The Production of Tumor Suppressor Protein TP53 and the Relative Homologous Properties Identified Using Gorilla Genome To Account the Absence of Cancer

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The researchers science fair project was inspired on the fact that cancer is one of the leading causes of death worldwide. This disease has taken over 10 million lives in the last year. The researchers thought that maybe humans have a protein or lifestyle difference that causes this cancer rate to be absent, hoping to find a cure/prevention for this terrible disease. Before testing, the researchers had to trace the exact genome sequence between the two organisms. The researchers chose to use Gorillas because the researchers found they are similar to the human genome. Once the researchers ran the sequences using BLAST and compared to see if there were any gaps and to also see how similar humans actually were. To get accurate conclusions, the researchers decided to run the BLAST 4 times and the researchers got 4 different hits of this genome. The researchers hypothesized that if there was more TP53 gene present in the homologous structure, then that organism would be much less susceptible to cancer formation. When the researchers started testing, the TP53 gene was inputed in the BLAST between both organisms. BLAST is a finds regions of similarity between biological sequences. The researchers used this protein that is found in every species because it is in charge of regulating the cell division. Once the researchers did this, the data was derived from both sequences with the TP53 that was targeted. The researchers found that TP53 gene was much more present in the Gorilla sequence. This can be one very huge reason why Gorillas have a 2% cancer rate. However, the researchers also had to account for the lifestyle differences between humans and Gorillas.

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