removal of serum proteins before the addition of tracer. This will avoid the "damage" which constantly occurs when tracer quantities of labelled protein hormones are incubated in the presence of serum.

We suggest that the combination of these several advantages of the solid phase-antibody system should make it a powerful tool for measuring minute quantities of antigen by a radioimmunoassay procedure.

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MICROBIOLOGY

Changes in Transforming DNA in Pneumococcus

DURING the course of an investigation involving the transforming ability of pneumococcal DNA, an interesting correlation was found between the transforming activity of lysates prepared at varying times from the same culture and the number of viable organisms in the culture. *Streptococcus pneumoniae*, strain Aml, an aminopterin resistant strain derived from strain *R36A* of Avery *et al.*[1], was grown first in P medium and then in NS medium in the manner designed to promote competence[2]. At appropriate times, 1·0 ml. aliquots of the culture in NS medium were lysed in the presence of sodium citrate by the addition of sodium deoxycholate, and the DNA was precipitated with ethyl alcohol using sodium hyaluronate as coprecipitant[2]. In one of the experiments to be discussed another aliquot was taken at the same time as that for the lysate, and, after suitable dilution, was plated out in triplicate for a viable count. The lysates were assayed for their transforming activity with respect to resistance to aminopterin by a conventional method[2], using *Str. pneumoniae* strain Cl. 3 as the receptor organism.

The results obtained are summarized in Table 1. The viable counts have been expressed as multiples of the count obtained at the time of the first sample. In the first experiment the culture did not undergo a complete division during the period of observation. The viable counts were not corrected for the average chain length, but the chain length would not be expected to increase by more than 1 per cent in this time. In the second experiment the viable count was not carried out and the figures for the multiple of the viable count quoted in Table 1 are the average from three growth curves determined in comparable conditions in the course of other experiments.

Table 1. TRANSFORMING ACTIVITY OF LYSATES PREPARED AT DIFFERENT TIMES FROM THE SAME CULTURE

Time at which lysate was prepared (min)	No. of transformants (T) ($\times 10^3$)	Viable count ($\times 10^6$)	Multiple of viable count (M)	Estimated multiple of viable count (see text)	$\frac{T}{M} \times 10^3$
		Experiment 1			
100	3·87	8·63	1	—	3·87
105	8·38	9·70	1·13	—	7·34
110	10·2	11·2	1·3	—	7·8
115	9·30	9·77	1·13	—	8·2
		Experiment 2			
80	0·9	—	—	1	0·9
100	4·3	—	—	1·51	2·85
120	42·4	—	—	1·87	22·67

The numbers of samples are small for an extensive statistical analysis, but it will suffice to comment that the results of experiment 2 show no overlap, while in experiment 1 the transforming activity at 110 min compared with that at 100 min was significant at $P < 0·05$ in the Student t test.

The ratio of the number of transformants to the multiple of the viable count shows a marked increase with the increase in age of the culture from which the transforming lysate is prepared. If it is assumed that the relative number of organisms present at each time can be taken as a rough measure of the relative amount of the *AmiA–r*1 gene contained in each lysate, it would appear that the increase in the transforming activity of the lysates cannot be explained solely by an increase in the amount of the gene in each aliquot. This would suggest that qualitative changes occur in the DNA during its replication which manifest themselves as changes in its transforming ability. The lysate would also contain DNA contributed from any autolysed cells, but, at the very most, this would represent only a doubling, and the DNA itself would have been exposed to DNase simultaneously released.

An alternative explanation would relate the increased transforming activity to an increase in the amount of the gene in each cell as a result of DNA synthesis disproportionate to the extent of cell division. This would imply, to account for the highest ratio observed, that gene replication of seven-fold or more occurred before cell division, and this explanation seems less likely. Further work is in progress to try to elucidate the phenomenon.

The Endowment Fund of St. George's Hospital and the Medical Research Council gave grants to support this work.

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Received December 30, 1966.

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Controlled Investigations in Baboons (*Papio cynocephalus*) on Transmission of *SV*-5 Virus by Contact

THE intranasal infection of vervet monkeys (*Cercopithecus aethiops*) with *SV*-5 virus, which belongs to the parainfluenza 2 group[1], has been reported to result in a disease pattern usually observed in naturally occurring parainfluenza virus infections of man[2,3]. It was suggested, therefore, that this experimental model was potentially useful for the evaluation of appropriate antiviral drugs and also for investigation of the pathology and pathogenesis of acute respiratory viral disease.

Observations made in this laboratory suggest that baboons (*P. cynocephalus*) can also be intranasally infected with *SV*-5 virus, and, furthermore, that this virus infection can be transmitted to uninfected monkeys by contact. The contact infection was thought to be of interest because

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