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Mutants of coliphage BF23 able to propagate on smooth strains of *Salmonella typhimurium*.

The host range of a bacteriophage can be modified by mutation (and/or recombination) either of the host and/or of the bacteriophage. We have previously reported (MOJICA-A & CHARLES, 1975) that coliphage BF23 was able to propagate on rough strains (mutation of the host) of *Salmonella typhimurium* (strains with incomplete lipopolysaccharide of the cell wall), and that the sensitivity of rough strains was dependent on the presence of an intact *bfe*$^+$ gene. Moreover the inability of the phage to propagate on smooth strains was due to failure of the phage to absorb to the bacterial cells.

Unmutagenized stocks of phage BF23 contain phage particles at frequencies of the order of 10^{-9} (this frequency declines with age and can be increased by mutagenesis) that are able to propagate on smooth *S. typhimurium* strains.

Analysis of several spontaneous phage mutants selected for ability to form plaques on smooth *S. typhimurium* strains indicated that :

1. These mutants still required an intact *bfe*$^+$ gene for adsorption.
2. The plaque morphology of the mutants was altered.
3. The phage mutants were unable to propagate on rough strains (either *S. typhimurium* or *Escherichia coli*) because they failed to absorb to this type of cells.
4. Phage mutants reverted to ability to propagate on rough strains at frequencies of about 10^{-8}. Revertants failed to propagate on smooth strains.
5. Mutant phages had a decreased buyoant density in CsCl density gradients ($\varrho = 1.540$ for wild-type phage and 1.490 for the mutants). Revertants had buoyant densities like the wild type.
6. Electron microscopic observations indicated that the mutants lack the tail structure.

The mutation in the phage affects the tail-head assembly system, or alternately it is a negative regulatory mutation that prevents

normal formation of tail structures. At present we can not distinguish between these two possibilities.

The observation that tailless mutants are still able to successfully infect certain types of bacteria suggest that tails are structures of secondary importance in host-phage interactions.

REFERENCE

MOJICA-A, T. & CHARLES, P. (1975) *Arch. internat. Physiol. Biochim.* **83**, 980-981.

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Size of the polyadenylate segment in rabbit globin messenger RNA extracted from spleens and peripheral blood reticulocytes.

The comparison of two messenger RNA (mRNA) populations of different ages coding for the same protein would be very useful for the study of mRNA ageing. For that purpose, we isolated globin mRNA from spleens and from peripheral blood reticulocytes of anaemic rabbits. These two preparations of globin mRNA clearly have different ages (NOKIN *et al.*, 1975).

The lengths of the 3 -polyadenylate segments [poly (A)] of these two classes of globin mRNA have been determined by gel electrophoresis using synthetic poly (A) of known lengths as markers. As minute amounts of material had to be used, the position of the poly (A) segments from mRNA was detected by molecular hybridization with [^{3}H] poly (U) after elution of poly (A) from the gel slices.

The poly (A) sequence of mRNA has been obtained by enzymatic degradation of the rest of the molecule using pancreatic ribonuclease (E.N. 3.1.4.22) and T_1 ribonuclease (E.N. 3.1.4.8). Conditions of digestion have been carefully determined in order to avoid any break in the poly (A) segment and to achieve complete degradation of heteropolymeric sequences.

One founds that the poly (A) segment is 25 to 50 nucleotides

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