# Enhenced production of 1,2-propanediol by Metabolically Engineered *S. cerevisiae*

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In this study, *S. cerevisiae* was engineered improve 1,2-propanediol production. Deletion of *tpi1* (triosephosphateisomerase) gene in *S. cerevisiae* increased carbonflux to DHAP (dihydroxylacetonephosphate) in glycolysis, resulting in increased glycerol production. Then, *mgs* and *gldA* genes of which the products convert DHAP to 1,2-propanediol were introduced to the *tpi1* deleted strain using a multicopy plasmid. As expected, the intracellular level of methylglyoxal was increased by introduction of mgs gene in *S. cerevisiae* and that of 1,2-propanediol by introduction of both *mgs* and *gldA* genes. As a result, 1.11 g/l of 1,2-propanediol was achieved in 168 flask culture. We overexpressed *fps1p* gene in *S. cerevisiae* for increasing extracellular concentration of 1,2-propanediol and achieved higher concentration of 1,2-propanediol in extracellular part of the culture.