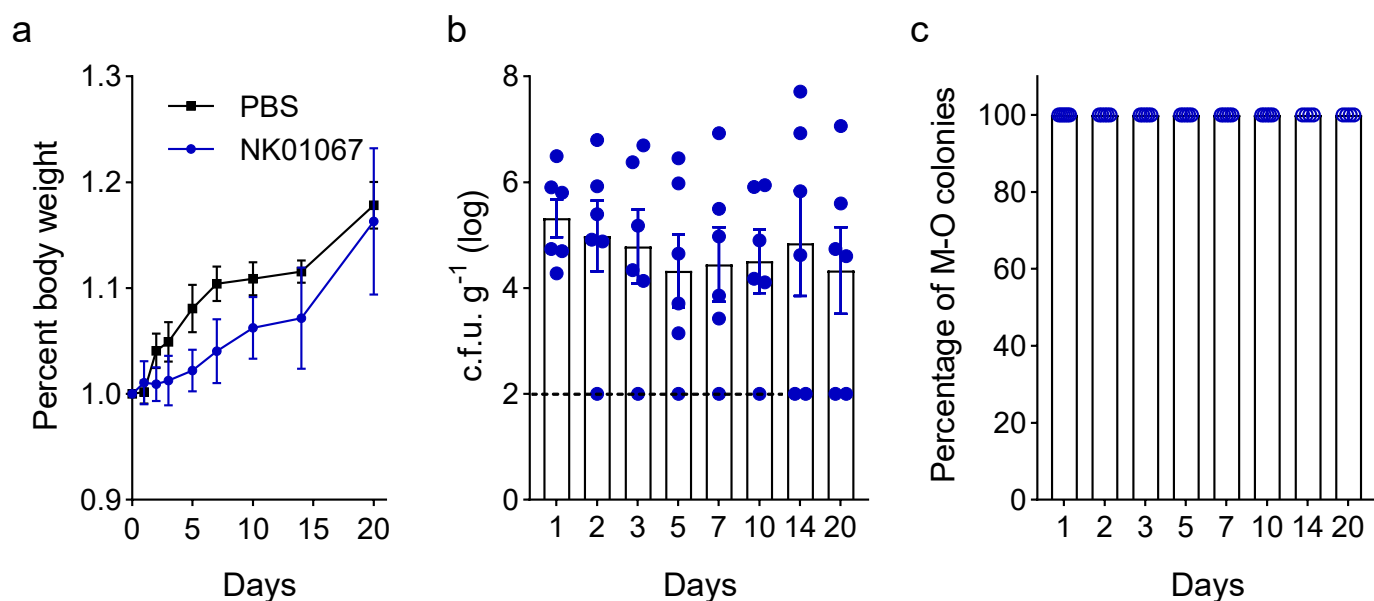


Figure S4. Long-term colonization of mice with the wild-type strain NK01067. **a.** Percent body weight changes in mice gavaged with 1×10^5 c.f.u. ($n = 6$ mice). **b.** Bacterial loads in mice over 20 days. For each mouse, 2–3 pellets were collected each time, and each sample underwent a single effective dilution and colony count. For samples below the detection limit, triplicate counts were conducted to ensure accuracy. The dashed line represents the detection limit (5×10^3 c.f.u./g). **c.** Phenotypic assessment of capsular phase variation in colonized mice. A value of 100% indicates that only M-O phenotype colonies were isolated from all mouse fecal samples.