

研究论文

干旱胁迫下CaM与小麦胚芽鞘和幼根生长的关系

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摘要 在聚乙二醇(PEG)-6000 (20%) 诱导的干旱胁迫下, 小麦(*Triticum aestivum* L. cv. 4185)胚芽鞘及根系的生长受到抑制。胁迫初期, 胚芽鞘及根系CaM水平迅速下降, 之后随胁迫程度加重而逐渐积累。一定浓度 ($\geq 50 \mu\text{mol/L}$) 的CaM拮抗剂三氟拉嗪 (TFP) 和氯丙嗪 (CPZ) 均抑制小麦胚芽鞘及根系的生长, 提高过氧化物酶 (POD) 活性。这些结果表明, 小麦体内的CaM参与调节了干旱胁迫下小麦胚芽鞘及根系的生长, 并且与POD有密切的关系, 维持正常的CaM代谢对干旱胁迫下小麦的生长有利。

关键词 [干旱胁迫](#) [小麦](#) [胚芽鞘](#) [根系](#) [CaM](#)

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Relationship between CaM and Growth of Coleoptile and Root in Wheat under Drought Stress

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Abstract The growth of coleoptile and root in wheat (*Triticum aestivum* L. cv. 4185) was suppressed under drought stress induced by PEG-6000 (20%). The CaM level of coleoptile and root decreased rapidly at first stage of stress, and then accumulated with further stress. TFP and CPZ, two CaM antagonists, could inhibit growth of coleoptile and root at higher concentration ($\geq 50 \mu\text{mol/L}$), and enhance the activity of peroxidase (POD). These results suggested that the growth of coleoptile and root was influenced by internal CaM and closely related to POD in wheat. Thus, it was favorable for maintain the normal CaM metabolism to growth of wheat under drought stress.

Key words [Drought stress](#); [Wheat](#); [Coleoptile](#); [Root](#); [CaM](#)

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