

## Saccharification of soluble starch and ethanol production by isolated microbial strains

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### Abstract

We have isolated and characterized two microbial strains from food waste fermentation broth produced from three-stage methane fermentation system developed in this lab. The strain, which convert soluble starch to glucose, was identified as *Bacillus amyloliquefaciens* K5 based on the 16S rDNA sequence and biochemical studies. Another strain producing ethanol from glucose was identified as *Saccharomyces cerevisiae* KA4 by 26S rDNA D1/D2 sequence. Interestingly *S. cerevisiae* KA4 could grow on YM medium containing soluble starch instead of glucose as a carbon source, however, it could not produce ethanol directly. *Bacillus amyloliquefaciens* K5 produced 30,000 mg/L glucose from 10% starch for 3day. When both strains were inoculated simultaneously to YM medium containing 10% soluble starch, 13,000 mg/L of glucose and 9,200 mg/L of ethanol were produced for 3 day batch fermentation, respectively.

### References

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