

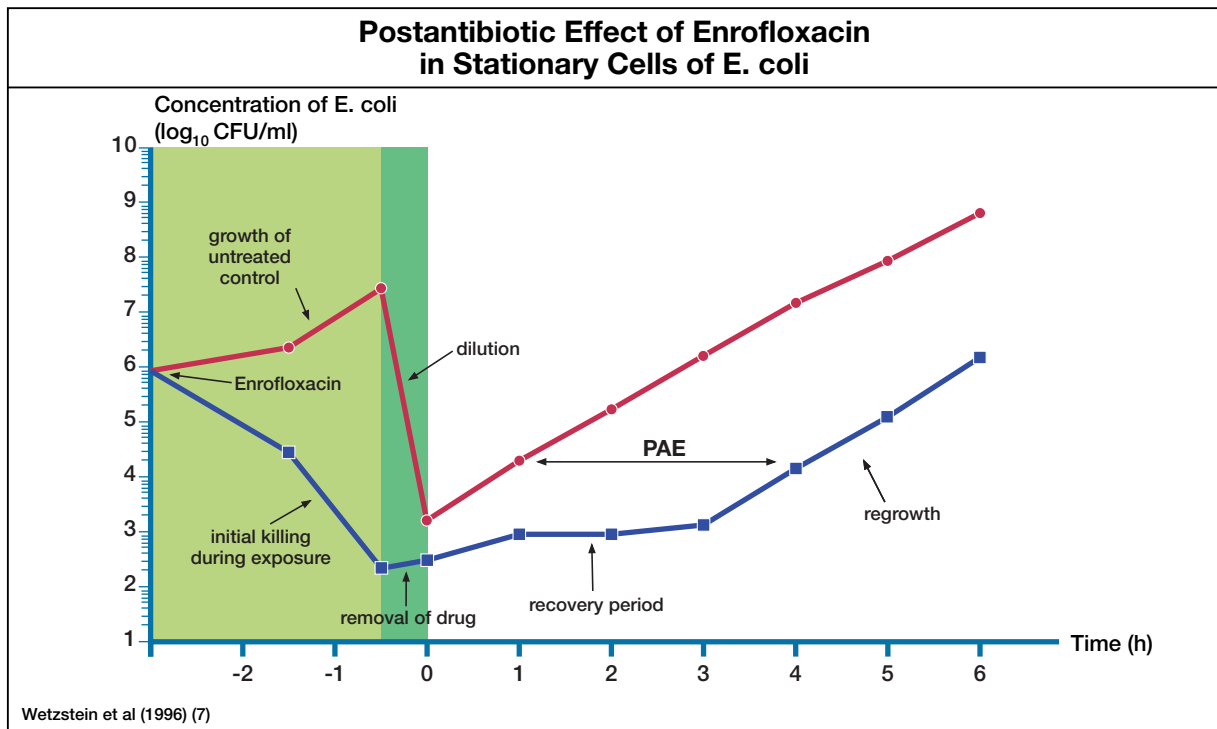
Postantibiotic Effect (PAE)

Baytril induces a postantibiotic effect (PAE), a period of persistent growth suppression of bacteria *in vitro* after an anti-infective has been removed from the culture medium (7).

During this period, bacterial metabolism still is decreased and bacteria are more susceptible to phagocytosis (9). For *Staphylococcus aureus* it has also been proposed that energy-dependent efflux mechanisms for fluoroquinolones are depressed (10).

The duration of the PAE depends on the concentration of enrofloxacin in the culture medium, cell density in the culture, and the time of exposure to the drug (maximum of 2 hours for *Staph. aureus*). In general, the PAE for enrofloxacin is around 3 hours for the most relevant pathogens at drug concentrations of 8 x MIC (7).

Experiments in a mouse model suggest that PAEs under *in vivo* conditions are almost twice as long compared to *in vitro* results. It can be concluded that *in vitro* PAEs may underestimate the real conditions (7).

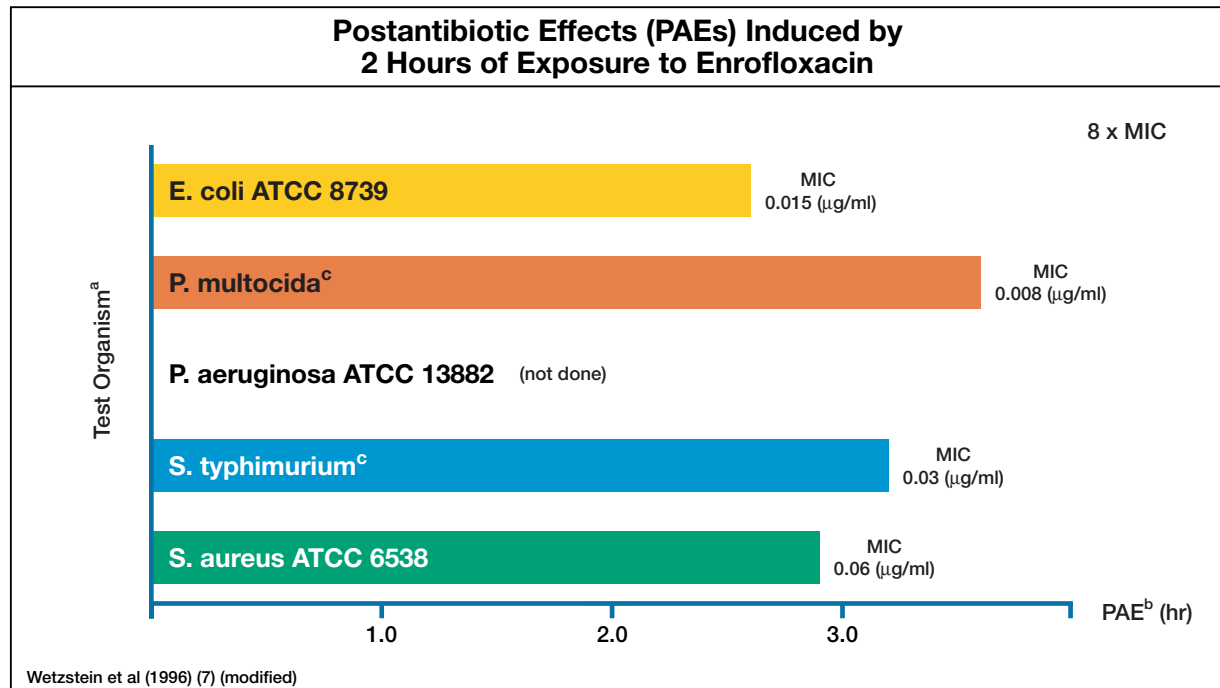
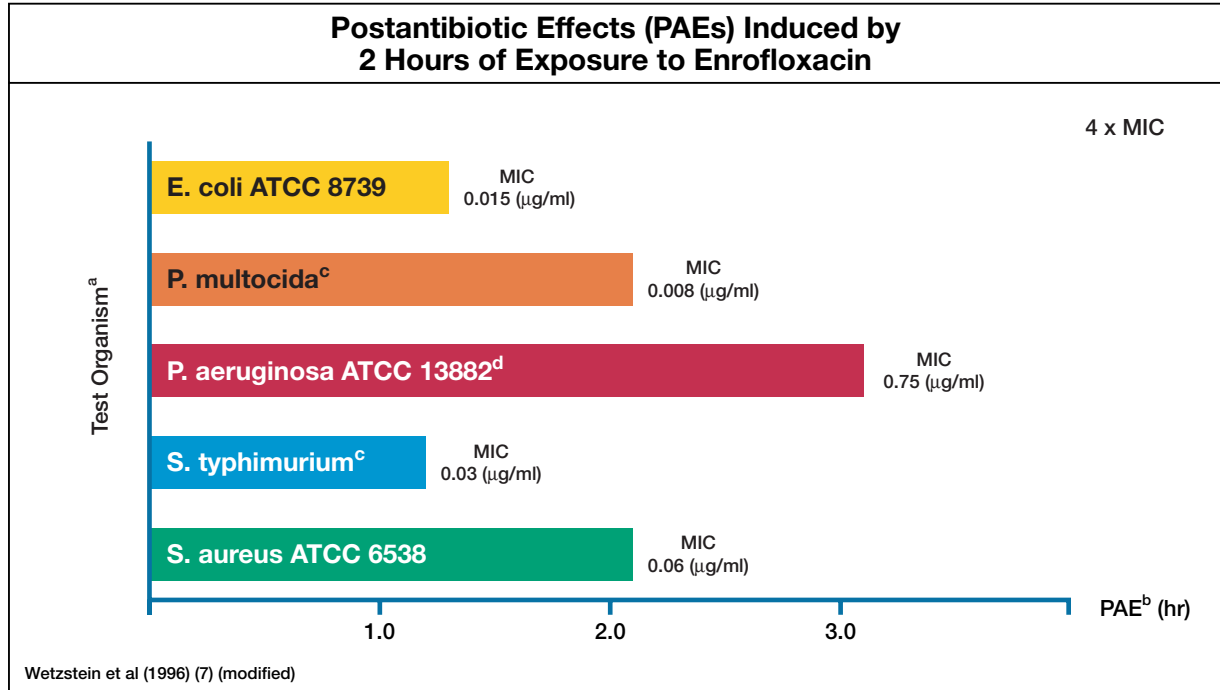


After exposure of *E. coli* to enrofloxacin at 8x MIC (■) for 2 hours, the drug was removed by centrifugation/resuspension and regrowth was monitored. An untreated control (●) was diluted in fresh growth medium. The PAE is the time during which regrowth of the treated culture is delayed.

References:

- (7) Wetzstein HG, DeJong A: *In vitro* bactericidal activity and post antibiotic effect of fluoroquinolones used in veterinary medicine. *Suppl Compend Contin Educ Pract Vet* 18 (2): 22-29, 1996.
- (9) Novelli A, Mazzei T, Fallani S, et al: Postantibiotic leucocyte enhancement of feroxacin compared to ciprofloxacin on *S. aureus* and *S. epidermidis* strains. *Pharmacol Res* 26 (suppl 1): 305, 1992.
- (10) Piddock LVJ: New quinolones and Gram-positive bacteria. *Antimicrobial Agents and Chemotherapy* 38: 163-169, 1994.

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^aThe inoculum was taken from liquid cultures in the early stationary phase.

^bDuration of PAEs is given as average of observed range.

^cField isolates.

^dTime of exposure was only 1 hour because of the high bactericidal activity of enrofloxacin.