

Novel therapy to reduce immune rejection of transplant cells



Researchers have just published a unique, possibly life-saving method that may stop antibodies from causing the immune system to reject designed therapeutic and [transplant cells](#).

It has been particularly difficult to cure rejection caused by antibodies as compared to the chemical attack started by immune cells, which has slowed the development of some of these therapies.

The novel method required utilising a trick receptor to bind the antibodies and remove them from the body before they could destroy the therapeutic cells, which they regarded as alien invaders. The strategy could be helpful for [organ transplants](#) as well. It is extremely difficult to overcome this antibody-mediated rejection. Therefore, rather than attempting to weaken the patient's immune system, researchers instead searched for ways to change the cells the patient would get so they have a higher chance of surviving.

Chimeric antigen receptor (CAR) T-cell therapies are the most well-known cellular treatments in the United States. These CAR-T treatments are frequently employed to effectively treat types of lymphomas, a type of frequently fatal malignancy. However, applying them to solid tumours has proven to be far more challenging. Three different cell types—producing

thyroid, CAR-T, and pancreatic islet cells—were genetically altered by the researchers to produce and exhibit prodigious amounts of the protein CD64 on their surfaces.

The CD64 on these altered cells served as a form of decoy, collecting the antibodies, and adhering them to the designed cell so they wouldn't activate immune cells. CD64 strongly binds the antibodies responsible for this type of immunological rejection.

Journal article: Gravina, A., et al. 2023. [Protection of cell therapeutics from antibody-mediated killing by CD64 overexpression](#). *Nature Biotechnology*.

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