The role of metabolic engineering in the production of secondary metabolites

In the production of secondary metabolites yield and productivity are the most important design parameters. The focus is therefore to direct the carbon fluxes towards the product of interest, and this can be obtained through metabolic engineering whereby directed genetic changes are introduced into the production strain. In this process it is, however, important to analyze the metabolic network through measurement of the intracellular metabolites and the flux distributions. Besides playing an important role in the optimization of existing processes, metabolic engineering also offers the possibility to construct strains that produce novel metabolites, either through the recruitment of heterologous enzyme activities or through introduction of specific mutations in catalytic activities.
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