Shuttle Vector for Rickettsia Species

Technology No. 20120126

Plasmid Shuttle Vector for Rickettsia

Plasmid vectors that incorporate portions of native plasmids from Rickettsia amblyommii, a symbiont of the Lone Star tick. This shuttle vector system has been engineered to be able to replicate in both E. coli (for easy production) and in rickdettsiae. Current technology for transformation of rickettsiae relies on transposon mutagenesis that results in random insertion of genes into the rickettsial genome, and may disrupt gene function. Transposons can carry only a limited size "payload," and is inefficient (low number of mutants are recovered). In contrast, shuttle vectors do not cause gene disruption, because they are not inserted into the rickettsial genome. This allows introduction of any gene or group of genes into rickettsiae for testing their function, or for labeling live rickettsiae that express fluorescent markers encoded on the plasmids to study their behavior in cells and organisms. Transformation of different species of rickettsiae. This allows introduction of any gene or group of genes into rickettsiae for testing their function, or for labeling live rickettsiae that express fluorescent markers encoded on the plasmids to study their behavior in cells and organisms.

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