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Modified plunge freezing method applied to retinal cells of *drosophila melanogaster* for the ultrastructure close to the living state

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The study about structure of *Drosophila melanogaster*'s retinal cell using electron microscopy were carried in detail by Waddington and Perry [1-2]. But, these results can have limitation in cellular structure based upon studies of chemically prepared samples. Currently available freezing techniques by transmission electron microscopy are allowing the visualization of faithful representation of cell structures. The rapid freezing is so much better due to the speed of fixation, which freezing virtually means stopping all molecular movement [3-4]. In this study, the adult retina of *Drosophila Melanogaster* was investigated fixation by high pressure freezing and modified plunge freezing method followed freeze-substitution. Freeze-substitution was carried out in acetone (dried over calciumchloride) containing 2% osmiumtetroxid. The substitution was programmed as follows: 30 h at -90°C, heating at a rate of 5°C to -60°C, 8h -60°C, heating at a rate of 5°C to -30°C, 8h at -30°C, transfer of the samples to ice (0°C) for 1h, washing with acetone. Thereafter the samples were embedded in Epon-Araldite, ultrathin sectioned and poststained with uranylacetate and lead citrate.
The current data provide us more precise cellular information and better understanding on the animal vision mechanism in new dimension.

References

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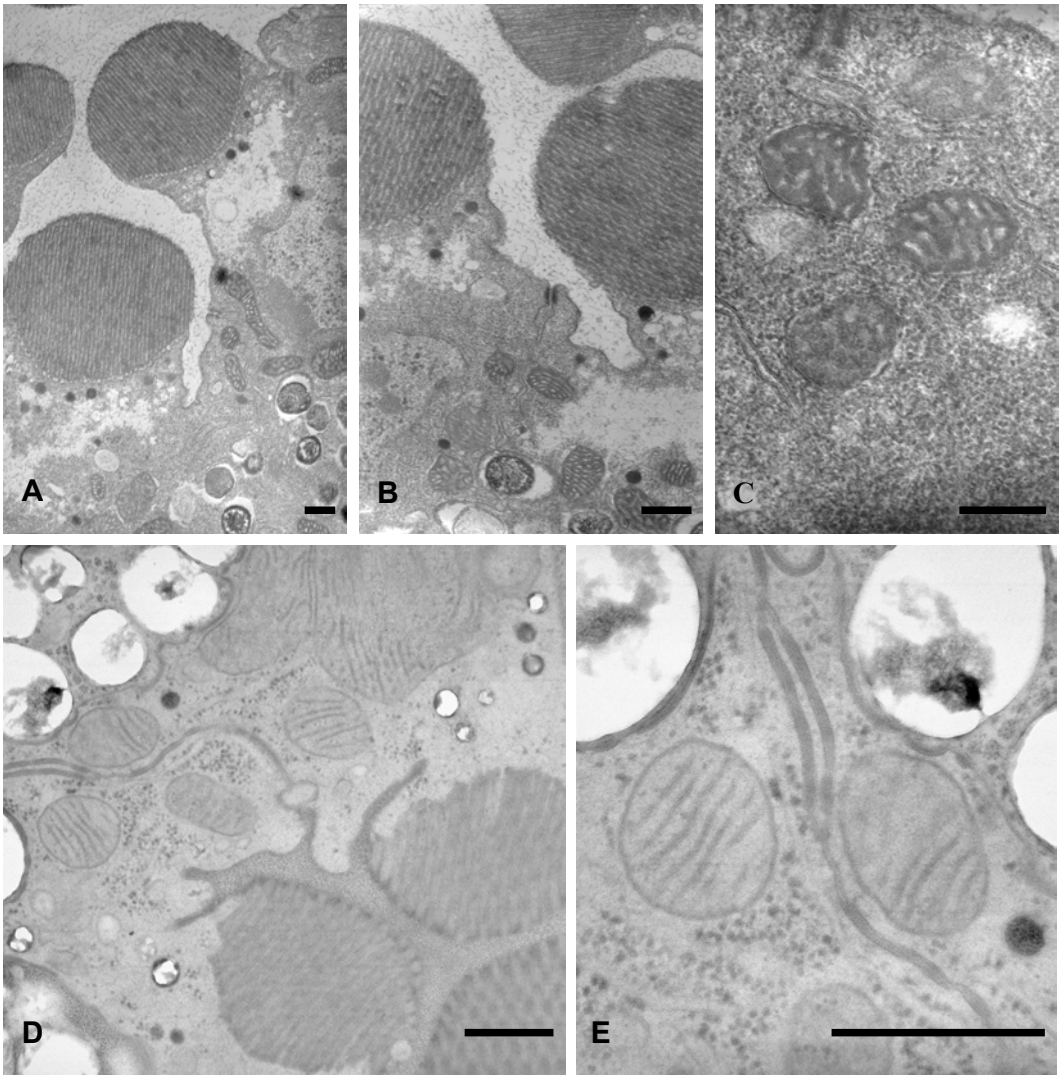

Fig 1. Images of retinal cells in *drosophila melanogaster* processed by conventional fixation (A-C) or High Pressure Freezer-Freeze Substitution (HPS-FS) (D-E).
Size Bar = 500 nm

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