# Scientists pinpoint a protein that affects heart transplant survival

April 2 2015, by Ziba Kashef

The protein haptoglobin boosts inflammation in transplanted hearts, reducing their survival, according to a study led by Yale researchers. The finding may help identify new anti-inflammatory therapies to enhance organ transplant survival.

Inflammation has detrimental effects on the fate of transplanted organs, increasing the risk of rejection. The cause and mechanism that underlies this inflammation is not well understood. To explore pathways leading to

inflammation after heart transplantation, Dr. Daniel R. Goldstein, professor of medicine and immunobiology at Yale School of Medicine, and his research team used proteomics, which is the study of protein structure and functions.

Employing mouse models of heart transplantation, the researchers discovered that haptoglobin increased in transplants, triggering inflammation. This enhanced inflammation in turn significantly reduced the long-term survival of cardiac transplants. The researchers also found evidence of haptoglobin in human heart transplant specimens, which suggest their experimental findings may be true in humans, as well.

Given haptoglobin's complex role in the body, further research is needed to determine whether it should be a target for future therapies. "A larger clinical study will be required to fully appreciate how haptoglobin impacts the fate of organ transplantation in humans," said Goldstein.

The study was published online March 23 in *Circulation Research*.

**More information:** "Haptoglobin Enhances Cardiac Transplant Rejection." *Circulation Research*. 2015;CIRCRESAHA.114.305406published online before print March 23 2015, DOI: 10.1161/CIRCRESAHA.116.305406

Provided by Yale University