

Carbon Dioxide Effects on the Growth and Metabolites of Morphological Variants of *Streptococcus thermophilus*

Hayette Louaileche¹, Patrice Bracquart¹, Franck Saulnier¹, Michel Desmazeaud¹, and Guy Linden¹

¹ Laboratory of Applied Biochemistry Associated with Institut National de la Recherche Agronomique University of Nancy I BP 239 54506 Vandoeuvre-les-Nancy Cedex, France

The effects were studied of agitation and addition of CO₂ and NaHCO₃ on growth of two morphological variants of *Streptococcus thermophilus* CNRZ 368 that differed in their cell morphology and chain length. The growth yield of the diffuse variant (D12) was decreased by agitation of the culture and increased by the addition of CO₂, Tween 80, and NaHCO₃. The growth of the opaque variant (D31) was unaffected either by the agitation or by addition of CO₂ but was stimulated by addition of NaHCO₃. The culture inhibition of D12, when it is agitated, was not reversed by addition of catalase. The results suggest that agitation may exert its influence on growth of D12 through a CO₂ deficiency. The NaHCO₃ did not affect activity of glycolytic enzymes but increased production of lactic, acetic, and formic acids.

Key Words: *Streptococcus thermophilus* • morphological variants • carbon dioxide • metabolites production

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