

## Transient expression of anti-rabies-light chain antibody in Tobacco plants

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**Background and Aims:** In 2009, more than 36000 cases requiring rabies post exposure prophylaxis were reported in Iran. For post exposure treatment the injured individual in addition to rabies vaccine receives either human or equine anti-rabies immunoglobulin (HRIG or ERIG). The high cost of HIRG, the risks associated with the use of human-derived blood products as well as the adverse reactions observed in the case of ERIG usage has made the search for alternative production methods necessary. In this respect production of plant-derived anti-rabies antibody seems an attractive alternative. MM; A plant optimised gene of Light chain (LC) of humanized antibody was synthesised. The LC coding sequence was digested and cloned in pCAMBIA 1304. *Agrobacterium tumefaciens* was transformed by the constructed expression vector. In order to increase the expression level we used (p19) a plant silencer suppressor. P19 was synthesised and the DNA fragment was cloned in pCAMBA1304. Both constructs were sent to *Agrobacterium tumefaciens* using freeze and thaw method. The Tobacco leaves were agroinfiltrated by equal number of agrobacteria using vacuume system.

**Results:** The results showed that the pCAMBIA1304 constructs contain the LC and P19 genes. protein purification and dot blot showed that LC expressed in leaf tobacco successfully and using p19 increased express of recombinant protein.

**Conclusions:** several advantages of plant as expression system, in last two decades the third generation of production of heterologus proteins in plants has emerged. Production of pharmaceutical proteins including antibodies is one of the most important research field in this era. Production of monoclonal antibody against rabies virus has been shown and our experiments are on the path.

**Keywords:** Transient expression; Agroinfiltration ; Rabies virus; Monoclonal antibody