

New agent improves kidney transplant survival in mice, likely to speed replacement of other organs

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New research published online in the *FASEB Journal* details a new antibody, called "OPN-305" that may significantly improve survival outcomes for those receiving donated kidneys and other organs. OPN-305 works by preventing inflammation triggered by oxygen deprivation in the donated organ, allowing for better recovery after transplantation. Specifically, it binds to sensors on transplant tissue, called "toll-like receptors" or "TLR-2," in the circulating blood and turns off signals that provoke inflammation. In addition, the compound is likely to extend the life of a donated organ after it has been transplanted.

"Although the work was carried out with kidney transplants, it is likely that other types of transplants could benefit. Other common types of [organ transplants](#), needed for liver or heart or lung disease, are also vulnerable to damage induced by the transplant procedure, especially where there has been a long period of cold storage without a normal blood supply," said Steven H. Sacks, study author from the MRC Centre for Transplantation at King's College School of Medicine in London. "For other medical conditions such as stroke and heart attack, where the blood flow to vital organs is blocked, it is highly possible that this new treatment may also make recovery more complete."

Sacks and colleagues made this discovery using two groups of mice receiving kidney transplants. The first was treated with OPN-305 and the second was given an irrelevant agent. The group treated with the

OPN-305 showed good recovery of function in the transplanted organ, whereas the control treatment had no effect and the animals developed severe organ damage. Researchers say a clinical trial design using a similar antibody for use in human patients is underway.

"This new antibody is exciting because it basically increases the 'shelf life' of organs that are critically needed for transplantation," said Gerald Weissmann, M.D., Editor-in-Chief of the [FASEB Journal](#). "Since it is directed against molecules that regulate inflammation, OPN-305 is likely to extend the lifespan of any other transplanted organs. Although human trials have not yet begun, this work identifies TLR's as targets for drugs to reduce inflammation and organ rejection."

Provided by Federation of American Societies for Experimental Biology

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