

## Tobacco plant may help treat cancer

US scientists have used the tobacco plant to 'grow' key components of a vaccine against lymphoma - a form of cancer.

Researchers from Stanford University in California are using the plants as factories for an antibody chemical specific to the cells that cause follicular B-cell lymphoma, BBC News reported Wednesday.

These antibodies are injected into a patient newly diagnosed with the disease, to 'prime' the body's immune system to attack any cell carrying them. If successful, this would mean the body would then recognize and destroy the lymphoma cells.

'It is a pretty cool technology - and it's really ironic that you would make a treatment for cancer out of tobacco,' said Ronald Levy, who is leading the research.

Earlier, attempts have been made to grow these antibodies inside animal cells, with mixed success. A plant-grown vaccine would be much cheaper and less risky for the patient, as animal cells might host unknown viruses.

The experimental vaccine has only been tested on a handful of patients to check for any side effects of using plant-produced antibodies and hence its effectiveness in fighting the disease is uncertain.

Once a patient's cancer cells are isolated in the laboratory, the gene responsible for producing the antibody is extracted and added to the 'tobacco mosaic virus'.

The plants are then 'infected' with the virus, and as the virus spreads through the cells, the added gene causes production large quantities of the antibody.

After a few days the antibody is extracted from the leaves of the plant. Only a few plants are needed to make enough vaccine for a patient.

Professor Charles Arntzen, from Arizona State University, said that the sheer speed of the production process could convince patients to wait for their own tailored vaccine rather than undergoing other treatment.

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