Cutting, Pasting, Splicing DNA; Welcome to the New World—Oops, Full of Mistakes

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> ***"I thought the technology was supposed to be perfect. What the hell is going on here?"***

by **Jon Rappoport**
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The bright new dawn of genetic engineering of life has a few problems. My, my.

Of course, the engineering companies pitching investors for money downplay the problems, and so do governments. Remember when Biden issued a release glorifying "overwriting cells of the body" (*) to achieve new breakthroughs in…something or other?

From Gene Watch UK, here are documented cases of genetic editing screw-ups. The language is technical, but you can grasp the essentials. Scientists are playing with fire.

"Petri et al. (2022) reported unintended genetic insertions and deletions in zebrafish following prime editing…Prime editing does not induce double stranded breaks and thus is often proposed to be safer than standard CRISPR/Cas systems. Nonetheless, integration of guide RNA derived DNA sequences was detected, showing that even using a technique without introducing foreign DNA, or double-stranded breaks, the technique does not rule out the potential for unintended insertion of exogenous DNA."

“Tao et al. (2022) reported insertions of transposable elements in human cells in vitro following both standard CRISPR/Cas9 and prime editing systems, though these unintended changes were more common with CRISPR/Cas9 systems. Moreover, hundreds of integrated copies of vector plasmid DNA used to deliver the prime editing machinery were also detected…Moreover, insertions occurred at induced DNA breaks where CRISPR/Cas9 has been applied for controversial therapeutic editing…”

“Weiss et al. (2022) reported that in Arabidopsis plants, the DNA repair pathway chosen by the plant cells to repair the CRISPR-induced DNA breaks was influenced by the epigenetic status of the genome, including DNA methylation status… This in turn, influences the final mutational outcomes. This paper highlights limitations in relying on predictive tools that only take into consideration sequence information when trying to predict efficiency, specificity and mutational outcomes of genome editing. Bigger complexities beyond the level of the genome are also involved.”

“Höijer et al. (2022) reported large structural unintended on-target changes, including 4.8kb deletions to 1.4kn insertions, in zebrafish. This study showed the passing down of these mutations to the next generation.”

“Huang et al. (2022) reported that following CRISPR/Cas12 editing in fungal species, doublestranded breaks are repaired with multiple DNA repair pathways, each with different mutational profiles. This study highlights the lack of current understanding around the various DNA pathways that exist in various species, and how they may impact editing outcomes. Rather than being able to predict or even control CRISPR mutations outcomes as is often presented by GMO proponents, this study instead shows how CRISPR is being used in research to try to understand the basic mechanisms and complexities of DNA repair. Without a full understanding of the underlying science, assertions of precision and thus safety are

unfounded.”

“Park et al. (2022) reported high levels of on-target unintended changes, when assessed using a new analytical tool that can sequence larger segments of the target site. Long range sequencing was able to detect a variety of changes including large deletions, highlighting the need for detailed analytical tools to assess on-target impacts.”

“Geng et al. (2022) report on-target unintended changes including genomic inversions, duplications, rearrangements and integration of exogenous DNA at the target-site in human cells, resulting in alterations in cell proliferation. This study highlights the potential impacts of unintended changes on target cell function, with implications for both edited plants and animals.”

But don’t worry, be happy. These genetic engineers all over the world may be bulls charging through shops shattering objects…but I’m sure they’ll eventually fix all their mistakes. Right?

For a final note—I’m not confident these genetic madmen even know what they’re playing with in the first place. When they see their errors, what are they really looking at? They make so many basic assumptions and guesses about DNA and genes, they could be operating in the dark, clueless and lost.

“Here’s a break in DNA where the repair after the cut failed.”

“Really? Are you sure that’s DNA?”

“It has to be.”

“Why?”

“Because if it isn’t, we have no idea what we’re doing.”

You know, THAT kind of thing.

The same kind of thing that happens when biologists trying to alter a virus fail to realize there isn't any virus there…

These awesome problems can only be ignored in one way: by deciding that the 8 billion people on planet Earth are merely subjects in a vast ongoing experiment. And therefore have no reason to complain.

— Jon Rappoport

(*) FURTHER READING:

The Biden White House Executive Order: *"Executive Order on Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy"* (September 12, 2022). The link to this EO is here. **My comments on this EO** are here—as a "breaking news" update—at the very beginning of this podcast.

See also this podcast: *"DARPA/Pentagon research projects to create future humans,"* here.

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