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LEA4 Protein Is Likely to Be Involved in Direct Protection of DNA Against External Damage

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Abstract

© 2016, Springer Science+Business Media New York.Anhydrobiotic larvae of an African chironomid Polypedilum vanderplanki are known to be highly resistant to various abiotic stress factors, including ultraviolet radiation. The comparison of survival rates after different doses of UV irradiation between P. vanderplanki larvae and closely related non-anhydrobiotic Polypedilum nubifer larvae showed strongly enhanced resistance of P. vanderplanki to UV irradiation, especially in completely desiccated state. Plasmid-based assay showed an evidence of contribution of LEA4 protein to the protection of the larvae's DNA against UV damage.

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Keywords

Anhydrobiosis, LEA, Plasmid, Polypedilum vanderplanki, Ultraviolet (UV)