

The effects of type 1 AFPs on the heterogeneous nucleation temperature of solution – a surprising result.

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We have examined the effects antifreeze proteins (AFPs) on the supercooling and ice nucleating abilities of aqueous solutions. Very little information on such nucleation currently exists. Using an automated lag time apparatus (ALTA) and a new analysis, we have generated several dilution series for Type 1 AFPs. Our results indicate that above a concentration of about 8 to 10 mg.ml⁻¹ ice nucleation is actually enhanced rather than hindered. We discuss this unexpected result and present a new hypothesis outlining three components of polar fish blood that we believe affect its solution properties in certain situations.

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