

desired bodies, which were pelleted out at 100,000*g* in 1 hr. This small pellet was very white, but turned brown when fixed with 1 per cent buffered osmium tetroxide solution. The pellets obtained after centrifuging at 3,000*g* did not, on the other hand, turn brown in osmium tetroxide. The fixed pellets were prepared for electron microscopy in the usual manner employed for tissue. Electron micrographs of thin sections of final pellets are illustrated in Figs. 1 and 2. For comparison, Fig. 3 shows the appearance of particles in tumour cells recently identified as the milk agent^{3,4}.

We have used the same process for purifying the agent from the culture medium of explants of tumour fragments from the RIII mice, as well as from the milk of these mice. The preparation from the milk was not so pure as those from either the tumours or the culture mediums. Milk is rich in non-viral particles, which are not easily separated by the procedure described here.

Profiles of the milk agent are easily recognizable in the electron micrographs. The characteristic structure of these particles consists of a dense nucleoid about 25 μ in diameter contained within a membranous sac about 100 μ in diameter. The nucleoid occasionally appears centred, but more often it is eccentric, appearing near or in contact with the surrounding membrane. The membrane is 8–10 μ thick and appears to be of the same structure and density as the membrane of the cells which liberate the bodies^{3,4}.

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Impairment of Viral Haemagglutination of Red Cells after Treatment with Formalin

It was reported recently¹ that mouse cells treated with formalin were more readily agglutinated by some strains of myxoviruses than were untreated cells, and it was suggested that this finding might have general application.

We wish to report briefly that with some viruses and human red cells, the opposite holds good, and that agglutination may be abolished by formalin treatment.

Group O red cells were treated with formalin as described by Gold, Lockyer and Tovey². They were incubated at 37° overnight, then washed three times in saline. Phosphate-buffered saline, pH 7.4, was used as a diluent in the haemagglutination tests which were carried out in plastic plates at room temperature.

This experiment has now been repeated using the 6-hr. formalin treatment described by Fauconnier and Barua³, but with phosphate-buffered saline instead of isotonic saline for suspending the cells and for the dilutions. The results were similar to the previous experiment and are given in Table 1.

Table 1. EFFECT OF TREATMENT WITH FORMALIN ON AGGLUTINABILITY OF RED CELLS

Virus strains	Reciprocal haemagglutination titre		Ratio A/B
	Fresh cells (A)	Treated with formalin for 6 hr. (B)	
Myxoviruses			
Influenza A (Mel)	80	80	1
Influenza B (Lee)	40	30	1.3
Sendai	8	32	0.25
Columbia SK*	20	20	1
Adenovirus type 9	6,400	300	21
ECHO viruses			
Type 10	96	< 1	> 96
Type 11 (U virus ³)	512	< 1	> 512

* Sheep cells in veronal buffered saline used (ref. 4)

It will be seen that, with the myxoviruses and Col SK virus, the titres are either unchanged or enhanced, but that agglutination has been greatly reduced or abolished in the case of the adenovirus 9 and the two ECHO viruses tested. Other experiments showed that red cells treated with formalin failed to absorb ECHO 10 and 11 viruses, and absorbed adenovirus type 9 less well than untreated cells. Myxoviruses were absorbed equally well by treated and untreated cells. These findings support the view that myxoviruses and Col SK virus⁴ react with similar red-cell receptors, and that these are distinct from those with which ECHO viruses⁵ and adenoviruses react.

These results were obtained in the course of an investigation comparing the haemagglutination reaction found in viruses of various groups and will be published in full later.

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Ploidy of Primary and Metastatic Human Tumours

REPEATED observations conducted over many transplant generations on animal tumours have shown that the modal chromosome ploidy may change during the passages. This change is always toward the higher value of ploidy; changes in the opposite direction have never been observed¹.

Nothing is known about these events in the human tumours since transplantation of tumours from one human being to another is, of course, not feasible. Metastasis in human tumours, however, may be considered a type of self-autotransplantation. The objective of the present study was to compare the cell population ploidy of human primary tumours with that of their metastases. The evidence to be presented was collected from human tumours obtained at surgery (4 breast adenocarcinoma with axillary lymph node metastasis) and at necropsy (1 breast adenocarcinoma with liver and bone metastasis; 1 nasopharyngeal carcinoma with liver and adrenal metastasis).