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Sequence analysis and expression study of LTP7 promoter isolated from cotton (*Gossypium hirsutum L.*)

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Lipid transfer proteins (LTPs) have a role in transfer of phospholipids along biological membranes. A cotton *LTP7* promoter was isolated using high through put genomic sequences (HTGS) data base. Analysis of promoter nucleotide sequence revealed a number of crucial regulatory elements including core promoter elements. A 1.8 kb fragment of *LTP7* promoter was isolated from genomic DNA of cotton and finally cloned in plant expression vector to characterize its functionality. Transient GUS assay revealed that promoter showed expression in cotton fibers during the time of elongation and different stages of secondary cell wall synthesis. Deletion analysis at 5′ end showed that 1 kb promoter showed strong expression during stage of secondary cell wall synthesis, whereas, 1.5 kb deletion fragment exhibited less strong expression in cotton fibers. Results of this present study showed that 1 kb deletion fragment and 1.8 kb *LTP7* promoter exhibits fiber specific expression and may be used to express fiber genes in cotton.

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