Quorum Sensing in Bacteria

Questions on reading and video

1. Explain why free-living bacteria of the species *Vibrio fischeri* are not luminescent while denser populations are.
2. Why do you suppose the scientists used *E.coli* to do this research?
3. Name the chemical messenger that is used in this example to communicate between cells.
4. When AHL enters a cell, what does it activate?
5. In the video, the production of AHL is labeled as a “positive feedback loop.” Explain why.
6. In the video, the action of the aiiA gene is labeled as a “negative feedback loop.” Explain why.
7. What is the function of the aiiA gene? Speculate as to its role in this synthetic clock?
8. Why did the scientists add GFP (green fluorescent protein) to the *E. coli* ?
9. What is the evolutionary advantage of quorum sensing in bacteria?
10. In what ways does quorum sensing give bacteria qualities of multicellularity?