

Natural substance in red wine has an anti-inflammatory effect in cardiovascular diseases

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Researchers see great therapeutic potential in the natural substance resveratrol, particularly in connection with prevention of the synthesis of inflammatory factors in cardiovascular diseases. Credit: Peter Pulkowski, Mainz University Medical Center

A natural substance present in red wine, resveratrol, inhibits the formation of inflammatory factors that trigger cardiovascular diseases.

This has been established by a research team at the Department of Pharmacology of the University Medical Center of Johannes Gutenberg University of Mainz (JGU) working in collaboration with researchers of the Friedrich Schiller University in Jena and the University of Vienna. Their results have recently been published in the scientific journal *Nucleic Acids Research*.

Despite the fact that they eat more fatty foods, the French tend to less frequently develop cardiac diseases than Germans. This so-called French Paradox is attributed to the higher consumption of red wine in France and it has already been the subject of various studies in the past. A number of research projects have actually demonstrated that the natural product resveratrol, present in [red wine](#), has a protective effect against cardiovascular diseases. But what exactly is the reason for this? It seems that at least part of the [protective effect](#) can be explained by the fact that resveratrol inhibits the formation of inflammatory factors, a conclusion reached by the research team of Junior Professor Andrea Pautz and Professor Hartmut Kleinert of the Mainz University Medical Center following collaboration in a joint project with Professor Oliver Werz of the Friedrich Schiller University in Jena and Professor Verena Dirsch of the University of Vienna. In fact, the researchers discovered that the natural substance binds to the regulator protein KSRP and activates it. KSRP reduces the stability of messenger RNA (mRNA) in connection with a number of inflammatory mediators and thus inhibits their synthesis.

"We now know more precisely how resveratrol inhibits the formation of the inflammatory factors that trigger cardiovascular diseases. This is an important finding in view of the fact that more recent research has shown that cardiovascular diseases are significantly promoted by inflammatory processes in the body," said Pautz. Cardiovascular disorders, such as myocardial infarction and strokes, frequently occur in association with [chronic inflammatory diseases](#), such as arthritis. The

[natural substance](#) resveratrol thus has major therapeutic potential, particularly when it comes to the treatment of [inflammatory diseases](#) that can cause serious damage to the cardiovascular system.

More information: Pautz, A. et al. (2014), "Resveratrol post-transcriptionally regulates pro-inflammatory gene expression via regulation of KSRP RNA binding activity," *Nucleic Acids Research*, DOI: [10.1093/nar/gku1033](https://doi.org/10.1093/nar/gku1033)

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