

Applications:

- Antibiotic coatings for medical devices and implants, surgical equipment (dressings, catheters, etc.)
- Antibiotic coatings for consumer products such as wipes and detergents
- Pharmaceuticals: QS molecules can be conjugated with current antibiotics for greater efficacy

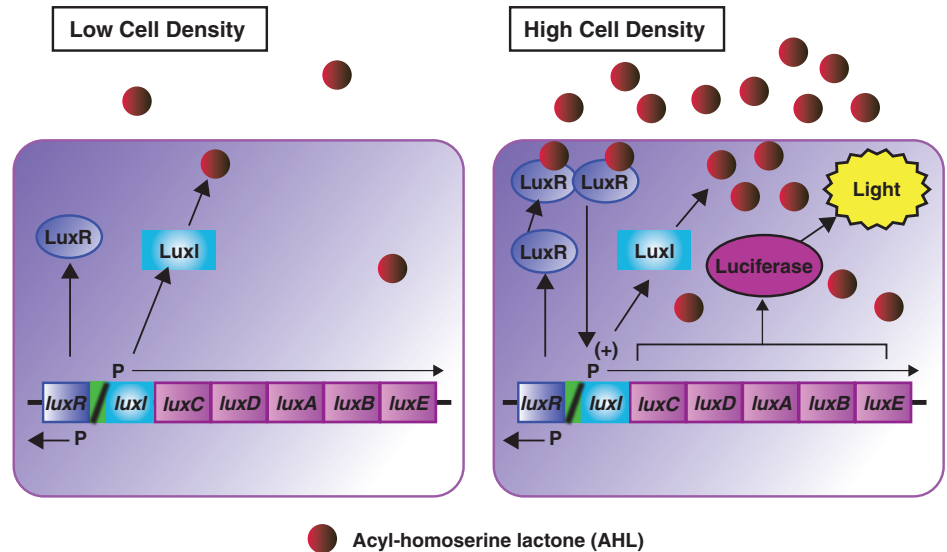
Benefits:

- Eliminates propagation of bacteria
- Reduces health care costs
- Reduces additional complications arising from infection
- Cost-effective to manufacture

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Quorum Sensing



● Acyl-homoserine lactone (AHL)
Proposed mechanism of quorum sensing.

Summary:

One of the missions of Los Alamos National Laboratory is to ensure that the U.S. is secure from multiple varieties of threats, including biological. Recent work in this area has led to the identification of a sophisticated, bacterial intercellular communication system that relies on the production and release of the quorum sensing (QS) molecules. These molecules control the expression of multiple target genes that play a pivotal role in virulence and pathogenicity in the host. QS systems are employed by mammalian and plant pathogens to manifest an infection by regulating the bacterial strategy and, conceivably, the host response. For example, the QS system in *Pseudomonas aeruginosa* is known to regulate several aspects of pathogenesis including virulence factor production, biofilm development, and antibiotic resistance.

Development Stage:

Los Alamos researchers have identified characterized and synthesized analogs of several QS molecules that are currently being tested *in vivo*.

Patent Status:

Provisional patent applications filed

Licensing Status:

Los Alamos is looking for a development partner interested in applying the technology and generating novel intellectual property.