

***Agrobacterium*-mediated Transformation of Kenaf(*Hibiscus cannabinus L.*)  
Using Pepper Genes Involved in Plant Defense Mechanism and Abiotic Stress.**

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**Objectives**

CaNAC1, CaPIF1 and CaRBP1 isolated from pepper leaves infiltrated *X. ag 8ra* (*Xanthomonas axonopodis* pv. *glycines 8ra*), which these genes may play a role in the regulation of defense response and abiotic stress in plants.

We expect to enhance the resistant of pathogen and abiotic stress by transgenic experiment.

This study demonstrates that shoots induction from leaf explants have high potential as new sources of mass production of kenaf. The use of this transformation system in kenaf will permit the introduction of genes that regulate morphological and economically important traits, such as those that improve tolerance of abiotic stress and pathogen.

**Material and Method**

○ Material :

- Mature seeds of kenaf cultivars Everglade-41
- *Agrobacterium tumefaciens* strain LBA4404 containing the binary plasmid pMBP1 which carrying the CaNAC1, CaPIF1 and CaRBP1 genes.

○ Method :

-- Culture conditions

Explants were transferred to fresh MS media supplemented with concentration of TDZ, 2,4-D, NAA and 3% sucrose.

- Shoot elongation and rooting

shoot regeneration media supplemented with different concentration of IAA, BA, and TDZ. all cultures were transferred to fresh medium every 2-3 weeks.

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## Results and Discussion

1. The rate of adventitious buds induction was highest in MS medium with TDZ 0.5-1mg/L, when cultured for 4 weeks under light conditions. the optimum conditions for shoot regeneration observed combination of IAA, BA and TDZ growth regulators.

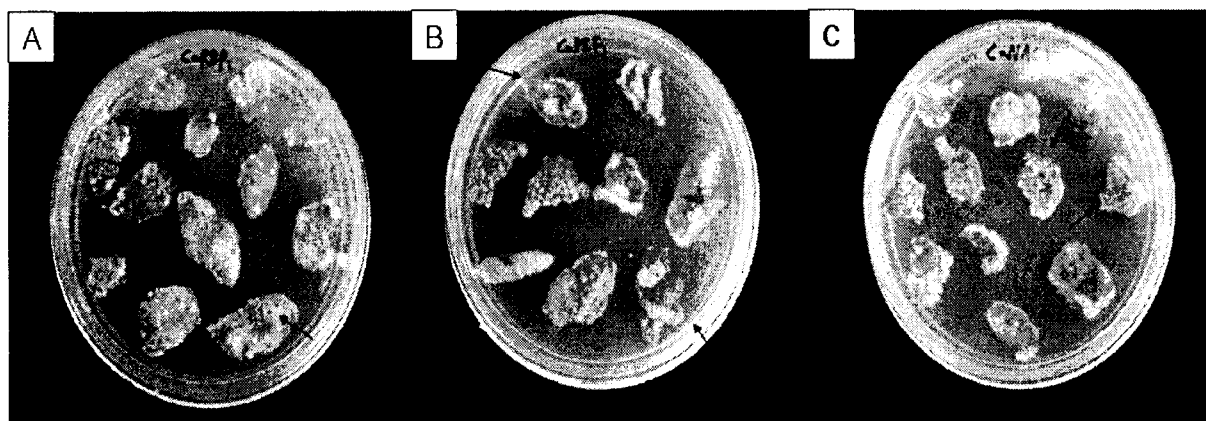


Fig. 1. adventitious buds induction and plant regeneration system from leaf explant of kenaf(*hibiscus cannabinus* L.)

A, B, C-kenaf leaf were infiltrated CaRBP1, CaPIF1, CaNAC1 genes.

Table 1. Effects of plant growth regulators on plant regeneration after TDZ 1mg/L for 4 weeks from leaf explant of kenaf(*Hibiscus cannabinus* L.).

Plant growth regulator	Pepper gene	No. of cultured explant	Evergrade-41	
			No. of shoots	Regeneration frequency (%)
TDZ				
TDZ(1mg/L)	CaNAC1	120	7	5.8
	CaRBP1	120	6	5
	CaPIF1	120	7	5.8