

LETTERS TO THE EDITOR

capable of precipitating relatively small molecules of ribonucleic acid of the "soluble" type.

The reaction between heparin and streptomycin is sensitive to the ionic strength of the medium. The interference of some representative halides with this reaction is presented in Table I. It is reasonable to assume that the neutralisation of the sulphate groups of heparin by the guanidine residues in the streptomycin molecule leads to reversible breaking of the hydrogen bonds between the polyanion and water. It thus seems that the interaction between soluble polyelectrolytes does not lead to the formation of firm covalent bonded complexes. Therefore, it is essential to desalt the assayed sample before the addition of streptomycin, and to prepare the latter reagent with deionised water.

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Colomycin and Polymixin E

SIR,—During investigations upon the mode of action of the polypeptide antibiotic colomycin and using *Escherichia coli* we were impressed by the close similarity between colomycin and polymixin E as judged by the effect of inoculum size on minimum inhibitory concentration, the adsorption of the antibiotics from aqueous solution by washed suspensions of the test organism, and the pattern of leakage of cellular material absorbing at 260 m μ .

Subsequent investigations showed that the two samples possessed indistinguishable infra-red spectra when examined in KBr discs. The effects of varying the concentrations of each antibiotic upon the surface tension of water were identical as measured by the De Nouy tensiometer.

R_F values using paper chromatography and two solvent systems are shown in Table I.

TABLE I
 R_F VALUES OF COLOMYCIN AND POLYMYXIN E USING TWO SOLVENT SYSTEMS

Solvent system	R_F	
	Colomycin	Polymixin E
n-Butanol : glacial acetic acid : water 4 : 1 : 5	0.398	0.397
n-Butanol : glacial acetic acid : acetone : water 2 : 0.5 : 2.1 : 0.1	0.75	0.74

A mixture of colomycin and polymixin E ran as one spot using the same solvent systems. Both samples were hydrolysed with 5N hydrochloric acid

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(6 hr. at 125°). The hydrolysates were subjected to ion-exchange chromatography by the method of Moore and Stein (1951) but using Zeo-carb 215. The percentage content of threonine, leucine and 1,3-diaminobutyric acid obtained by this method were as shown in Table II.

TABLE II
PERCENTAGE CONTENT OF THREE AMINO-ACIDS IN HYDROLYSATES OF COLOMYCIN AND POLYMXIN

	Threonine	Leucine	1,3-Diaminobutyric acid
Colomycin	18.6	25.3	56.1
Polymixin E	20.7	22.7	56.5

We feel that these data, although obtained with colomycin from a different source, might be of interest in view of the findings of Wilkinson (1963).

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