

### Deletion of *oadGAB* operon in *Mannheimia succiniciproducens*

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Oxaloacetate decarboxylase complex, encoded by *oadGAB* operon in *M. succiniciproducens*, is predicted to convert oxaloacetate into pyruvate, while competing with malate dehydrogenase leading to succinic acid production. As a verification of the homology analysis, *oadGAB* operon of *M. succiniciproducens* was deleted using a markerless gene deletion method. The fermentation of *oadGAB* deletion mutant verified that oxaloacetate decarboxylase did not affect the succinic acid production of wild type *M. succiniciproducens*.