Daptomycin is highly efficacious against penicillin-resistant and penicillin- and quinolone-resistant pneumococci in experimental meningitis

Philippe Cottagnoud, Marc Pfister, Fernando Acosta, Marianne Cottagnoud, Lukas Flatz, Felix Kühn, Hans-Peter Müller & Armin Stucki

The penetration of daptomycin, a new lipopeptide antibiotic, into inflamed meninges ranged between 4.37 and 7.53% (mean, 5.97%). Daptomycin was very efficacious in the treatment of experimental pneumococcal meningitis, producing a decrease of -1.20 +/- 0.32 Deltalog(10) CFU/ml. h in the bacterial titer of Streptococcus pneumoniae against a penicillin-resistant strain and of -0.97 +/- 0.32 Deltalog(10) CFU/ml. h against a penicillin- and quinolone-resistant strain found in cerebrospinal fluid (CSF). For both strains, daptomycin was significantly superior to the standard regimen of a combination of ceftriaxone with vancomycin, sterilizing 9 of 10 CSF samples after 4 h. In vitro, daptomycin produced highly bactericidal activity in concentrations above the MIC.