

Free essay on evolution of blood types

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Gibbons, chimps, and other primates are not just considered evolutionary related to human beings, scientific analysis suggests that there are blood relationships between the two. The human blood types A, B, and O in human beings are approximated to have evolved about 20 million years ago, which is assumed to be as old as the human existence. This scientific research also reveals the existence of a common ancestry between these primates and human beings. According to scientific knowledge, blood types are broken down into two groups of positive and negative, which are referred to as the Rhesus factor (RH). Therefore, if the blood tests positive, it implies that the blood has the factor. On the other hand, a negative blood type does not have the Rhesus factor in it.

There are at least three hypotheses that have been developed in the biological history to explain the mutation and emergence of human blood groups. These hypotheses include climate, diseases, altitude, and humidity amongst several other hypotheses that are yet to get clear explanation. However, the emergence and evolution of the human blood types remain unclear. The geographic distributions and the racial blood groups not only result in the below mentioned assumptions, but the process of natural selection against the environmental factors also suggests the possibilities of blood types emergence and evolution. In this literature review, several peer reviewed articles will be reviewed to ascertain the history and evolution of human blood groups ABO and the Rhesus factor. Different approaches have been used to explain the differences in the aforementioned blood types as well as their evolution. It is believed that blood group O was the first blood type to be identified, followed by the blood type A, B, and finally AB.

Approximately in 1900, Karl Landsteiner discovered why some blood transfusions were deadly while others were successful at the University of Vienna. It is asserted that he discovered the ABO blood group system through mixing the serum and red blood cells of each of his staff (). In his research, Karl Landsteiner demonstrated that some the serum of some of his staff agglutinated the red blood cells of other people. Therefore, he concluded that this phenomenon was similar to all other people and not his staff only. It is also assumed that Karl Landsteiner identified three blood types and named them A, B, and C. However, the latter blood group was later named blood group O meaning “zero” or “ohne” in English and German respectively. He later discovered a fourth blood type AB the following year, which was less frequent among people.

Human blood groups are very old genetic indicators, which scientific research and hypotheses have asserted to have evolved in about 20 million years ago. It is assumed that based on the primary races hypothesis, the three major human races of human beings such as Europeans, Asians, and South Americans were attached to the blood groups A, B, and O respectively. These blood groups emerged in these human races and due to gradual mixing and migration of the human races; the blood groups equally became the present situation of the differences in human blood groups. The fact that there exist different isolated human populations with completely different blood groups tends to prove this hypothesis. For instance, the high prevalence of blood group O in Switzerland and the Serbian inhabitants prove the fact that human blood types were initially common to a specific population or race.

Another hypothetical stance argues that the emergence of the blood groups A and B and their subgroups came as a result of successive mutations from a common and basic blood group called blood group O (). According to the latter theory, the old human races such as the Red Indians of South America and Eskimos have blood group O. Research reveals that the blood group frequency among these populations ranges between 75 percent and 100 percent. However, in the most recent ethnic groups, the mutations have resulted in the dominant blood groups A and B. However, this hypothesis has been proved in several instances while testing the blood types in different populations and comparing these current blood types with those that are assumed to have existed in the same areas over a period of time. Trends indicate that there is an increase in the blood groups A, B, and AB in areas where most of the population had blood group O such as the aforementioned Red Indian Territories.

There is a growing controversy in the specific blood type that was first identified based on different scientific hypotheses and theories. In another hypothesis, it is assumed that the first blood group was blood group AB. This blood group gradually resulted in blood groups A and B, and latter blood group O. This theory is assumed to be responsible for the uncommon blood groups AB and O. this could be due to the fact that the genetic mutations have over time resulted in the other blood groups, leading the reduction of the former. The later introduction of blood group O is also argued to be responsible for its rare presence.

Recent research indicates that the differences in the types of proteins, glycolipids and glycoproteins found on the surface of the red blood cells are

responsible for defining the differences in the blood types in human beings. About 28 separate studies on blood evolution have depicted that chimpanzees have the blood type A and a small population of these animals also have the blood type O. However, they do not possess the blood type B. Other eight separate studies have indicated that the Gorillas have the blood type B while few of them have blood type O. The Gorillas also lack the blood type A. Among all these studies, the man-apes were not found with blood type AB (). These studies combined imply that the apes and the human population share a common blood origin. However, since animals do not mix across Chimpanzees and Gorillas their varied reactions to the Rhesus factors in the blood types A and B. Human beings have been mixing across races all over the world, which has ensured that the latter have different resultant blood types such as AB. This proves the evolution of these blood types since the parents and related animals have blood types similar to the present human beings and primates.

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