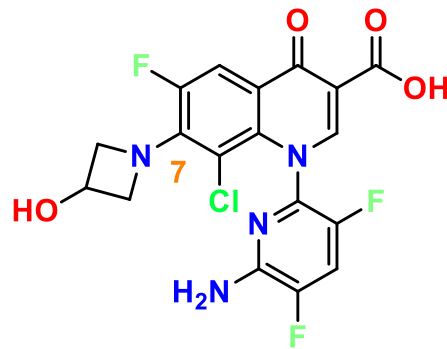
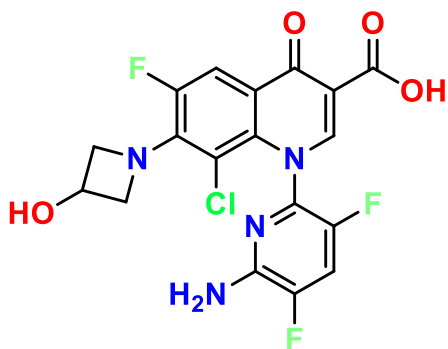


La molécule du mois - What molecule am I ?



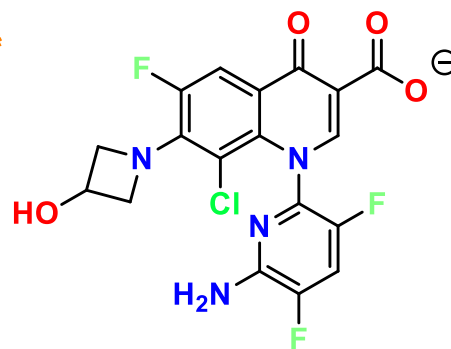
Delafloxacin

Delafloxacin (DLX) is a fluoroquinolone antibiotic. The absence of protonable substituent in **position 7** gives to delafloxacin an **anionic** character at physiological pH, which is unusual for a fluoroquinolone. But at slightly acidic pH (≤ 5.5), the majority form is **uncharged**, which facilitates the transmembrane pass into the bacterium through gradient. Once inside the bacteria, where the pH is neutral, DLX is deprotonated, being, **in ionic form**, retained within the bacteria. In contrast to most approved fluoroquinolones, which are zwitterionic, delafloxacin's anionic character markedly improves its potency at acidic pH.



Neutral form at acidic pH

$pK_a = 5.4$



Anionic form at physiological pH

Delafloxacin was approved by FDA in June 2017 (Baxdela®) for the treatment of acute bacterial skin and skin structure infections caused by susceptible bacteria.

Contribution : David MONTOIR & Abdallah HAMZE September 2017