

Screening and identification of quorum sensing degraders from live feed Artemia

ABSTRACT

Quorum sensing (QS) is bacterial cell-to-cell communication with small signal molecules such as acyl-homoserine lactones (AHL) that control a number of phenotypes including the regulation of virulence determinants in pathogenic bacteria. Therefore, quorum sensing degrader has been suggested as one of the biocontrol strategies to fight bacterial infections. In the present study, different bacterial QS degrader strains were isolated from Artemia and screened using *Chromobacterium violaceum* CV026 bioassay. The results showed that six bacterial strains (four Gram-positive and two Gram-negative) isolated from Artemia were able to degrade AHL in two different in vitro assays. All the strains were later identified through 16S rRNA gene sequencing as *Rhodococcus opacus*, *Streptosporangium roseum*, *Streptomyces alboniger*, *Enterobacter cloacae* and *Bacillus litoralis*. Highest bacterial AHL degrader, *Bacillus litoralis* BP-ART/6 fully degraded 10 ppm AHL in 9 hrs. The present study showed that bacterial strains isolated from Artemia can act as a QS degrader.

Keyword: Artemia; Quorum sensing; Quorum sensing degrader