E317

Spores in submerged culture of *Streptomyces coelicolor* A3(2)

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We investgated the sporulation of *S. coelicolor* A3(2) and *S. viridochromogenes* grown in shaking culture. The sporulaton was assayed on the basis of the resistance against the sonication and lysozyme treatment. In yeast extract-malt extract liquid medium, *S. viridochromogenes* showed the sporulation, whereas *S. coelolor* A3(2) did not display the resistance. This results were in good agreement with the microscopic observation which showed the spore chains of *S. viridochromogenes* but no spore chains of *S. coelicolor* A3(2). However, in a medium designed by us, which had MOPS as a buffer, *S. coelicolor* A3(2) developed the resistant spores. Most spores appeared as single identities, and spore chains were seldom to be seen. This might be the result of the strong autolysis of the mycelia in this liquid medium.

E318

Lipid accumulation and actinorhodin production of *S.coelicolor A3(2)* with the effects of H_2O_2

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In YEME(ISP No. 2) medium, *S. coelicolor A3(2)* accumulated neutral lipids in mycelia that were increased by glucose addition, but the polar lipids presented the constant level. The content of neutral lipids showed low level in the presence of ammonium ion, and actinorhodin has begun to be produced when the neutral lipids were disappeared. Soluble pigments containing actinorhodin were shown to have radioactivity after C^{14}-oleic acid was incorporated into lipids. Actinorhodin decreased with H_2O_2 treatment at 12 hours cultivation, whereas the H_2O_2 treatment at any other incubation time showed much low effect. 200 uM H_2O_2 shock elicited the reduced production of actinorhodin, which might be related to the low level of the neutral lipid consumption.