Seminars in Zoophysiology at Aarhus University

Freeze tolerance
in drosophilid flies: a comparison of two species.

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Insect cold tolerance represents a complex of impressive strategies. Some insect species display the highest known levels of cold tolerance among all animals. For instance, larvae of the malt fly, *Chymomyza costata* (Drosophilidae) survive after submersion in liquid nitrogen (-196°C) in a fully hydrated state. We found that the principles underlying freeze tolerance in malt fly larvae are transferable, at least partially, onto a chill susceptible larvae of fruit fly, *Drosophila melanogaster*. Given the fact that the evolutionary adaptation for freeze tolerance is generally considered as highly complex and uneasy to mimic in laboratory, our recent results are encouraging and may open a new direction of research on long-term cryogenic storage of biological material.

The long term cryogenic storage of complex animal *tissues* or *whole organisms* still remains a great challenge. In these respect, detailed analysis of *C. costata* model appears as greatly promising.

Thursday November 8th at 10.15; Room 127, building 1131 (zoofys kaffestue)