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SLTI66 gene cloned from soybean has the activity of cold and salt tolerance

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Objectives

1. The production of polyclonal antibody of soybean SLTI66 gene.
2. The functional analysis of SLTI66 gene.

Materials and Methods

Materials-plant: glycine max cv. sinpaldal2, host cell: BL21(DE3), vector: pET

Method-low temperature treatment, salt treatment, affinity chromatography, preparation of polyclonal antibodies, Northern blot, Western blot

Results and discussions

The recombinant proteins purified with a three-step purification scheme: fractionation, immobilized metal ion affinity chromatography, and gst affinity chromatography, and analyzed in SDS-PAGE (Figure 1). Figure 2 showed cold- and salt-stress tolerance of *E.coli*. The viability of *E. coli* cells with SLTI66 gene significantly increased in low temperature treatment and the 3 % NaCl medium compared with control cells(Fig. 2, a, b). In the 5% and 7% NaCl medium, they showed no difference for growing. As the result, the SLTI 66 gene had the function of cold and salt-stress tolerance.

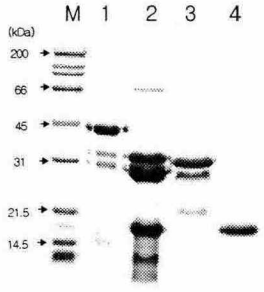

Fig. 1 SDS-PAGE analysis of recombinant protein produced in E. coli. Lane 1, pET-SLTI66 protein (41 kDa); Lane 2, pET-SLTI66 protein seperated by Factor Xa; Lnae 3. Factor Xa; Lane 4, SLTI66 protein (19 kDa).

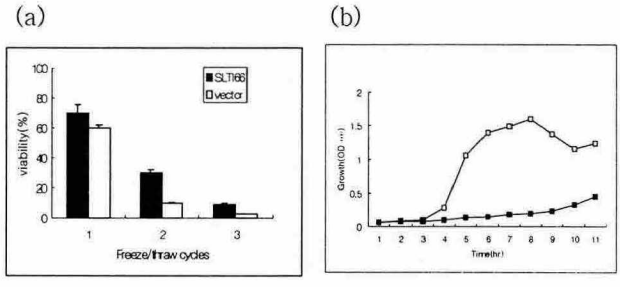

Fig. 2 Analysis of SLTI66 with cold- and salt-stress tolerance.

(a) The viability of E. coli cells after the freeze/thaw treatment.

(b) The growth curves of E. coli cells with SLTI66(◆) and pET42a(■) in 3% NaCl medium.

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