PCR Detection of *Vibrio parahaemolyticus* in Marine Recreational Waters of Southern California

Gregory Dickinson
Mentor: Sunny Jiang

Vibrios are important human pathogens found in coastal waters. More specifically, *Vibrio parahaemolyticus* is one of the most common *Vibrios* associated with bacterial infection in the United States. The occurrence of *Vibrios* has been investigated in marine waters in many parts of the world. In conjunction with the Southern California Coastal Water Research Project, we sampled two California marine recreational beaches at Doheny State Beach and Avalon, Catalina Island to determine the frequency and distribution of *Vibrio parahaemolyticus* species and toxic genes. Bacteria were collected onto 0.45 μm pore-size membrane filters and placed in an enrichment media selective for *Vibrio* growth. Bacterial genomic DNA was then extracted and analyzed by PCR for species and toxin gene markers. Of 66 samples from the Doheny Beach 27.3% were positive for *V. parahaemolyticus*, and one sample (1.5%) was positive for the *V. parahaemolyticus* toxin gene. Of the 96 samples from Avalon Harbor 69.8% were positive for *V. parahaemolyticus*, and 5.2% were positive for the *V. parahaemolyticus* toxin gene. Detection of the *V. parahaemolyticus* genetic marker was significantly more frequent at Avalon.