Alana Canty

J. Rinehart-Kim

Genetics

01 November 2023

Researchers in Boston have developed a treatment to target a genetic mutation that is resistant to Alzheimer's disease. This genetic mutation was identified by researchers as a genetic variant in the APOE Christchurch gene which offers resistance to Alzheimer's and is capable of creating antibodies that target interactions between APOE and proteins. The treatment is described as an Alzheimer's disease monoclonal antibody treatment, and it is said to be very promising. This is due to it being effective in reducing abnormal tau proteins that are associated with Alzheimer's. When tested on mice, one antibody that was produced, called 7C11, showed potential resistance to Alzheimer's nu reducing abnormal tau proteins. Treatments that currently exist focus on reducing amyloid plaques, but this new approach provides an alternative that may also lead to disease-modifying therapies. The researchers at Boston University have received a grant to further study the genetics of Alzheimer's to identify new drug development targets for the disease. The researchers will be conducting their research on a specific population, the Jewish and Arab citizens of Israel.

This article is related to genetics because of its focus on Alzheimer's disease research. It discusses a new development made by Boston researchers and how it is related to genetic factors, the development being a new monoclonal antibody treatment for Alzheimer's disease. The article discusses how the treatment that is being developed is linked to a genetic mutation found in the APOE Christchurch gene, and how researchers are trying to replicate the effects of this mutation in their treatment. Furthermore, this treatment is being tested on mice that have been genetically modified. This suggests that the treatment will target genetic factors that are associated with Alzheimer's disease. Lastly, the article mentions that the Boston researchers have received a grant to further their studies and development of the treatment and Alzheimer's disease. Their studies will focus on a specific population, emphasizing the goal to identify genetic factors of Alzheimer's disease.

This information found in this article is supported by the article "Anti-Amyloid Monoclonal Antibodies are Transformative Treatments that Redefine Alzheimer's Disease Therapeutics" written by Jeffrey Cummings. In his article, Cummings discusses two treatments with promising potential to treat Alzheimer's disease, one being anti-amyloid monoclonal antibodies for the treatment of Alzheimer's disease. It is said in this article that the two therapies being discussed, one of which being the treatment was highlighted in the article published by the Virginia Pilot, are the first therapies for Alzheimer's to have been approved of in 20 years, as wells as the first disease-modifying therapies for Alzheimer's to be approved of. Cummings' article discusses how the development of this new treatment opens doors to other potential therapies and treatments, and benefits Alzheimer's patients in areas where there was previously no possible aid. The information that was provided is Cumming's article not only supports the information that was provided by the article published by the Virginia Pilot, but it also expands on the possibilities of treatments for Alzheimer's, the trajectory of further research for therapies, and it discusses the impact it will have on the medical field.

References

Cummings, J. Anti-Amyloid Monoclonal Antibodies are Transformative Treatments that Redefine Alzheimer's Disease Therapeutics. *Drugs* **83**, 569-576 (2023). https://doi.org/10.1007/s40265-023-01858-9

Sobey, R. A new Alzheimer's monoclonal antibody treatment shows promising results: 'Hopefully more effective approach'. *Pilot* (2023). Available at: https://www.pilotonline.com/2023/10/06/a-new-alzheimers-monoclonal-antibody-treatment-shows-promising-results-hopefully-more-effective-approach/. (Accessed: 1st November 2023)