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Gene therapy anti-cancer research featured in Scientific American

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BIRMINGHAM, Ala. – *Scientific American*

magazine focused on two University of Alabama at Birmingham (UAB) Comprehensive Cancer Center researchers in a news story on experimental next-generation anti-cancer therapies. David T. Curiel, M.D., Ph.D., is a UAB professor of medicine and director of the human gene therapy division, and Ronald Alvarez, M.D., is a UAB professor of medicine and director of the gynecologic oncology division.

Both doctors are featured in a *Scientific American*

special cancer edition, and both served as co-authors on the story "Tumor-busting viruses." The editors chose Curiel and Alvarez because of their research into a field called viral gene therapy, or virotherapy.

Virotherapy involves an experimental technique to target viruses to cancer cells while leaving healthy cells untouched. The viruses are genetically engineered to kill tumor cells in different ways. One way is by adopting the viruses' natural ability to invade and reproduce as a way to deliver target genes that make tumor cells more susceptible to existing chemotherapies.

Curiel and Alvarez have been testing this concept with a virus compound called adenovirus in women with recurrent ovarian or other gynecological cancers. The clinical trial is still in the early stages, yet the compound has shown anti-tumor effects that appear safe to most patients, Curiel said.

"We envision a substantial role for viruses – that is, therapeutic viruses – in 21st-century medicine," Curiel and Alvarez wrote in the story.

First proposed in the 1940s, virotherapy now relies heavily on adenoviruses, a cause of the common cold that has been studied and altered extensively for medical research. Adenoviruses have the ability to shuttle targeted segments of DNA into a tumor cell and make biochemical changes that minimize damage to healthy cells.

Source: [University of Alabama at Birmingham](#)

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