Studies on the Antibiotic Substances from Actinomyces. 16th Report.
(Preliminary note)

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It is already well known, that an antagonistic streptomyces has a characteristic property to grow abundantly on a nutrient agar, which contains an antibiotic produced by the same streptomyces in such an amount that the other strains of streptomyces can not grow well.

This fact lead us to an idea of an additional use of streptomyces to “antibacterial spectrum,” namely to the cross-inhibition test between streptomyces themselves.

Fifteen cc of 1 per cent glucose nutrient agar was distributed in Petri dishes each, and after solidification, a strain of inhibitory streptomyces was streaked diametrically in a straight line, and incubated for 3 days at 27°C. Then many strains of the test streptomyces including own strain were streaked at the side of the growing streptomyces perpendicular. After 3 days incubation, the lengths of the inhibition zones was measured in mm.

Ten representative strains of active streptomyces, viz., streptomycin-, streptomycin-like substance-, streptothricin type 1-, 2- and 3-, chloramphenicol-, aureomycin-, special substance Nos. 1-, 2- and 3-producing strains were examined in the way mentioned above. From the results, it was concluded as follows:

1. All strains which produce specific antibiotics respectively, do not inhibit their own strains as a rule, while they inhibit the other strains more or less according to their similarities.

2. However, there are some exceptions from these fundamental principles.