

New research suggests all primates shared common blood type ancestor

October 23 2012, by Bob Yirka



Bags of blood collected during donation. Image: Wikipedia.

(Medical Xpress)—An international team of researchers has found evidence that suggests that the ABO blood types found in all primates developed in a shared common ancestor. In their paper published in the *Proceedings of the National Academy of Sciences*, the team describes how a genetic analysis of the ABO blood types revealed that they developed much earlier than had been previously thought, which they say, shows that ABO blood types did not develop independently in different species.

There are four major blood types in humans and all other primates: A, B, AB and O. Each is identified by the antigens on the surface of the individual [red blood cells](#) and the corresponding antibodies that respond to them. They are known collectively as ABO blood types and scientists don't know why they evolved or what the reason is for having more than one. Since the discovery of blood types at the beginning of the last

century, scientists have believed that they evolved separately in humans and other primates. This new study contradicts that belief by suggesting that ABO blood types developed before primates split off into different species, suggesting that the ABO blood types in modern primates all evolved from a [common ancestor](#).

To come to this conclusion, the researchers built on previous evidence that had found that two [amino acids](#) responsible for the development of A and B blood types were identical for macaques, humans, baboons, gibbons and [orangutans](#). They performed a [genetic analysis](#) of blood types from three species of primates: *Hylobates lar*, *Macaca mulatta* and *Colobus angolensis* and found that the blood types for all three developed much earlier than researchers had previously thought – approximately 20 million years ago, a point in history prior to the time when each had split off from a common ancestor, evolving into a unique species. This suggests that ABO blood types evolved in a common ancestor and has persisted in each species since that time.

In comparing and highlighting the differences between primates with different blood types, using the genetic evidence, the researchers also found that for one small region of the genome, people with type A blood are more similar to a Gibbon with type A blood than they are to people with type B blood.

More information: PNAS October 22, 2012 [doi: 10.1073/pnas.1210603109](#)

© 2012 Phys.org

Citation: New research suggests all primates shared common blood type ancestor (2012, October 23) retrieved 5 May 2024 from <https://medicalxpress.com/news/2012-10-primates-common-blood-ancestor.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.