

## IDENTIFICATION OF PLASMIDS IN ANTIBIOTIC RESISTANT BACTERIA FROM WILD SPOTTED TURTLES

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### **Abstract:**

Many studies have shown that misuse and overuse of antibiotics in clinical and agricultural settings contribute to a general increase in microbial resistance to antibiotics. Bacteria that encounter antibiotics have evolved evading strategies, i.e. antibiotic resistant genes. Recent reports of antibiotic resistance in bacteria isolated from the guts of wild animals that never been directly exposed to antibiotics suggest that incidence of antibiotic resistance may reflect exposure to antibiotics that have entered the environment. We tested nine bacterial isolates from the cloacae of free-ranging spotted turtles (*Clemmys guttata*) for antibiotic resistance with the Kirby-Bauer antibiotic disc assay. All bacterial isolates were susceptible to two amino-glycosides antibiotics, gentamycin and neomycin. One isolate was resistant to amino-glycoside antibiotic, amikacin, and four or five others were also resistant to four additional antibiotics of the  $\beta$ -lactam class (amoxicillin, ampicillin, bacitracin and cefaclor). We used standard protocols to determine if any of the nine bacterial isolates contain plasmid DNA. Three bacterial isolates were found to contain plasmid DNAs and these isolates were identified as *Hafnia alvei*, *Citrobacter sp.* and *Acinetobacter johnsonii*. We are currently introducing these plasmids into *E.coli* to determine if the plasmids confer antibiotic resistance. Future goals include the genetic characterization of putative plasmid-encoded antibiotic resistant genes.