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W 15. RNA FRACTIONS FROM OTHER SOURCES THAN AGROBACTERIUM,
TUMEFACIENS AS TUMOR-INDUCING AGENT IN DATURA STRAMONIUM

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Besides RNA viruses responsible for diseases in plants, a particular 'virbid RNA' of a small size acts as agent causing potato spindle tuber disease. It is known since 1907 that oncogenic strains of *A. tumefaciens* possess a capacity to initiate the formation of transplantable tumors when inoculated into stems of plants. We have demonstrated that a tumor-inducing RNA fraction (TI-RNA) from oncogenic and non-oncogenic strains induces under axenic conditions the appearance of authentic tumorous tissue on wounded stems of *Datura* plants grown on solid synthetic medium containing auxins. TI-RNA was also found in one non-oncogenic strain (II BN V6) not containing a plasmid. Our studies concerned with the mechanism by which TI-RNA leads to the appearance of tumors in healthy plant cells raised two main questions : 1) Is the TI-RNA exclusively present in *A. tumefaciens* strains? 2) If not, one would like to know how TI-RNA from other sources can be provided in large amounts in order to study tumorigenesis in plants.

The results to be presented will show that in fact a small size RNA, or certain RNA derivatives from other sources than *A. tumefaciens* can be relatively easily isolated and characterized. They regularly induced, under axenic conditions, the appearance of tumorous tissue (in *Datura stramonium*) which can be maintained by grafting onto young *Datura* plants. Tumorous tissues induced by RNA are actually growing in a medium which does not contain auxins. Up to now, they have been transferred three times.

A possible biochemical mechanism by which TI-RNA from different sources provokes the tumorigenic state in *Datura stramonium* will be discussed.