

Repurposing *Kluyveromyces marxianus* aromatic compounds chassis strains for the production of violacein-related dyes

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Abstract:

The availability of synthetic biology tools makes *Kluyveromyces marxianus* amenable to metabolic engineering for the production of value-added compounds. Previous work generated chassis strains for the production of aromatic compounds and this project aims to engineer these chassis to produce tryptophan-derived, violacein-related pigments, which may have applications as dyes in the textile sector. A tripartite approach was taken to repurpose the chassis to divert flux towards tryptophan, to enhance tryptophan synthesis from chorismate, and to express heterologous genes for violacein production. We successfully implemented each of these strategies individually and we are now combining them to develop prototype dye production strains.