



棉花纤维素生物合成相关蛋白的抗体制备

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Antibody Preparation of Proteins Involved in Cellulose Biosynthesis in Cotton Fibers

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摘要 棉花纤维细胞生长过程中, 有多种蛋白质参与纤维素的合成, 为了深入研究这些蛋白质的功能, 制备它们的抗体具有重要意义。本研究分别用化学合成多肽和原核表达蛋白制备的可溶性蛋白、可复性包涵体以及包涵体颗粒作为抗原, 制备了棉花纤维素合酶CESA1、CESA2和SUSY1、 β -1,4-glucanase、 β -1,3-glucanase和Callose synthase的抗体。结果表明, 化学合成多肽和原核表达蛋白均可用于抗体制备, 制得的抗体可用于棉花纤维素合成相关蛋白的检测。

关键词: 棉花 纤维素合酶 抗体

Abstract: Cotton fibers are single-celled seeds almost entirely constructed of cellulose, thus serving as model plants for cellulose synthesis. Previous research has reported that CESA1, CESA2, CESA3, SUSY1, β -1,4-glucanase, β -1,3-glucanase, callose synthase and other proteins have very important functions during cellulose synthesis. In order to validate the mechanisms by which these proteins act, antibody preparation is necessary. Here we prepared the CESA2 and CESA3 antigens by chemical synthesis, and the other antigens by prokaryotic expression. The CESA1 antigen is a solute recombinant protein; the SUSY1 antigen is a recombinant and refolded inclusion body; β -1,4-glucanase, β -1,3-glucanase, and callose synthase antigens are fold inclusion bodies. All the antibodies were detected by Western blotting, and the results suggest that all the antibodies, with the exception of CESA3, can be used to check the target protein. This study finds that the inclusion bodies can be directly used as the antigen for antibody preparation.

Keywords: cotton cellulose synthase antibody

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