Podcast: Beyond CRISPR and gene therapy—How ‘gene writing’ is poised to transform the treatment of even the rarest diseases

In just a few short years, gene editing has launched a biomedical revolution, yielding previously unimaginable treatments for conditions ranging from sickle cell disease to blindness. But for all its capabilities, the technology is limited by an important drawback: it typically can only disrupt a deleterious gene underlying a specific trait. So what do scientists do when editing a patient’s existing DNA won’t solve the problem? Write new genes.

The next step in the evolution of genetic medicine, gene writing exploits a natural process in cells that allows researchers to install genes of interest, replacing damaged DNA sequences that cause debilitating diseases and may not be treatable with other genetic engineering tools. According to Tessera Theraputics , a biotech startup working to harness the new technology’s potential:

> RNA gene writers can change base pairs, make small insertions or deletions, and integrate entire genes into the genome …. This flexibility means that in the future, we could cure rare genetic disorders with treatments that are easily distributed, manufactured at scale, and re-dosed if necessary.

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On this episode of Talking Biotech, Dr. Geoff von Maltzhan of Tessera joins host Kevin Folta to explain how gene writing works and highlight its most promising medical applications.

https://geneticliteracyproject.org/wp-content/uploads/2020/11/266_gene_writing.mp3

Dr. Geoffrey von Maltzahn is co-founder, Chief Executive Officer, and Director of Tessera Therapeutics, as well as a General Partner at Flagship Pioneering, where he focuses on inventing technologies and starting companies to address global challenges in medicine and environmental sustainability. Find Geoffrey on Twitter @GVMaltzahn

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