Supathep Tansirichaiya

Acceptance speech

Antibiotic resistance is currently one of the major global healthcare problems, causing higher morbidity and mortality every year. Bacteria can become resistant by exchanging resistance genes between each other. This process is usually facilitated by mobile genetic elements, a type of DNA that can move within and between bacteria. My project was about the detection and the nature of mobile genetic elements in the human oral bacteria.

I have developed the techniques that can be used to detect different types of mobile genetic elements in the human oral cavity, which antimicrobial resistance and other adaptive genes were identified to be carried by these mobile genetic elements. I have then investigated integrons, a type of mobile genetic elements, in more depth and have identified a group of genes carrying by integrons that can promote other genes in integrons. In order to easily detect for these group of genes, I have developed the detection system which allows us to directly visualize the bacteria containing these genes on agar plates.

A fundamental understanding of mobile genetic elements is a prerequisite and urgently required to designing strategies to stop its spread. All of the techniques and constructs that I designed can be used for this purpose, and also can be applied to a wide variety of different academic projects. Therefore, it could be beneficial to not only for Thailand, but can also have an impact globally.

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