Cancer’s weak spots identified with CRISPR, gene editing

A UC San Diego-led research team has put the hot gene-editing technology CRISPR/Cas9 to a novel use, finding more than 120 new leads for cancer drugs.

With the gene editing technology, large numbers of genes can be tested simultaneously for their effect on cancer, said John Paul Shen, one of the study’s lead authors.

CRISPR has made the once cumbersome process of gene editing, faster and more precise, leading to comparisons with the impact of the word processor. But in this study, Shen and colleagues turned CRISPR on its head to selectively introduce disabling errors.

In this study, researchers looked for gene pairs that exhibit “synthetic lethality.” This is when inactivating both genes kills the cells, but if one gene in the pair is active, the cells survive. So cancers driven by a synthetic lethal mutation can be killed by inactivating the other gene in the pair, leaving normal cells unharmed.

Some existing drugs work this way, such as the ovarian cancer drug olaparib, Shen said. Sold under the brand name Lynparza, the drug was approved for in December 2014 for cancers with disabling mutations in the BRCA1 or BRCA2 genes.

[Read the full study here.]

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: Gene editing used to find cancer’s genetic weak spots

For more background on the Genetic Literacy Project, read GLP on Wikipedia.