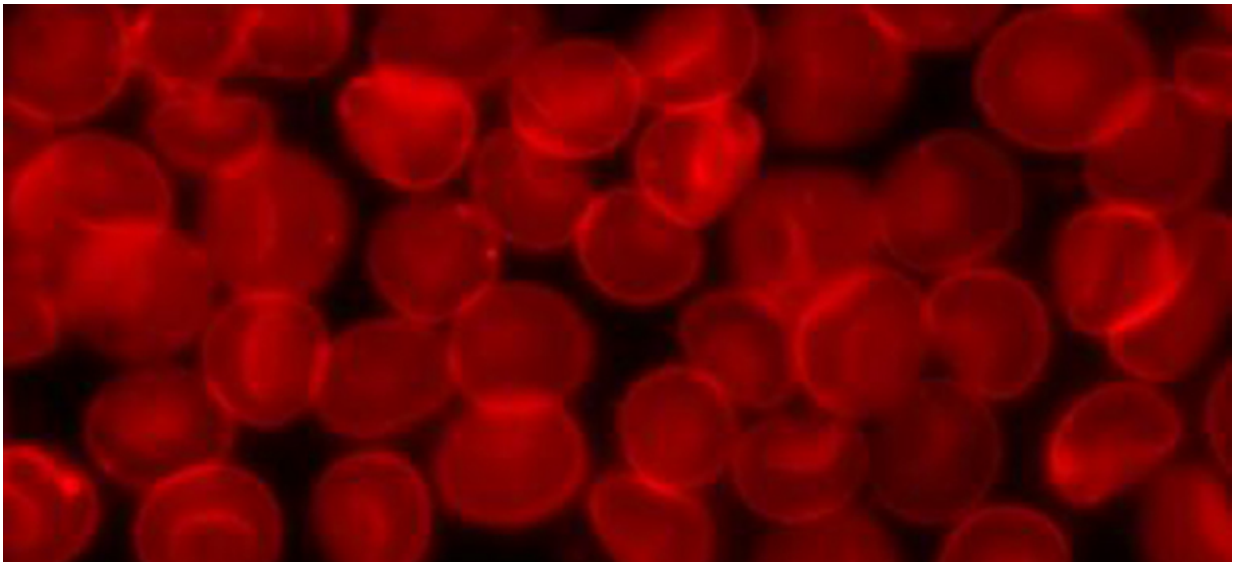


# Blood serum study reveals networks of proteins that impact aging

August 3 2018, by Bob Yirka

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Credit: Wikimedia Commons

A team of researchers from several institutions in Iceland and the U.S. has conducted a unique blood serum investigation and discovered multiple protein networks that are involved in the aging process. In their paper published in the journal *Science*, the group describes their study and what they found.

Prior research has shown that when older mice have their blood systems connected to younger mice, the older mice experience improvements in

age-related organ deterioration. This finding has led scientists to suspect that aging might be caused by something in the blood. In this new effort, the researchers sought to test this idea by studying proteins in the circulatory system.

The study consisted of analyzing blood samples from 5,457 people living in Iceland, all of whom were over the age of 65 and who were participants in an ongoing study called Age, Gene/Environment Susceptibility. The volunteers had also been chosen specifically to represent a cross section of the people living in Iceland. The major part of the [blood](#) analysis involved creating a panel of DNA aptamers (short sequences that bind to proteins) that could be used to recognize proteins, both known and unknown. Blood serum from the volunteers was then compared against the panels and the results were analyzed by a computer looking for patterns.

The researchers report that they discovered 27 networks that showed evidence of coordinated pattern expression. These networks, or modules, as the researchers call them, were different from one another in size and form and were made of proteins from both tissue and organs. They also report that many of the modules had expression patterns that have in the past been associated with age-related diseases such as heart disease and metabolic syndrome—and there were some that were also associated with mortality in the years after the samples were taken from the volunteers. The group suggests their findings offer more evidence of the role [blood serum](#) plays in the aging process.

The researchers report that they also looked for the means by which the networks they discovered are regulated and found that approximately 60 percent of mechanisms involved are unknown.

**More information:** Valur Emilsson et al. Co-regulatory networks of human serum proteins link genetics to disease, *Science* (2018). [DOI:](#)

[10.1126/science.aag1327](https://doi.org/10.1126/science.aag1327)

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Citation: Blood serum study reveals networks of proteins that impact aging (2018, August 3)  
retrieved 18 April 2024 from

<https://medicalxpress.com/news/2018-08-blood-serum-reveals-networks-proteins.html>

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