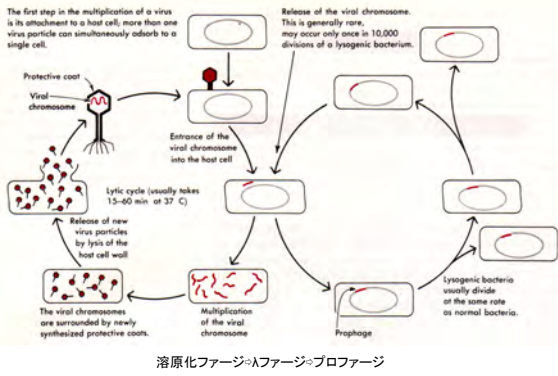
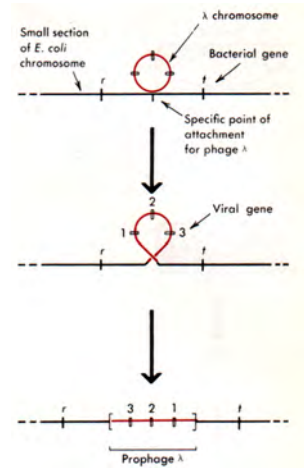


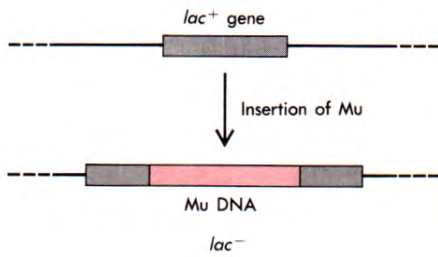
29. The life cycle of a lysogenic bacterial virus



30. Insertion of the chromosome of phage λ into E.coli chromosome

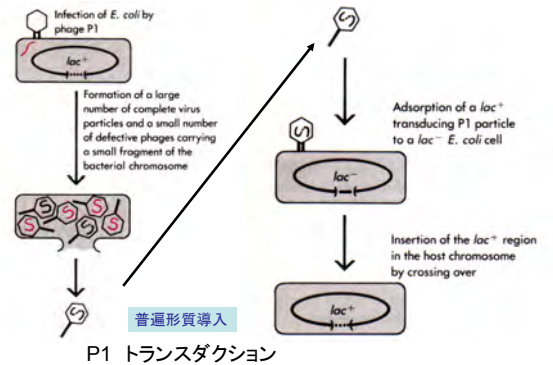


Insertion of Mu DNA

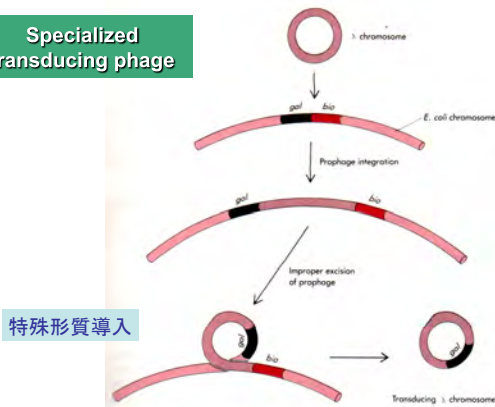


Muはアフージと異なり、挿入が起こる場所はランダムである

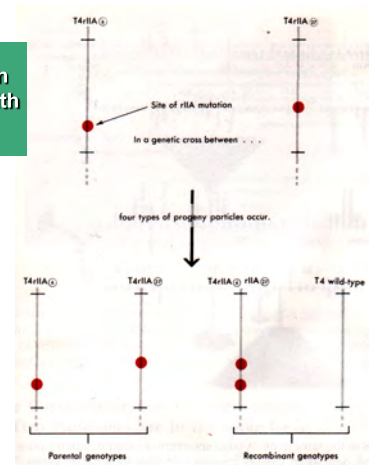
Transduction, the passive transfer of genetic material from one bacterium to another by means of carrier phage particles



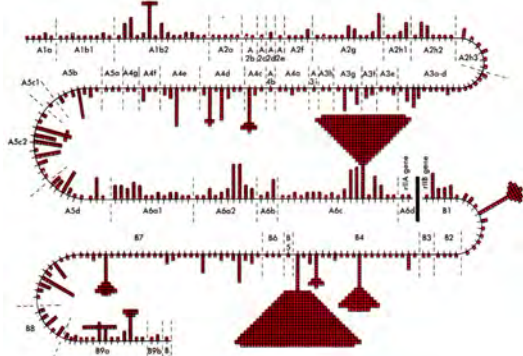
Specialized transducing phage



The demonstration of crossing over with in the gene

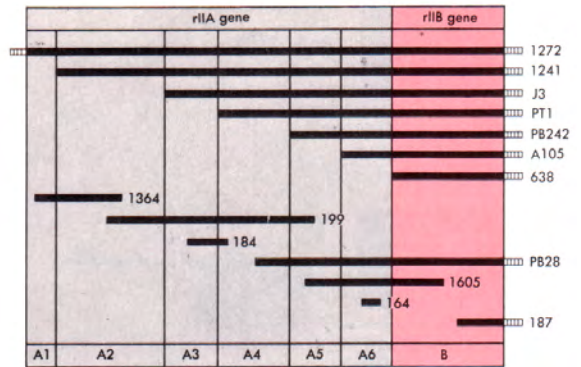


The genetic map of the *rIIA* and *rIIB* genes of phage T4

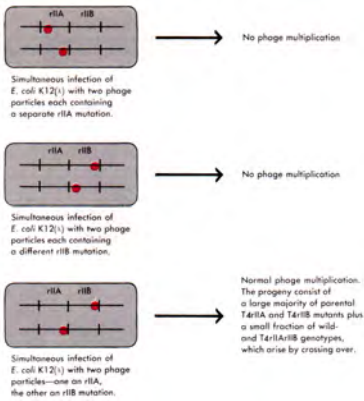


S. Benzer, PNAS, (1961) 多くの変異部位を同定することで、遺伝子には変異する部位がたくさんありそれが線状に配列していることが分かった。

Deletion mutations within the *rII* region of T4



The *rII* region consists of two distinct genes that can complement each other during simultaneous infection

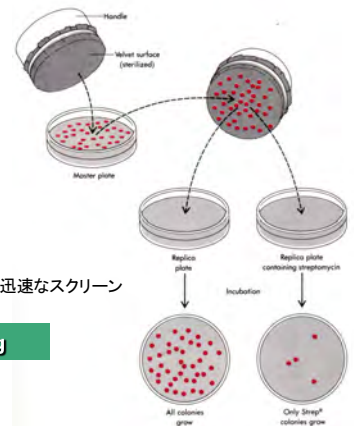
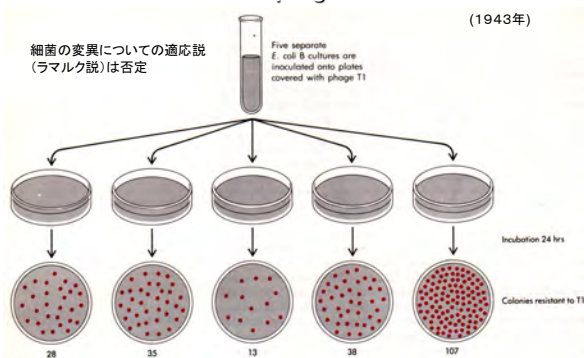


相補性検定
シストランス検定
シストロン

The Genetic Systems Provided by *E. coli*

Molecular Biology of the Gene

1. Fluctuation analysis of bacterial resistance to phage



遺伝マーカーの迅速なスクリーン

2. Replica plating

3. Isolation of mutant E. coli cells with a specific growth factor requirement

必須代謝物合成能に影響を与える変異体の分離

栄養要求株 (auxotroph)
原栄養株 (prototroph)

(1944年)

