

# 玉米淀粉生物合成及其遗传操纵 Maize Starch Biosynthesis and Its Genetic Manipulation

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**摘要** 淀粉是许多植物重要的储藏物质。淀粉突变体以及转基因植物中淀粉变异的特点使我们对淀粉生物合成的过程有了较深入的了解, 许多研究的结果揭示了玉米淀粉的生物合成涉及4类酶—ADPG焦磷酸化酶、淀粉合成酶、淀粉分支酶和去分支酶。随着编码这些酶的基因的克隆, 利用转基因技术对淀粉合成过程进行遗传操纵业已成为可能, 并且在提高淀粉产量以及不同特性淀粉品质的种质资源创新等方面展示出巨大的潜力。

**Abstract:** Starch is the most important source of calories and a vital storage component in plants. The characterization and production of starch variants from mutation and with transgenic technology has improved our understanding of the synthesis of starch granule. In starch biosynthesis in plants, four enzymes, including ADP-glucose pyrophosphorylase, starch synthase, starch branching enzyme and starch debranching enzyme, are widely accepted from an enormous amount of research aimed primarily at enzyme characterization. As many genes encoding the enzymes and their multiple isoforms in starch biosynthesis pathway have been isolated, genetic manipulation of the starch biosynthesis pathway shows to be a practical way by which starch quantity is increased and starch with novel properties can be created.

**关键词** [玉米](#) [突变体](#) [淀粉生物合成](#) [转基因技术](#) **Key words** [maize](#) [mutant](#) [starch biosynthesis](#) [transgenic technology](#)

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## Abstract

## Key words

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