

Facebook and Napster founder Sean Parker is going to “hack cancer” by CRISPR technology

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A billionaire Sean Parker, known as a founder of Facebook and Napster, has steeply entered Life Sciences industry to fund the world's first-ever CRISPR/Cas9 trial, backed by US federal authorities. Upon success, the probability of which is now hard to assess, this technology can revolutionize the way cancer and many other diseases are treated. This time, Sean Parker is playing a bigger game than ever, however, uncertainty is huge.

The fact is, CRISPR has not yet entered the clinic, but its preclinical tests have caused much hype due to its gene-editing capabilities based on its core technology of re-engineering DNA in a simple way and with remarkable precision. You can think of it as a microscopic pair of scissors which can slice DNA using protein Cas9. Targeting specific sequences of DNA and cutting them, you can then replace old sequence with a new one. Since DNA determines all the phenotypic features in the body and appears to govern the start of many incurable diseases such as cancer, HIV and cystic fibrosis, the possibility of “correcting” DNA can change human lives forever.

On June 21, a National Institutes of Health (NIH) gave a green light for the world's first trial for a CRISPR candidate. The next move will be that FDA clears the study as well as the medical centers where the Phase I program will be run. And then they can actually start recruiting and testing human patients with cancer.

In the first trial, the study will be focused on modifying T cells that play a central role in cell-mediated immunity, attacking malicious agents and protecting our body. Scientists are going to make T cells fight melanoma, sarcoma, or myeloma, thus curing cancer.

The trial will be run by a group of researchers from University of Pennsylvania, backed by recently founded Parker Institute, in collaboration with MD Anderson Cancer Center in Texas and the University of California, San Francisco. It is noteworthy that Penn's Dr. Carl June is one of the major innovators in T cell biology.

What are the risks of using CRISPR?

Any revolutionary breakthrough naturally brings risks and, in this case, they are quite substantial. Among key scientific concerns there are “off-target effects” and “after-treatment effects” which all deal with inadvertent DNA alterations or unpredictable reactions.

Another issue might be associated with purely organizational aspect as the trial is funded totally from a recently founded Parker Institute, which is a for-profit organization aiming at getting the ultimate result for itself from the whole program - money. The fact that this research is funded not from a government grant, say, from NIH, but by a privately held for-profit organization, is a potential risk of biased conclusions and decisions.

In any case, this is a big game and the result might be revolutionizing, so let's see if CRISPR can cure cancer.