CHLORAMPHENICOL FROM *STREPTOSPORANGIUM VIRIDOGRISEUM* VAR. *KOFUENSE*

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In a continuing search for less known genera of the Actinomycetales as producers of new antibiotic substances, we noted that chloramphenicol was produced from *Streptosporangium viridogriseum* var. *kofuense* (S_2-28), which was isolated from soil and described by NONOMURA and OHARA[1]. This report presents initial data concerning the isolation of chloramphenicol from the streptosporangium.

When the producing strain (S_2-28) was submerge-cultured in a medium composed of 5 % glycerol and 1.5 % defatted soybean meal (pH 6.0), maximum activities against *Staphylococcus aureus* and *Escherichia coli* were attained after 48~72 hours.

The cultured broth was freed from mycelium and extracted with ethyl acetate at pH 4.5. The extract was washed with sodium carbonate buffer of pH 10. The ethyl acetate solution of the antibiotic was evaporated to dryness yielding a yellowish brown oily substance, which was then washed with *n*-hexane to remove lipids. The residue was dissolved in a small volume of ethanol and precipitated by adding ten parts of *n*-hexane. From 50 liters of cultured broth, 3 g of crude crystals were isolated. They were further recrystallized from a mixture of ethanol and *n*-hexane.

Colorless needles or elongated plate crystals were obtained. The crystallized substance was identified as chloramphenicol, D(−)-*threo*-1-*p*-nitrophenyl-2-dichloroacetamido-1,3-propandiol, on the basis of the following data:

Analysis, found: C 40.74, H 3.55, N 8.64, Cl 21.97

Calcd. for $C_{11}H_{12}O_5N_2Cl_2$: C 40.88, H 3.74, N 8.67, Cl 21.95

m.p. 152~154° (dec.). No depression when mixed with chloramphenicol.

$[\alpha]_D^{27}$ −25.4° (*c* 1.07, ethyl acetate).

$[\alpha]_D^{27}$ +15.5° (*c* 0.915, ethanol).

TLC on silicagel, solvent systems chloroform - methanol (95 : 5) and ethyl acetate: Rf identical with chloramphenicol.

UV spectrum (in water): λ_{max} 280 mμ (log ε 3.97).

IR spectrum (in KBr disk) and NMR spectrum (in DMSO-d_6 solution): identical with chloramphenicol.

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Reference

1) NONOMURA, H. & Y. OHARA: Distribution of Actinomycetes in soil. VII. A culture method effective for both preferential isolation and enumeration of *Microbispora* and *Streptosporangium* strains in soil. 2. Classification of the isolates. J. Ferment. Tech. 47 : 701~709, 1969