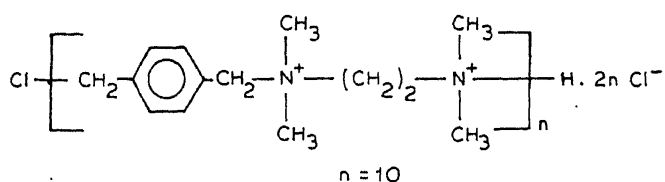


ionone polymers are structurally related to spermine, spermidine and their methylated derivatives<sup>1</sup>. Polymers containing cationic centres form very interesting polysalts, which have a variety of uses<sup>2</sup>. Since a polycation of high positive charge could lead to organic materials of high conductivity, this type of polymer is of considerable interest. The synthetic polycation polylysine inhibits the infectivity of tobacco mosaic virus as well as some animal viruses and bacteriophages, and the growth of numerous bacteria<sup>3</sup>. Polycations constitute an important group of biologically active molecules that have shown considerable promise in prophylaxis and chemotherapy of viral infections<sup>4</sup>. It is well known that polycations interact with nucleic acids and  $\alpha$ -amylases<sup>5</sup>. This communication reports antibacterial activity of a synthetic polycation.

The polycation shown below was synthesized according to the procedure described earlier<sup>6,7</sup>. It was screened for activity against eight bacterial species, viz. *Escherichia coli*, *Pseudomonas alkaligenes*, *Bacillus subtilis*, *Proteus vulgaris*, *Serratia marcescens*, *Vibrio cholerae*, *Shigella sonnei* and *Salmonella typhi*. Antibacterial activity was assessed by the cup plate method<sup>8</sup>. The base layer medium was melted on a water bath and cooled to 55°C. Aliquots of 20 ml of liquid medium were distributed to each petri dish and allowed to solidify. The seed layer medium was melted and cooled to 45–50°C with gentle shaking. Overnight culture (2%) was added aseptically to the seed layer medium, which was then mixed thoroughly and quickly poured into petri dishes containing the base layer. After solidification and cooling, cups were made by punching into the set agar with a sterile cork borer and scooping out the punched part. The diameter of each cup was 10 mm. To these cups, 0.1 ml (9  $\mu$ g) of a solution of the polycation in distilled water was added using a sterile. The plates were kept in the cold for an hour to facilitate diffusion. They were then incubated at 37°C for 48 h. Aqueous phenol (5%) was used as positive control. The results are summarized in table 1.

On the basis of these observations the polycation is highly active against *E. coli* and *P. alkaligenes*, moderately active against *S. typhi*, and less active



**Table 1** Antibacterial activity of polycation

Organism	Zone of inhibition (mm)
<i>E. coli</i>	25–32
<i>P. alkaligenes</i>	25–32
<i>S. typhi</i>	20–25
<i>P. vulgaris</i>	15–20
<i>S. marcescens</i>	15–20
<i>V. cholerae</i>	—
<i>S. sonnei</i>	—
<i>B. subtilis</i>	—

—, No inhibition.

against *P. vulgaris* and *S. marcescens*. It was inactive against the other microorganisms tested.

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## PHOSPHAMIDON-INDUCED CHANGES IN HEPATIC ENZYMES OF MOUSE

PRADEEP BHATNAGAR and NIRMALA JAIN  
Entomology and Toxicology Unit, Department of Zoology,  
University of Rajasthan, Jaipur 302 004, India

PHOSPHAMIDON (*O,O*-dimethyl-*O*-1-methyl-2-chloro-2-diethylcarbamoylvinyl phosphate) is an organophosphate systemic acaricide. It is extensively used against sucking, chewing and mining insects. The