

**QUATERNARY AMMONIUM SALTS AND THEIR CORRESPONDING
AMINES AS GROWTH INHIBITORS OF BAKER'S YEAST
*SACCHAROMYCES CEREVISIAE***

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In order to get some insight into the relationship between their biological activity and structure, a set of aliphatic aminoesters (n-alkyl N,N-dimethylglycinates, DMG-n) and corresponding quaternary ammonium salts like methyl bromides (QAS, DMGM-n) were tested on the baker's yeast, *Saccharomyces cerevisiae*. It was found that the inhibitory activities of both types of compound had a similar dependence on the aliphatic chain length; the lowest minimal inhibitory concentration (MIC) was for compounds with 10 and 12 carbon atom chain lengths. The activity of the quaternary ammonium salt was clearly pH-dependent; the MIC at pH 8 in each case was lower than at pH 6. A pH influence on sensitivity to aminoesters was not observed. This is the first difference between the aminoesters and the QAS-ses.

The second difference between the DMG-n and the corresponding QAS-es was their influence on sensitivity of the yeast's respiratory competence. The respiratory deficiency characterising rho⁰ mutants increases the sensitivity to QAS, while the aminoesters seem to decrease the growth rate only of the mutants. The MIC for the father compounds is even higher. This independence of MIC from respiratory competence was observed at both pH values.

Similar regularities was found when the activity of the compounds on yeast plasma membrane H⁺-ATPase was compared; the J₅₀ (the concentration inhibiting ATPase activity to 50%) value of QAS and DMG-n were at the same level as the MIC. However neither DMG-n nor QAS inhibited mitochondrial ATPase activity.

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