

Role of AcrAB-TolC multidrug efflux pump in drug-resistance acquisition by plasmid transfer

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A race against time

Clinically relevant antimicrobial resistance is largely spread via plasmids that disperse among bacteria during conjugation. How quickly can a resistance gene be expressed after transfer? In susceptible bacterial cells, tetracycline should inhibit protein synthesis, including from the plasmid-transferred resistance gene *tetA*. Unexpectedly, Nolivos *et al.* found that TetA can be expressed despite the presence of tetracycline (see the Perspective by Povoletto and Ackermann). Immediately after plasmid transfer into a cell, TetA synthesis starts because its repressor is slow to be expressed. In addition, the ubiquitous xenobiotic efflux pump AcrAB-TolC buys time for TetA translation by keeping tetracycline concentration below toxic levels.

Science, this issue p. 778; see also p. 737

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