

## 2 Molecular Cloning of Chloroplast ATP Synthase a Subunit Gene (*atpI*) Induced by Cytokinin from Maize (*Zea mays* L.)

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To investigate signal transduction pathway regulated by cytokinin, 7-day-old maize leaves were treated by 0.1 mM benzyladenine (BA). Several kinds of gene fragments induced or repressed by BA treatments were isolated by using differential display-polymerase chain reaction (DD-PCR). One of the gene fragments was found to have significant sequence homology with chloroplast ATP synthase a subunit gene (*atpI*) in higher plants. Northern blot analysis revealed that *atpI* transcripts were approximately 10-fold increased by BA treatments. By isolation of chloroplast DNA, a full-length of *atpI* gene named as *Zm-atpI* was cloned. *Zm-atpI* is 744 nucleotides long which encodes 248 amino acids. The amino acid sequences deduced from *Zm-atpI* shares more than 96 % identity with those of *atpI* gene from rice, wheat, tobacco, spinach, and pea, and there is no amino acid sequence variation of *atpI* gene between maize cultivars.

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