



**Dr. Edward Wong**

## Protein and Metabolic Engineering As An Enabling Tool For Synthetic Biology

Natural products have been frequently used not only for biomedical purposes but also in the field of biotechnology. But, the availability of these natural products as a pure compounds and its sourcing have always been a challenge to the scientists in drug discovery and expanding the diversity of natural product. Recently, the development of synthetic biology has opened the door to the creation of these products. The fascinating field of protein engineering has provided the breakthrough by engineering the natural products to improve its specificity and functionalities, leading to the widely used of these products in different applications. On the other hand, the development of metabolic engineering enable the bioengineers to modulate the strain of microbial as a cell factory to improve the production. In this presentation, we are going to discuss the two different tools that offered by GenScript, known as precision mutant library (PML) and combinatorial DNA assembly library, in protein and metabolic engineering, respectively.

### Key points to be covered:

- 1) The development of protein and metabolic engineering in synthetic biology
- 2) The importance of key features of PML in protein engineering
- 3) The use of combinatorial DNA libraries, as a powerful and high-throughput tools, for metabolic engineering

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