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Transformation of Chinese Cabbage with A Heat Tolerance Gene, *Heat Shock Protein HSP101*

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Objectives

The heat stock protein, HSP101, inhibits programmed cell death and controls heat stress in plants. Since heat tolerance is an important character for chinese cabbage cultivation in field, we have tried to construct a heat tolerant chinese cabbage by transformation with *Heat Shock Protein 101 (HSP101)*.

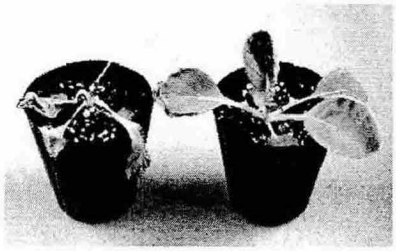
Materials and Methods

1. Material: commercially important chinese cabbage inbred lines
2. Methods:
   - -Pre-culture: 2~3 days culture of hypocotyl, MS medium containing 3 mg/L BAP, 1 mg/L NAA
   - -Co-culture: culture for 2~3 days under dark and 21℃ condition
   - -Selection: pre-culture medium containing 2mg/L AgNO3, 250 mg/L Lilacillin, and 0.8 % mannose for mannose selection
   - -Heat treatment: 55℃ chamber for 1h and then room temperature

Results and Discussion

Chinese cabbages were transformed with *HSP101* using an *Agrobacterium* co-culture method selected by mannose because the binary vector contained the *PMI* selectable marker. Transgenic plants were confirmed by PCR, Southern and Northern blot analysis. T1 plants were treated at 55℃ for 1h and then incubated at room temperature to test the heat tolerance level. Several T1 plants showed heat tolerance and those were selected for further research.

Non-transformed Transformed



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