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Characterization of *SLTI182* Genes Induced Upon Cold Stress

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L-asparaginase is an amidase that converts l-asparagine to l-aspartic acid and ammonia, and plays an important role in nitrogen metabolism in plants. It also have a role in biosynthesis of amino acids and nodulation process in legumes. Plant metalloproteinase belong to the MMPs family and MMPs are involved in remodeling of plant extracellular matrix in association with plant growth, development, and possibly defense processes. In this study, we report low temperature-inducible l-asparaginase and metalloproteinase isolated by suppression subtractive hybridization (SSH) from soybean. The full length cDNA of l-asparaginase, *SLTI182* and the full length cDNA of metalloproteinase, *SLTI114* are 1258 bp long and 1225 bp long, respectively. The induction of *SLTI182* and *SLTI114* are restricted to the early period of low temperature stress, whereas *SLTI25* is restricted to the lately period of low temperature stress and *SLTI66* is continuously accumulated during low temperature stress. Fluorescence in situ hybridization (FISH) detected 4 independent locations in soybean chromosomes, indicating two genomic copies. This coincides the genomic southern data of *SLTI182*.