

T/11/

Dan Lindsley Symposium, UC/San Diego, October 14-15, 1990

What is biological evidence? Summary. SLIDE  
Cairns, Mittler & Lenski  
B. Hall

DIFFERENTIAL MUTATIONS on induction  
In fact there is a handful of simple but persuasive examples,  
at least back to 1973  
BROCK 1971 SLIDE  
??Does Lac induction enhance DES penetration?  
muta action?  
generally  
(other loci not examined)

No effect of IPTG on spontaneous rate  
Kohno & Roth. I.D. Laci: proflavine  
Herman & Dworkin 1971 similar

Differential Repair  
ongoing work from Hanawalt lab.  
Cockayne syndrome, Venema lab

Reed & Hutchinson  
other attr. to replication fork

#### INSERTIONAL MUTAGENESIS

Lodge & Berg  
J Bact 10/90  
Tn5 tet transcription  
Isberg & Syvanan 1982  
DNA gyrase needed for Tn5  
topo I mutation  
Pelement - M. Young  
Retrovirus integration  
numerous reports  
Jaevisch reviewed Scherdin  
from SD state  
Michael Breindl  
mouse fibroblast & germ line  
1. active genes are targetted  
2. insertions near regulatory  
DNase-1 hypersensitive  
therefore lethals

SS-DNA (other non B) DNA in vitro  
deamination of cytosines SS 140 x ds  
200 yrs vs  
30,000 SLIDE

many other mutagens  
e.g. chloroacetaldehyde

On other hand SS-06-MeDNA is not repaired  
by the suicide substrate Me transferase pathway (Lindahl)  
mutations stick

Hot Spots  
many kinds  
CPG (related to methylation)  
at least in euk.-->transcr control  
poly (CG) deletions FUCHS  
related to ZDNA  
Wells: transcription facilitates Z transition

Footprint reagents  
DNase 1  
Uranyl protein binding  
psoralen  
DMS

KMn04 Z  
OSO4 or  
DEPC SSDNA

Site specific  
-ases  
epigenetic  
B subtilis  
Ananaboena  
ph variation  
immunogenesis Yokota 12/89  
brain DNA

DNA - amplif  
Mekalanos  
Roth - growth  
assumed selective  
Pesticide? induced  
DNA amplif  
Soreq...  
Culex?  
Tr - recomb  
yeast SLIDE  
gyrase  
Nal R - gyr A mutants  
resists. EthDr relaxation  
?full methylation?  
MNNG res.  
not to MMS  
EMS  
presume mostly relaxed  
overproduction of groEL

Wrapup SLIDE

Exp paradigm SLIDE

\* Disadvantage, have only just returned to the lab and no new experiments yet. Glad to anticipate in advance acknowledgments to David Thaler and Ken Zahn, who've just joined me.

To talk about genuine plasticity is something of a new departure for me.

SO WHAT long shot - hunt for genes this way  
DRAKE  
BIBL  
THANKS TO ORGANIZERS