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Optimistic Future for Gene Editing

The human genome is very complex containing many thousands of genes. Species can gradually get rid of the traits that are unnecessary and gain new, beneficial functions. Through generations, these genes are mutated, hopefully to aid the host with survival. By analyzing the genome, specific genes that an organism contains can be analyzed. If the genome is altered for an organism, that the organism will take on the function of the new genes. There is potential to find certain genes and alter them to acquire specific results.

Today, humans are not covered in hair from head to toe like we once were so this evolution must have been beneficial to the species. The article from The Washington Post Humans Still Have the Genes For a Full Coat of Body Hair analyzes the evolution of humans and the mutated genes that caused this. Humans living in warmer climates were at a disadvantage with the excess body hair because it inhibited their ability to hunt their prey because they were more likely to overheat. The decrease of body hair is thought to go hand in hand with the ability to cool the body down through sweating. Humans with these genetic adaptations were more likely to survive and pass these advantageous genes down to their offspring. Humans were not the only species to take on this mutation, so scientists looked at multiple species' genomes to identify the specific gene(s) responsible for hair loss.

The genomes have been analyzed for many species, focusing on what differences in their genes give them special advantages. Some species' genetics protect them from cancer while others can have a prolonged lifespan. One question is, is there a way to take the desired genes from one species and apply it to humans? This could cure many diseases and prevent many others. Specifically, for genetic disorders that disrupt hair growth, such as alopecia. There is hope that by pinpointing the gene that causes the lack of hair growth, the gene may be altered to undo the unwanted symptoms. According to the National Library of Medicine, there are different therapies that can encourage hair growth. These therapies include transforming signaling pathways, inhibition of signaling factors, and activating the immune response to upregulate certain proteins. This specific example can represent the larger picture of many more medical issues and seek to cure them using the human genome. This article seems to be accurate because it is stating the many possibilities of how our genes have evolved in the past rather than stating a definite answer. The article also speculates how these answers could lead to the mutation of certain genes to see desired results. There are no definite answers, but the article is shedding light on the hopeful future. This is accurate across many fields, because as technology advances, specific genes are being able to be more easily targeted which leads to more possibilities that this article states.

This relates to genetics because learning how our genes have evolved in the past can teach us how to ethically mutate them in the future for desired effects to combat devastating medical issues. Along with technological advancements, scientists are becoming more successful with altering gene expression within organisms. As more advancements are made, more progress will be evident surrounding these mutations.

Works Cited

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