

SEQUENCE ANALYSIS FROM RESCUED PLASMIDS FROM SOYBEAN  
OBTAINED BY BIOLISTICS SUGGEST THAT MULTIPLE COPIES OF THE  
TRANSGENES MAY ORIGINATE BY REPLICATION OF EXOGENOUS DNA.

Romano E, Vilarinho AC, Soares A, Proite K, Neiva S, Rech E. and Aragão F.

<sup>1</sup>Universidade de Brasília-UnB-Departamento de Biologia Molecular

<sup>2</sup>Embrapa/Cenargen. [romano@cenargen.embrapa.br](mailto:romano@cenargen.embrapa.br)

In order to understand the mechanisms of integration of foreign DNA into the plant genome through the biolistics process, we investigated the organization of transgenes in soybean plants. The approach was based in the plasmid rescue technique. From five soybean single-locus transgenic lines we recovered several plasmids. These plasmids were studied by nucleotide sequencing and restriction analysis. Our data suggest that single-locus transgenic lines have multiple copies of the transgenes without or with very short DNA linker between the integrated plasmids. More important, our results also suggest that multiple copies of exogenous DNA may originate from two distinct mechanisms, the already described two-phase ligation mechanism (Kohli et al., 1998) and other non described mechanism, that involves replication from a single plasmid before or during the integration into the plant DNA. These two models are similar to the postulated for the formation of repeat structures in *Agrobacterium* transformation systems. Our findings suggest that even without the bacterial proteins involved in *Agrobacterium*-mediated transformation some steps of integration of exogenous DNA in the biolistic process may be analogous to those obtained by *Agrobacterium* transformation systems. Órgão Financiador : PADCT-EMBRAPA/CENARGEN