

Preliminary Observations on Antifungal and Anti-Bacterial Activity of Alpha-trinitromethylmercuriacetanilide

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ORGANOMERCURIALS are time honoured antibacterial and antifungal compounds. A series of such compounds have been studied by various workers and some of them are being used therapeutically. Chemistry Department of the Sardar Patel University had synthesized several such compounds. It was felt interesting to attempt a preliminary screening for the antifungal and antibacterial activity of a representative compound Alpha-trinitromethylmercuri acetoacetanilide.

Antifungal: Aspergillus, Mucor, Penicillium and Rhizopus species of fungi were grown on Sabouraud's agar media. The cup plate method (Merchant and Packer 1969) was used to note the antifungal activity. The Alpha-trinitromethylmercuri acetoacetanilide (Alpha-tma) was dissolved in acetone to prepare 0.053% (10^{-3} m) solution and placed in the agar cup in the testing plate. Plain acetone was used as control in a similar manner. Plates after sowing the fungi culture, and with test

drugs in the cup were incubated for 96 hours at room temp., and sensitivity readings were recorded. Four replicates of each set were maintained. The mean sensitivity effects on Aspergillus and Rhizopus were excellent (+++) on Mucor it was fair (+) and Pencillium was not sensitive⁽⁻⁾ at all. The controls were negative.

Antibacterial: E. coli and Staphylococcus aureus were taken for this study. Standard cup plate method and pouring method (Merchant and Packer 1969) were used. 0.053% (10^{-3} m) solution of Alplatma in acetone was used. Sensitivity of solid powder particles was also seen. Controls were maintained in similar manner and four replicates were processed. The plates were incubated at 37°C overnight and the results were recorded. The mean sensitivity effects on E. coli was excellent(+++) and on Staphylococcus aureus was good(++). The controls were negative. The solution and powder of the test material behaved in a similar manner. The compound Alpha-tma was found sensitive to both Gram positive and negative bacteria.

Pharmacological: The compound was given at varying doses of 0.053% sol. intravenously in dogs. In Kymograph tracings on blood pressure and respiration of dog (5 to 6 kg — four) under

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pentobarbitone (30 mg/kg/IV), it was recorded that the compound produced a transient slight fall in blood pressure which was not blocked by atropine or antihistamine. Further detailed study is indicated.

Summary: Organomercurial compound Alpha-trinitromethy-mercuriaceto

acetanilide has shown '*in vitro*' anti-fungal and antibacterial activity against the fungi *Rhizopus* and *Aspergillus* and the bacteria *E. coli* and *Staph. aureus*

REFERENCES

- Merchant, I.A. and R.A. Packer. 1969. *Veterinary Bacteriology and Virology* 7th Ed. Iowa State Uni. Press. U.S.A.; p. 94.