

Chemical kills cancer with stress

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A chemical that kills cancer cells by sending them into overdrive until they burn out from stress could be turned into a powerful drug, say scientists.

The "promising" counter-intuitive method for attacking tumours drives them to produce more proteins than the cells can cope with and has been shown to work against forms of breast, prostate, liver and lung cancer in mice.

Researchers said if the treatment was found to be safe in humans, it would be a strong addition to the "cancer drug arsenal". The compound over-stimulates a family of genes called steroid receptor coactivators that are already hyperactive in cancer cells, bloating them with large volumes of unprocessed proteins.

As these proteins build up, the cells fill with toxic molecules called reactive oxygen species that age them rapidly and eventually kill them.

Scientists at the Baylor College of Medicine in the US injected 13 mice with the compound over three weeks and wrote in the journal *Cancer Cell* that the tumours were almost completely stopped in their tracks.

Kat Arney of Cancer Research UK said the study's paradoxical approach could open up a new angle of attack against tumours, but cautioned: "This is a long way from being a drug for use in humans, as it has only been tested in cells grown in the lab and given over a few weeks to a small number of mice. Many more tests are needed to turn this promising molecule into a safe treatment that could benefit patients."

Dr Arney also warned that the molecule had only been shown to work against a small range of cancers and it might encourage other types to spread throughout the body or develop drug resistance.

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