

Recent advancement of engineering microbial hosts for the biotechnological production of flavonoids

ABSTRACT

Flavonoids are polyphenols that are important organic chemicals in plants. The health benefits of flavonoids that result in high commercial values make them attractive targets for large-scale production through bioengineering. Strategies such as engineering a flavonoid biosynthetic pathway in microbial hosts provide an alternative way to produce these beneficial compounds. *Escherichia coli*, *Saccharomyces cerevisiae* and *Streptomyces* sp. are among the expression systems used to produce recombinant products, as well as for the production of flavonoid compounds through various bioengineering approaches including clustered regularly interspaced short palindromic repeats (CRISPR)-based genome engineering and genetically encoded biosensors to detect flavonoid biosynthesis. In this study, we review the recent advances in engineering model microbial hosts as being the factory to produce targeted flavonoid compounds.

Keyword: Flavonoid; Metabolic engineering; *Escherichia coli*; *Saccharomyces cerevisiae*; *Streptomyces* sp.