

# Impact of butyric acid on butanol formation by *Clostridium pasteurianum*.

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## Abstract

The butanol yield of the classic fermentative acetone-butanol-ethanol (ABE) process has been enhanced in the past decades through the development of better strains and advanced process design. Nevertheless, by-product formation and the incomplete conversion of intermediates still decrease the butanol yield. This study demonstrates the potential of increasing the butanol yield from glycerol through the addition of small amounts of butyric acid. The impact of butyric acid was investigated in a 7L stirred tank reactor. The results of this study show the positive impact of butyric acid on butanol yield under pH controlled conditions and the metabolic stages were monitored via online measurement of carbon dioxide formation, pH value and redox potential. Butyric acid could significantly increase the butanol yield at low pH values if sufficient quantities of primary carbon source (glycerol) were present.

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