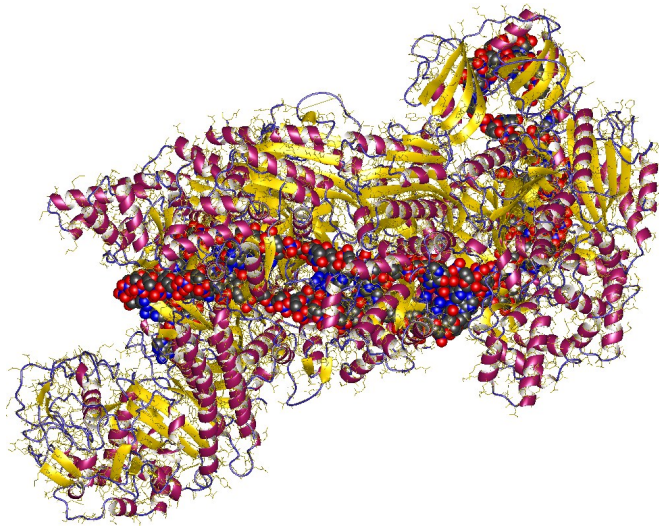


Chinese group injects CRISPR edited cells into human test subject for first time

16 November 2016, by Bob Yirka



CRISPR (= Clustered Regularly Interspaced Short Palindromic Repeats) + DNA fragment, E.Coli. Credit: Mulepati, S., Bailey, S.; Astrojan/Wikipedia/ CC BY 3.0

(Phys.org)—A team of researchers working at West China Hospital in Chengdu has for the first time injected CRISPR–Cas9 edited cells into a human test subject. *Nature* reports that the procedure occurred on October 28, and that thus far, the patient is doing "fine."

Modified cells have been injected into human subjects before, of course, but using different techniques. CRISPR-Cas 9 is considered to be a more efficient approach. In this new effort, the researchers isolated [immune cells](#) retrieved from a [blood sample](#), then used CRISPR-Cas9 to locate and disable the PD-1 protein in them, which prior research has shown slows an [immune response](#) by a cell. The idea is that disabling the protein will allow the immune system to put up more of a fight against tumor growth. The edited cells were placed in a container where they were fed and allowed to multiply—the entire collection was then gathered

and injected into a patient suffering from a type of lung cancer that had not responded to any other treatment type.

The CRISPR technique involves using an RNA guide that binds to a particular DNA sequence and an enzyme (the Cas9 part) that can cut strands of DNA at preselected spots, allowing for removing strands or adding new ones.

The research effort is being led by Lu You, an oncologist with Chengdu's Sichuan University and involves a patient who had already been injected and nine other volunteers. Other groups around the world, including one in the U.S., are still in the planning stages for conducting similar trials. The trial in the U.S. (which is slated to start early next year) will be also investigate the possibility of using CRISPR edited genes to fight cancer. Some have suggested the new development by the Chinese team signals the start of a race between superpowers reminiscent of the space race between the U.S. and the U.S.S.R back in the 1960s.

The first patient is scheduled to receive a second dose of modified cells, the team revealed, but did not give a timeline. That patient and all the others in the trial will be monitored closely for six months to determine if the edited cells cause any adverse effects—only then will the team be focused on whether the cells actually made any difference in slowing or reversing cancer growth.

More information: David Cyranoski. CRISPR gene-editing tested in a person for the first time, *Nature* (2016). [DOI: 10.1038/nature.2016.20988](https://doi.org/10.1038/nature.2016.20988)

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