

Salivary gland chromosome preparation essay



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Introduction: Microscopic, threadlike part of the cell and a structured DNA which carries hereditary information in the form of genes is a chromosome.

Endomitosis is mitosis without nuclear or cellular division. This produces many copies of the same chromosome in a single nucleus (Kim 2004). For this experiment, I hypothesize that *D.*

melanogaster undergoes endomitosis meaning without cellular mitotic division. If it undergoes endomitosis, then testable predicting result is polytene chromosomes. Material & Method: Refer it to a lab manual, Experiment 1. Salivary Gland Chromosome Preparation. I failed to obtain desirable data of chromosome out of internal larval structures of third instar *D. melanogaster* so I used given slide from lab co-coordinator.

Results: Refer it to figure 1 and figure 2. In figure 1, salivary gland is very fragile and transparent. Discussion: As I expected, not like human chromosome, *D. melanogaster* undergoes endomitosis.

My hypothesis was correct. In my observation, the chromosome turned out to be polytene. According to Sorsa, V. 1983, *D. melanogaster*'s salivary gland should have polytene chromosome.

Polytene results from endomitosis, repeated replication during synapses without separation into daughter nuclei (Kim, 2004). It was very hard for me identify the chromosome, but factors of polytene chromosome was found; big, light and dark banding patterns, and all of homologous pair of chromosomes is all connected to chromocentres (Baudisch, W. 1977). When *D. melanogaste* chromosome and human female chromosome were

compared at a stage of metaphase, human had a much smaller chromosome than fruit fly. However, human is considered "normal" than fruit fly. I believe that better microscope will definitely improve the vision of the chromosome, which will lead us better observation and results. Reference Baudisch W (1977).

"Balbiani ring pattern and biochemical activities in the salivary gland of *D. melanogaster*". *Results Probl Cell Differ* 8: 197-212. "chromosome." *Encyclop? dia Britannica*. *Encyclop? dia Britannica 2009 Ultimate Reference Suite*.

Chicago: *Encyclop? dia Britannica*, 2009. Kim, Kyung-goo. 2004. "Truth about endomitosis process". *The Korea Times*. 6: 132-136 Sorsa, V.

1983. "Toroidal bands in polytene chromosomes of *Drosophila*". *Journal of Cell Science Vol 64, 1: 255-264*