Origin of CCR5-Delta 32 Mutation

Thesis:

HIV/AIDS is one of the modern diseases that has caused confusion about its origin and panic within the population when it first appeared. It brought homophobic reactions for the lack of information. Studies have clarified its origin, yet the cure has not been available. Recent discoveries have found that about 10% of the European population carry a mutation called CCR5-Delta 32 deletion. This mutation is a form of natural selection that has allowed individuals with this trait to be practically immune to HIV-1. This discoveryment brings hope to researches seeking the cure of such aggressive disease. The origin of CCR5-Delta 32 and the reason why only such selective group of Europeans carry this mutation has now been a topic of discussion.

When it was first discovered, scientists believed that the bubonic plague, also known as the Black Death (1346-50 approx.), was the answer to the mutation. Recent studies have suggested that this mutation has been present since before the bubonic plague, being the Black Death only part of the history behind the origin of CCR5-Delta 32.

Annotated Bibliography:


<http://jmg.bmj.com/content/42/3/205.full.pdf+html>.

According to this article, HIV strains are unable to enter macrophages that carry the CCR5-Delta32 deletion. The allele mutation can be found in the average of 10% in
European populations. A scientific model establishes how plague epidemics (1347 to 1670) could have provided the “selection pressure” that elevated the incidence of the modification to the level seen now in day. Yet, new evidence suggests that the original single mutation appeared over 2500 years ago, and that persistent epidemics of a hemorrhagic fever that affected the early classical developments served to strengthen the occurrence at the time of the Black Death.

This source demonstrates the existence of the mutation before the bubonic plague affected Europe, as for throws the theory that suggests that the CCR5-Delta32 deletion is a result of this event. The goal of this source is to inform the reader of new discoverments made that affects the notion of the origin of the mutation. The conclusions are merely based in the results of studies made about the issue. My goal is to provide new scientific evidence that demonstrates that the bubonic plague is not the absolute answer to the formation of the mutation as well as other theories about its probable origin.


This article touches an evaluation of several potential immunological benefits that have been observed during treatment with the CCR5-Delta 32, in count to its antiviral influence. The objective of this article is to analyze the in vitro effects of CCR5 blockade
on T lymphocyte function and homeostasis. Different methods of experimentation concluded with the acceptance of the positive effect of the mutation against HIV-1.

This article is overall an informative piece, produced to share scientific findings of the possible beneficial effects of CCR5-Delta 32 and other receptors to fight or prevent the propagation of HIV-1 virus in the organism. The amount of scientific information and the results of the article’s findings makes the source objective. This source is intended to aid the research in providing evidence of how the CCR5-Delta 32 receptor is beneficial against HIV-1 disease. For those limited amount of individuals who naturally hold this mutation, may enjoy the benefits.


This article discusses about medical scientists that connect the Black Death and AIDS pandemics with the CCR5-Delta 32 receptor. According to the article, this hypothesis is not sustained by the historical evidence. The Black Death did not strike Europe alone, but spread from the east, devastating other areas such as China, North Africa, and the Middle East as much or even more than Europe. Additionally, in Europe its levels of death do not relate with the geographic distribution of the proportion of descendants with this CCR5 gene.

The article is critical in considering that there should be closer partnership between historians and scientists in order to understand the “selective pressures” on genetic mutation, and the use of more tantalizing methods of evaluation before assessing data.
This article provides historical evaluation and compares it to the theories that connect the Black Death and the CCR5-Delta 32, as it also demonstrates that the bubonic plague is not responsible for the mutation. The article is a criticism to scientists that claimed the discoverment of the connection of the previously mentioned plagues as the cause of the mutation. This article is additional supportive material to demonstrate that the bubonic plague is not the main cause of the mutation in my research.