

**EXPRESSION AND ANALYSIS OF A PROLINE-
RICH CELL PROTEIN IN DEVELOPING
COTTON FIBERS**

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Abstract

Cotton fiber is a differentiated epidermal single cell from a developing seed which contains many single cell fibers. The development of the fiber occurs in four phases: initiation, elongation, secondary cell wall synthesis, and maturation. Of the many genes involved in the control of fiber synthesis and development, only a few have been isolated and characterized. Cloning of fiber cDNAs and their corresponding genes will be the first step to understand the molecular mechanism of fiber development. A full-length fiber cDNA clone (GCW1) encoding a proline-rich cell wall protein has been sequenced and characterized. Northern blot analysis showed that the GCW1 is developmentally regulated. A synthetic peptide based on the derived amino sequence was synthesized and used to raise antibody in rabbit. A Western blotting was performed to determine the expression pattern of the GCW1 protein in different fiber development stages. The molecular mass of in vitro and in vivo synthesized GCW1 protein was determined by SDS-polyacrylamide gel electrophoresis to study the posttranslational modification of the protein.