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Could tobacco hold the key to beating cancer? Researchers say plant's defence mechanism could work in humans to 'explode' invading cells

- Plant's natural defence mechanisms could kill cancer cells
- Molecule kills off fungi and bacteria in plant
- Pincer-like structure grips onto membrane of cancer cells and rips them [openopen](#)

By [Mark Prigg](#)

Published: 23:34 GMT, 4 April 2014 | Updated: 08:28 GMT, 5 April 2014

The tobacco plant's natural defence mechanisms could be harnessed to kill [cancer cells](#) in [the human body](#) [the human body](#) .

Scientists have identified a molecule in the flower of [the plant](#) [the plant](#) that usually fights off fungi and bacteria - and were stunned to find it also has the ability to identify and destroy cancer.

Called NaD1, it works by forming a pincer-like structure that grips onto lipids present in the membrane of cancer cells and rips them open, causing the cell to expel its contents and explode.



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+2

The flower of the *Nicotiana glauca*, in which researchers have identified a molecule that usually fights off fungi and bacteria also has the ability to identify and destroy cancer

HOW IT WORKS

called NaD1, the molecule works by forming a pincer-like structure that grips onto lipids present in the membrane of cancer cells.

The structure then effectively rips them open, causing the cell to expel its contents and explode, [rendering](#) them unable to cause damage.

'There is some irony in the fact that a powerful defence mechanism against cancer is found in the flower of a species of ornamental tobacco plant, but this is a welcome discovery, whatever the origin,' Dr Mark Hulett of the La Trobe Institute for Molecular Science in [Melbourne](#) said.

'The next [step](#) is to undertake pre-[clinical studies](#) to determine what role NaD1 might be able to [play](#) in [treating cancer](#).'

The preclinical work is being conducted by the Melbourne [biotechnology company](#) Hexima.

'So far the preliminary trials have looked promising,' said Dr Hulett.

'We are confident there is potential for this discovery to [translate](#) to therapeutic use in humans.

The results are published in the journal eLife today.

'One of the biggest issues with current [cancer therapies](#) is that the effect of the treatment is indiscriminate,' Dr Hulett said.



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Nicotiana sylvestris (Flowering Tobacco): The Australian team say the next step is to undertake pre-clinical studies to determine what role NaD1 might be able to [playplay](#) in treating cancer.

'In contrast, we've found NaD1 can target cancerous cells and has little or no effect on those that are healthy.'

Dr Hulett said scientists have known for some time about the molecules that form the [first line](#) of defence against microbial invasion in all plant and animal species.

Until now nobody has known how the molecules actually did their [jobjob](#).

'We've discovered the workings of this universal defence process, which could also potentially be harnessed for the development of other therapeutic [applicationsapplications](#), including [antibiotic treatment](#) for microbial infections,' he said.



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[carrie says](#), McMinnville USA, 3 hours ago

Terry Harman can and should suck it!!!

0
0

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[Khatmon Jingleton](#), Oxfordshire, United Kingdom, 9 hours ago

Tobacco already saved my life from smoking when i took up Swedish snus. Sweden has the lowest tobacco related diseases rate in Europe yet the EU in their infinite wisdom don't allow it to be sold except in Sweden. [CheckCheck](#) out the World Health Organisation official figures.

1
8

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[Terry Harmon](#), CA, United States, 10 hours ago

I make up to \$90 an hour working from my home. My story is that I quit working at [WalmartWalmart](#) to work online and with a little effort I easily bring in around \$40h to \$86h. Someone was good to me by sharing this link with me, so now i am hoping i could help someone else out there by sharing this link... Try it, you won't regret it!... >>>> JOBS7.BIZ

18
0

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[paul](#), london, United Kingdom, 15 hours ago

Look, pharmaceutical companies are not interested in cures for any diseases, cures do not [make big moneymake big money](#), suppression of any disease by taking daily doses of medication makes big money, pharmaceutical companies do not want cures, would not surprise me if at least one or two have found cures for several diseases but will not release them because they would not make enough money.

4
43

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[knowles2](#), Chigwell, United Kingdom, 15 hours ago

The scientists who found these cures have let their own [family membersfamily members](#) die of cancer rather than cure them. The CEOs have also let their family members die, their babies, here children, their parents die, knowing they had the cure for their disease in their head office.

9
13

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[ANA](#), Philadelphia, United States, 15 hours ago

Just a matter of time they be reversing and saying smoking is good for you.

7
19

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[Dazed and confused](#), England, United Kingdom, 3 hours ago

Unfortunately, cigarettes today contain so many chemicals that tobacco only makes up a small percentage of them.

1
2

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[christine](#), new york, United States, 16 hours ago

really tired of reading these "have they found the cure to cancer stories". we read about them then never hear about it ever again. i'm convinced that since cancer is such a huge [money maker](#) for these big pharma companies we may never have a cure. beyond heartbreaking the people that die daily to cancer & seems more and more people are dying from it. all this technology we have & we still have no cure. its mind blowing.

2
9

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[knowles2](#), Chigwell, United Kingdom, 15 hours ago

Cancer survival rates have gone up hugely in the last few decades, with some like testicular cancer and leukemia between 90% and 95%, somewhere between 80 and 90 percent of breast cancer victims survive.

3
4

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[PortTabacco](#), Los Angeles Calif., 11 hours ago

There is big big money in [cancer treatment](#). Why should they cure it?

1
12

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[paganview](#), Mount London, 16 hours ago

It's not the tobacco that's bad, it's the [chemicals](#) like bleach, ammoniac and rat poisoning etc

7
19

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[TC](#), Orlando, 17 hours ago

Well in the 40's and 50's they said smoking was good for your health..maybe they were on to something

4
13

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[knowles2](#), Chigwell, United Kingdom, 15 hours ago

Who said it. The Germans thought it was bad for you in the late 30s and early 40s.

1
6

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[sally](#), Mpls., United States, 17 hours ago

This is an easy to grow from seed garden flower and it smells delicious. It smells best at night so if you plant enough under an open window it [perfumes](#) the whole house. Nicotiana Sylvestris is the variety smells the best. :-)

1
16

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[ColKlink](#), Missouri, United States, 17 hours ago

How many have died of cancer from tobacco? Where's that story? Broccoli & wheat are proven anti-cancer, without all the toxins

[foundfound](#)  in tobacco.

[Reply](#) [New Comment](#) [New](#)

21
6

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[Midnighteye](#), London, 16 hours ago

Not very bright huh? Maybe you don't read too well.

3
10

[Click to rate](#)

[knowles2](#), Chigwell, United Kingdom, 15 hours ago

He probably didn't read beyond the headline.

2
10

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