

Synthesis of C₁₀-Homoserine Lactones as Quorum Sensing Modulators in *Chromobacterium violaceum*

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In light of the rapid tendency of bacteria to develop resistance to current treatment, quorum sensing (QS) inhibition establishes a promising strategy. QS is a mechanism that bacteria have to communicate through chemical signals. These signals, also known as autoinducers, regulate gene expression for pathogenic traits such as virulence and biofilm formation. In gram-negative bacteria, these chemical signals are known to have a general structure of *N*-acylated-L-homoserine lactone (AHL), with variations on the aliphatic acyl region. Using a natural autoinducer of *Chromobacterium violaceum* as our base, we propose a series of monounsaturated and methoxylated C₁₀-AHL. The design and study of novel AHL forges a scaffold of compounds that could lead to a better understanding of the QS circuit to develop of potential therapies.