



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Isolation and Characterization of Sequences Homologous to the Tobacco Clone Axi 1 (auxin independent) from a Vicia sativa Nodule cDNA Library

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Abstract: In this research, partial nucleotide sequences of the axi 1 gene, which is related to auxin perception and transduction, isolated from Vicia sativa using cDNA library screening were investigated. Four V. sativa cDNA clones representing homologous of the tobacco axi 1 (auxin independent) cDNA clone were isolated and characterized. With sequence analysis two different clones were observed, called 10/3a and 16/3b. Sequences about 500 bp from the 5' end and 450 bp from the 3' end were determined from the 10/3a clone. The sequences from the 5' end of cDNA clone 10/3a shared about 58 % similarity at the nucleotide level and 61% identity at the polypeptide level with the sequences of the Nicotiana tabacum axi 1 cDNA clone. At the 3' end of 10/3a, 63 % similarity at the nucleotide level was observed with the clone. In 16/3b about 500 bp was sequenced from the 5' end. There was 64 % nucleotide sequence similarity and 61 % polypeptide sequence identity. Northern blot analysis showed that the size of the mRNA was about 2 kb, like that of the axi 1 isolated from tobacco. It was shown that homolog sequences of axi 1 were expressed in flowers, leaves, stems, roots and nodules of the V. sativa plants.

Key Words: axi 1, auxin, gene isolation, Vicia sativa

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