Novel Nitrogen Sources for Growth of Bacillus Fastidiosus and their Effect on the Activity of NADP-Dependent Glutamate Dehydrogenase

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Abstract
Although *Bacillus fastidiosus* assimilates ammonium formed internally during growth on urate, allantoin or allantoate via NADP-dependent glutamate dehydrogenase (NADP-GDH), growth on exogenous ammonium as nitrogen source has not been observed. Growth on ammonium, urea and ureidoglycolate, intermediates of the urate degradative pathway, was found to occur if the mineral growth medium containing glycerol as a carbon source was supplemented with both allantoin (0.5 mM) and brain heart infusion (BHI, 0.1%, w/v) or yeast extract. Neither allantoin nor BHI supported growth alone or in combination unless ammonium was present. NADP-GDH activity appeared to be regulated only by the extracellular concentration of allantoin or allantoate. Enzyme activity was not influenced by other nitrogen sources or the intracellular ammonium concentration.

Key words
Bacillus fastidiosus
Growth
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