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of a specific puff by benzamide in *D.*  
*melanogaster*.

incubated in BM-ringer (1.3mg. BM/ml. ringer; pH - 6.7) for 10 minutes and then transferred to control ringer or BM-ringer respectively, both containing  $H^3$ -uridine (100  $\mu$ Ci/ml.) and incubated for another 10 minutes after which they were fixed, squashed and autoradiographed with Kodak AR 10 stripping film. It has been observed that in comparison with the control gland

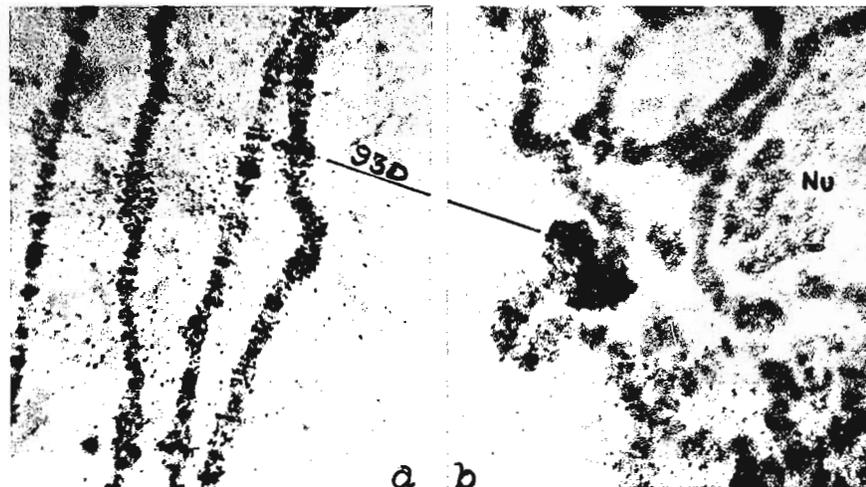


Fig. 1.  $H^3$ -uridine labelling in (a) CONTROL gland and (b) in BM-treated gland from the same larva. Note the labelling on the puff at 93D. In (b) Nu indicates the nucleolus.

in preference to nucleolar RNA (Jacob, et al., 1964). In view of the fact that in the present study also nucleolar RNA is much less affected while the puff at 93D is super-activated, it is tempting to speculate whether this particular puff at 93D has some functional relation with the nucleolus. Further studies are in progress.

Reference: Jacob, J., Birnsteil, M.L. and Sirlin, J.L., 1964, "Nucleic acids - structure, biosynthesis and function", Proc. Symp., Hyderabad (India) pp. 197-209.

Mittler, S. Northern Illinois University,  
DeKalb, Illinois. Controls in tests for  
chemical protection against radiation  
induced dominant lethals.

was injected with approximately 0.1  $\mu$ l of the chemical solution to be tested and then exposed to 1600 R of X-rays. These males were mated daily for twelve days, the females were isolated in plastic tubes and permitted to deposit eggs thru a nylon mesh onto darkened media in a petri dish (this method was suggested by Abrahamson). M.M. Walsh in our laboratory found that if the males were not injected and were irradiated at the same time with males injected with 0.85% NaCl that in 8 out of the 12 broods, the males injected with saline solution had significantly less dominant lethals as determined by the failure of larva to emerge in 24 hours. This seemed unusual for a "wet" fly to have less radiation injury than a "dry" fly. However, several years later K. Balkin also in our laboratory working with dominant lethals also found that uninjected males when irradiated produced significantly more dominant lethals in 7 out of the 12 broods than those males injected with 0.85% NaCl.

Effect on the salivary glands of *D. melanogaster* of in vitro incubation in Benzamide (BM) has been studied. From each mature late third instar larva one of the paired salivary glands was incubated in control ringer (i.e., without BM) while the contralateral gland was RNA is not much affected. RNA synthesis in all but one puff (93D on 3R) is in majority of nuclei completely inhibited in the BM-treated gland. The puff at 93D on the contrary is very highly activated after BM treatment. This puff is either completely absent or very slightly active in the control gland, but in the BM-treated gland this puff is 5-6 times more activated than the control (fig. 1). This specific stimulation of the activity of a single puff under conditions which in general inhibit all chromosomal RNA synthesis is very interesting. All the treatments employed so far to induce puffing in Dipteran salivary glands have resulted in stimulation of a number of puffs. Benzamide has been shown to be an inhibitor of chromosomal RNA synthesis