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Possible protection by *Moringa oleifera* against fluoride induced toxicity in *Drosophila melanogaster*

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Abstract : *The present study is aimed to explore the effect of fluoride on the survival and climbing activity of Drosophila melanogaster and possible protection by Moringa. The flies were cultured on the standard cornmeal media on different concentrations of fluoride (1 ppm, 0.75ppm, and 0.5ppm) and with media containing Moringa+ fluoride and Moringa separately. The study showed significant decrease in survival in fluoride treated flies. Significant decrease in climbing activity of flies was observed in climbing assay of fluoride treated flies as compared to normal flies. Moringa treated flies showed significant increase in survival and climbing activity. The results indicate fluoride induced toxicity effects in Drosophila melanogaster.*

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Introduction :

Till 1990s, the toxic effect of Fluoride was highly neglected due to its role in preventing dental caries and was used in toothpastes. However, in the last decade, interest in its undesirable effect emerged due to the awareness that fluoride interacts with the cellular systems even at low concentration (Barbier et al., 2010). One of the most frequently used fluoride compound, sodium fluoride (NaF) is extensively used in toxicological studies in model organisms like *Drosophila melanogaster.*

Drosophila melanogaster has been actively studied for almost 100 years. It has been frequently used in various studies due to its small size, sexual dimorphism, short life cycle, ease of culture at room temperature and production of large number of offspring per generation. It is a complex multicellular organism in which many aspects of development and behaviour are similar to those in human beings (Beckingham et al., 2005). 60% Drosophila genome is homologous to that of humans and 75% of the