Traditionally p-coumaric acid is obtained by either chemical synthesis or by extraction from plants. These traditional processes have some drawbacks like high production costs, toxic by-products, and less product yields (Gao *et al.* 2021). Hence, our study plans to evaluate feasibility of the bioproduction of p-coumaric acid using photoautotrophic Synechocystis sp. PCC6803 as cell factories. These cyanobacteria consume CO2 as substrates and also consume glucose as co-substrates. This makes it fascinating to study their potential as cell factories for p-coumaric acid bioproduction.

Three important metrics play an important role in determining performance of a bioprocess: Yield, Productivity, and Titer. The problems with poor performance either exists due to the product or due to the host cells. As previously mentioned, a lot of efforts have already been put in increasing titer values of p-coumaric acid from 83 mg/L (Xue *et al.* 2014) to about 200 mg/L (Gao *et al.* 2021), (Brey *et al.* 2020) to further 400 – 800 mg/L (Kukil *et al.* 2022).). Thus, lesser focus will be on improving titer and more on improving yield and productivity values, which seem a bit poor to make the bioproduction feasible. The problems are related to both: product and host cell.

The growth rate of Synechocystis sp PCC6803 is found to be 18 – 24 times less than *E. coli* strains. Focus would be on optimizing media and conditions to improve its growth. Moreover, the productivity values based on cell dry weight are also found to be in the order of 10-5 to 10-6 g/g DW/h. Focus here would be on directing more flux towards producing p-coumaric acid and also on improving product secretion from host cells although no information has been found on intracellular product amounts.