A model to simulate acquired resistance induced by localized virus infections in hypersensitively reacting tobacco

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Intercellular fluids were obtained from leaves of *Nicotiana tabacum* cv. Xanthi-nc. The leaves had developed local acquired resistance (LAR) or systemic acquired resistance (SAR) after inoculation of some leaves of the plant with tobacco mosaic virus (TMV) or tobacco necrosis virus (TNV). Injection of intercellular fluid into a healthy 'Xanthi-nc' tobacco leaf was performed at four to six sites on one half-leaf. A copy of the leaf was made to recognize the injected area later on. Injection was followed by virus inoculation of the whole leaf when the water-soaked appearance of the injected area was no longer visible. Water or intercellular fluid from healthy leaves was injected in control leaves.

When fluids were used from LAR-leaves 5 or more days after the first inoculation and from SAR-leaves at least 10 days after the first inoculation, challenge inoculation resulted in a reduction in number and diameter of the lesions. With this model the cause of acquired resistance is being investigated.

Resistance against plant viruses induced by culture filtrates of the fungus Stachybotrys chartarum

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The application of culture filtrates from the fungus *Stachybotrys chartarum* (Ehrenb. en Link) Hughes induces resistance against TMV and TNV in several plant species. The induction of resistance is manifested by a reduction of local lesion number and size. The extent of induced resistance depends on the virus-host system used. After the application of the culture filtrate three new proteins are detected in *Nicotiana tabacum* cv. Xanthi-nc, which have the same electrophoretic mobility as the acetylsalicylic acid-induced pathogenesis-related (b) proteins. The proteins could be separated by micro-capillary and micro-slab gel electrophoresis in gradient gels using crude extracts as samples. The microsystem allows the fractionation of small amounts of proteins in a very short time. A correlation between the appearance of the b-proteins, induced by culture filtrates, and resistance against viruses will be further investigated.