

# THE INHIBITORY EFFECT OF THE PRODUCT DIHYDROXYACETONE ON AN AEROBE BACTERIUM IN A SEMI-CONTINUOUS TWO-STAGE REPEATED-FED-BATCH PROCESS

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**Abstract:** *The influence of the product inhibition by dihydroxyacetone (DHA) on Gluconobacter oxydans for a novel semi-continuous two-stage repeated-fed-batch process was examined quantitatively. It was shown that the culture was able to grow up to a DHA concentration of 80 kg/m<sup>3</sup> without any influence of product inhibition. The reachable maximum final DHA concentration was as high as 220 kg/m<sup>3</sup>. The lag phases for growth increased exponentially with increasing DHA threshold values of the first reactor stage.*

**Key words:** *Dihydroxyacetone, Gluconobacter oxydans, Glycerol, Product inhibition, Repeated-fedbatch Process, Semi-continuous operation.*