THE EFFECT OF PODOPHYLLIN ON EBERTHELLA TYPHOSA

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Recently, podophyllin, which is a resin of "podophyllum" and similar in many respects to colchicine, has been used in cytological research. Sullivan and Wechsler (1947) report the similarity of the action of podophyllin to that of colchicine on young, growing root tips of Allium cepa. The spindle mechanism was evidently impaired, and pronounced cytological effects were noted in the late prophase. The present report is concerned with the effect of podophyllin on two strains of Ebettella typhosa.

It was of interest to note whether there would be any changes in the colonial character of two strains of Ebettella typhosa when exposed to a saturated solution of podophyllin in nutrient broth.

The one strain of Ebettella typhosa used in this study produced typical S type colonies on nutrient agar. A single cell of this culture was isolated and put into nutrient broth for a previous study concerning the effects of X-rays on this strain (Grainger, 1947), as well as for this study. The strain was characteristic of the species in respect to all the biochemical and physiological characteristics as described in Bergey's Manual (1939).

The other strain of Ebettella typhosa used produced typical R type colonies on nutrient agar. It had been isolated recently in another study and was characteristic of the species in respect to all the biochemical and physiological characteristics as described in Bergey's Manual (1939), except for one difference—this strain would not ferment the sugar galactose.

The resin of podophyllum (Merck) used in this study was found to be only slightly soluble in water and gave a light brown color to the solution. A small amount (1 gram) was added to each of two flasks that contained 100 ml of nutrient broth. This amount allowed for a well-saturated solution of podophyllin in the broth. The reaction was adjusted to pH 7.0, and the material was then sterilized.

One loopful of a 24-hour nutrient broth culture of the S strain of Ebettella typhosa was placed in the flask of nutrient broth containing the podophyllin. One loopful of the same S strain was also added to a flask containing 100 ml of nutrient broth. This served as a control. The same procedure was followed with the R strain of Ebettella typhosa. The flasks were then placed in the incubator at 37 C.

Subcultures were made daily on nutrient agar plates by the streak method from the flasks containing the S and R cultures with the podophyllin in the nutrient broth, as well as from the flasks of nutrient broth which served as the controls. The colonies were studied by means of a colony microscope lens (3 X) to note any changes in morphology. At least 100 well-isolated colonies were
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studied daily on the nutrient agar obtained from the subcultures from each flask for a period of 30 days. There was no difference noted in the colonies from either the S or the R cultures of Eberthella typhosa in the flasks containing the podophyllin in nutrient broth, as compared with the S and the R colonies from the control flasks of nutrient broth. Occasionally, however, an intermediate form was observed from the S culture from the flask containing the podophyllin, but this was also observed from the control broth. There was no difference in the colonial character noted from the R culture in either the test flask or the control.

SUMMARY

The resin of "podophyllum" (podophyllin) saturated in nutrient broth did not have any effect on the colonial character of a S or R strain of Eberthella typhosa.

REFERENCES

