

研究报告

大气二氧化碳浓度升高对银杏叶片内源激素的影响

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摘要 采用开顶箱系统, 研究了银杏叶片内源激素脱落酸(ABA)、吲哚乙酸(IAA)、玉米素核苷(ZR)和赤霉素(GA₃)对大气CO₂浓度升高(环境CO₂浓度+350 μmol·mol⁻¹, EC)的响应. 结果表明, EC处理能使ABA含量降低, 与对照(CK)相比, ABA含量最大降低63.0%(处理后120 d). EC处理使叶片IAA和ZR含量增加, 而且随着处理时间的延长, 差异均达显著水平; IAA含量在处理100 d为CK的2倍, ZR含量在处理80 d时为CK的2.5倍. EC处理使叶片GA₃峰值提前出现. (IAA+GA₃+ZR)/ABA比值随着银杏的生长逐渐降低, 在处理后期(处理后40~120 d)明显高于CK, 表明大气CO₂浓度升高可促进银杏的生长发育.

关键词 [CO₂浓度升高](#) [内源激素](#) [酶联免疫](#)

分类号

Effects of elevated atmospheric CO₂ concentration on endogenous hormones in ginkgo leaves.

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Abstract

With top-opened chamber system, this paper studied the responses of endogenous hormones abscisic acid (ABA), indoleacetic acid (IAA), zeatin riboside (ZR) and gibberellins (GA₃) in ginkgo leaves to elevated atmospheric CO₂ concentration (ambient+350 μmol·mol⁻¹, EC). The results showed that EC could decrease the ABA content. After treated with EC for 120 days, the ABA content could be decreased by 63.0%, in comparing with the control. EC could also decrease the contents of IAA and ZR, and the decrement could reach significant with the extension of the treatment. The IAA content was 2 times higher after 100 days treatment, and ZR content was 2.5 times higher after 80 days treatment than those of CK. Under EC, the peak of GA₃ appeared earlier. The (IAA+GA₃+ZR)/ABA ratio decreased gradually with the growth of ginkgo, and was obviously higher than the control at later stage (after 40-60 days treatment), indicating that elevated atmospheric CO₂ concentration could promote the growth and development of ginkgo.

Key words [elevated CO₂ concentration](#) [endogenous hormone](#) [enzyme-linked immunosorbent assay](#)

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