Mutagenesis by Acridines in bacteriophage T4

~~Appo~~ Apologies (a) being a geneticist

(b) the title.

Coworkers. Leslie Barnett, Sydney Brenner, Richard Watts-Tobin

ans for Muriel Higby : mutants etc, Alice Orgel

"Facts first"

Main Features of acridine mutagenesis formula for acridines.

1 only in phage ; so far

2 mutants at different sites from B.A. mutants.

3 reversion rules. two main classes. etc.

4 mutants non-leaky. r_{II} . h r O lysozyme.

* → not reporting data on acridine v BA.

but intensive study of ~~R~~ P13 . preliminary data only.

r_{II} system [on board.] →

	B	K(12)λ
+	+	✓
"leaky +"	"+" ... r	✓
r	r	o

- two cistrons.
- mapping : deletion mapping. (take deletion map)

P13 (prob) made with proflavine : inc. revers. with acridines.

reversions : on K [normal r minute]

↳ purified : streaked on B [and F(λ)] all but 2 were "~~[illegible]~~ pseudo-wild.

crossed with wild, using u.v. . gave r's. r's identified.

all in B1 : all non-leaky.

2

Suppressors of suppressors. — S

suppress - - - - of supp. Fig 2 P13 ≡ FCO

Fig 6 — S

Apologia for mapping. NOT COMPLEMENTATION

What will suppress what [41 cases : no 23, yes 18]

Theory 3 accidents add or delete a base. explains - non-leaky - mutation rules.

1 genetic code non overlapping. evidence. — S

how to read? hypothesis.

Call mutants + or −. Fig 2 — S

prediction + with +, − with −, Results.

+ with − ? two wrong readings ∴ arrows. — S

− unacceptable readings — S

− ∴ predictions — Table — S

Why region so large? 1589 complementation test.

A + B cistrons separate. 1589 joins together. — S

Summary of results.

Rigorous theory — + +m, mutation n } direction of reading.
− −m . . . n }.

Slide for triple mutants. 6 (?) cases. — S S S

∴ coding ratio 3 or multiple of 3.

evidence for 3 . 4 more acridine mutants. (now +, two −)

2 hydrazine. (acridine reversible) (−, −)

code degenerate

Summarize conclusions about code

predictions about alteration of protein lysozyme.

Nirenberg system