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Studies on transgenic wheatgrass of exogenous CBF₄ gene

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Key words : CBF₄ gene ,transgenic wheatgrass ,southern blot

Introduction After transgenic hybrid wheatgrass (*Agropyron cristatu* × *A .desertorum* cv . Hycrest-Mengnong) of CBF₄ has been obtained , the transformation and copy number were detected by Southern blot . The exogenous gene has been integrated into the genomic DNA and inserted into the chromosome of receptor cells by multicopy integration . Exogenous gene fragments have been transferred into ycrest-Mengnong wheatgrass successfully .

Materials and methods The transformed (by gene gun) and non transformed Hycrest-Mengnong wheatgrass plants were used as materials . Plant genomic DNA was sheared by restriction endonucleases . Aim fragments from plasmid DNA which were amplified by PCR were the templets . The DIG label and detected kit were used to label the probe and to ascertain the transformation of fragments .

Results Figure 1 shows the Southern hybridization map . From Figure 1 , the hybridization band of CBF₄ transgenic plants were obvious and the integration number is 2-5 .

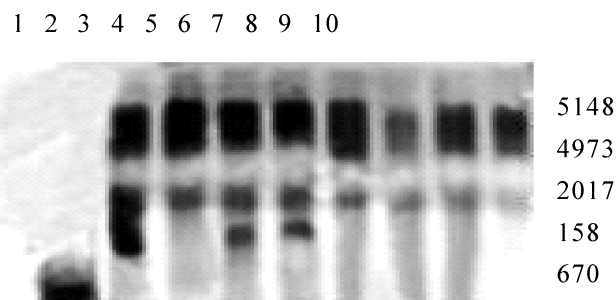


Figure 1 Southern analysis of digested total genomic DNA from transgenic wheatgrass probed with DIG labeled plasmid DNA (CBF₄) . 1-negative control , 2-positive control , 3-10-transgenic plants .

Conclusions The CBF₄ gene is a new member of CBF family isolated from *Arabidopsis thaliana* reported by Volker Haake , Daniel Cook . The CBF₄ gene's expression was induced by drought , not low temperature . The resistance of *Arabidopsis thaliana* plants to drought and low temperature will be enhanced if CBF₄ gene expresses excessively . The results of Southern blotting indicated that the exogenous gene CBF₄ has been integrated into wheatgrasses plants and inserted into the chromosome with multicopy .

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