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PDF文档

外源氯化胆碱可提高小麦线粒体膜的流动性

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分别用ANS、DPH及16-NS三种不同的标记物标记小麦黄化苗的线粒体,研究氯化胆碱(choline chloride,CC)对线粒体膜的荧光光谱、平均微粘度(η)及ESR图谱的影响。结果表明,0.21-1.79mmol·L^{-1} 的CC均能显著降低线粒体膜的荧光强度、 值及ESR图谱的序参数(S)和旋转相关时间(τ^c),表明CC可增加线粒体膜的流动性。为揭示CC的提高植物抗冷机制提供依据。

EFFECT OF CHOLINE CHLORIDE ON MEMBRANE FLUIDITY OF MITOCONDRIA ISOLATED FROM ETIOLATED SEEDLINGS OF WHEAT

Effects of choline chloride (CC) on fluorescence intensity, micro-viscosity (η) and ESR spectra of mitochondria from wheat etiolated seedlings were studied with the fluorescence labels, ANS and DPH and a spin label, 16NS. Results indicated that the concentration of CC from 0.21 to 1.79 mmol·L^{-1} decreased fluorescence intensity, micro-viscosity (η), sequence parameter (S) and rotating correlative time (τ^c) of mitochondria from etiolated wheat seedlings. CC could therefore increase the fluidity of mitochondrial membrane. All these results suggested that CC could affect the biophysical characteristics and functions of mitochondria, which shed some light on the mechanism of increased resistances against stresses in plants by CC.

关键词

氯化胆碱(Choline chloride); 小麦(Wheat); 线粒体(Mitochondria); 膜流动性(Membrane fluidity)