

# CLONING AND DESIGNING VECTOR CARRYING GMEXP1 GENE ISOLATED FROM LOCAL SOYBEAN CULTIVAR SONLA, VIETNAM

Lo Thanh Son, Le Van Son, Nguyen Vu Thanh Thanh, and Chu Hoang Mau\*

## TÓM TẮT:

Abstract—Soybeans (*Glycine max* (L.) Merrill) are short-duration industrial crops which have high economic and nutritional values, and play an important role in improving soil fertility and sustainable use of cultivated land resources. Soybeans have low level of drought tolerance, thus it is of great necessity to study on approaches to improve their drought tolerance, including using genes related to the root elongation. The GmEXP1 gene which expresses expansin, a key protein in cell expansion, is one of those genes. In this study, we amplified, cloned and determined the GmEXP1 gene sequence from local soybean SL1 cultivar with best vigorous root systems. GmEXP1 gene is 790 bp in length, encoding 255 amino acids. Transgenic vector carrying GmEXP1 gene has been designed successfully (pCB301-GmEXP1) and transformed into tobacco plants (*N. tabacum*K326). These results form the basis for generation of transgenic soybean cultivars overexpressing GmEXP1, aiming to improve the drought tolerance based on the root elongation of soybean cultivars in Vietnam