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植物生理科学

葡萄幼苗对温度逆境交叉适应过程中HSP70在叶片中的亚细胞定位

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摘要：

为了进一步分析热激蛋白在温度锻炼诱导的交叉适应性形成过程中的保护功能，本文以葡萄（Vitis vinifera L. cv. Jingxiu）幼苗为试材，采用胶体金免疫电镜定位技术，定位观察了HSP70在葡萄叶片中的亚细胞分布情况。结果表明，低温锻炼预处理可增强其在高温胁迫条件下的表达水平，细胞核和叶绿体中代表HSP70的免疫金颗粒密度比相应的对照细胞明显增多，尤其是胁迫处理3h时。与低温锻炼相似，高温锻炼预处理增强了葡萄叶片在高温胁迫下细胞核和叶绿体中HSP70的表达量。这一结果为HSP70参与温度锻炼诱导的交叉适应性提供了更直观的细胞学证据。

关键词： 葡萄幼苗 交叉适应 温度逆境 HSP70 胶体金免疫电镜定位

subcellular distribution of heat shock protein 70 in young grape leaves during cross-adaptation to temperature stresses

Abstract:

In order to investigate the protecting role of heat shock proteins in the cross-adaptation to temperature stresses induced by cold acclimation (CA) or heat acclimation (HA). Leaves from two-years-old young grape (Vitis vinifera L. cv. Jingxiu) plants were used as experimental materials. The subcellular localizations of HSP70 within mesophyll cells were observed using immuno-gold labeling electron microscopic technique. The results showed that CA pretreatment could enhance the expression level of HSP70 during heat stress. Compared to non-acclimated plants, the density of HSP70 gold particles was obviously increased in the nucleus and chloroplast of the CA leaves, especially 3 h after heat stress. Similar to CA, HA pretreatment can protect the expression of HSP70 during cold stresses, and the density of HSP70 gold particles remains high level than that in control plants. These data offered the cytological evidence of HSP70 was contributed to the cross-adaptation to different temperature stresses induced by CA-, or HA-pretreatment in grape plants.

Keywords: Young grape plants cross-adaptation temperature stresses HSP70 Immuno-gold electron microscopic localization

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参考文献：

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