



Proteins in cold blood

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Cold tolerant ectothermic animals can be divided into two major groups depending on the adaptational strategy they employ to survive low environmental temperature. Thus, freeze tolerant animals survive extracellular crystallisation of their body fluids whereas freeze avoiding animals endure the low temperatures in a super cooled or dehydrated state.

One of the biochemical and physiological adaptations that allow freeze avoiding species to survive the low temperatures is the synthesis of antifreeze proteins (AFP's). AFP's is a group of proteins which can recognize, bind and inhibit the growth of ice surfaces. In the talk I will give an overview of the mechanism of AFP's, discuss the major problems in our understanding of the mechanism of these proteins, present our latest data on a beetle AFP and touch upon the applications of AFP's.



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