

转沙冬青锌指蛋白基因*AmZFPG*烟草非生物胁迫抗性分析

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Overexpression of a Zinc-finger Protein Gene *AmZFPG* from *Ammopiptanthus mongolicus* Confers Tolerance to Cold, Drought and Salt Stress in Transgenic Tobacco

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摘要 分析了沙冬青 (*Ammopiptanthus mongolicus*) 锌指蛋白基因*AmZFPG* 在非生物胁迫下的表达特性, 结果显示*AmZFPG* 受低温、干旱、高盐胁迫诱导表达, 表明该蛋白参与多种胁迫相关的信号转导和应答反应。为进一步探索*AmZFPG* 的功能, 构建了真核表达载体*AmZFPG*-pCAMBIA2300, 将该基因转入烟草 (*Nicotiana tabacum* L.), 对转基因烟草T1 代进行非生物胁迫分析, 结果显示, 转基因烟草的耐寒性、耐旱性、耐盐性均获得了提高。

关键词: 沙冬青 *AmZFPG* 基因 转基因烟草 非生物胁迫 *AmZFPG* 基因 转基因烟草 非生物胁迫

Abstract: The characterization of a novel gene designated *AmZFPG* from *Ammopiptanthus mongolicus* was described here. *AmZFPG* encodes a zinc-finger protein that is induced after different types of stresses, namely cold, desiccation, and salt. Overexpression of the gene in transgenic tobacco conferred tolerance to cold, dehydration, and salt stress at the seed-germination/seedling stage as reflected by the percentage of germination, the fresh weight of seedlings, and their growth pattern. Thus, *AmZFPG* seems to be an important determinant of stress response.

Keywords: *Ammopiptanthus mongolicus*, *AmZFPG* gene, transgenic tobacco, abiotic stress

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