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# Canadian researchers to convert any blood group to Type O

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**Using a technique called metagenomics, the team was able to take a large amount of microbes from a sample of human faeces and get a snapshot of all the DNA found in the gut.**



A team of researchers from the University of British Columbia, Canada has isolated an enzyme in the gut that reliably converts any type of blood into type O, which is compatible with nearly everyone.

There are four basic types of blood group, AB, A, B and O, and each group is characterised by the presence of antigens, which are sugars on the surface of the cells. Type A blood has A antigens, type B blood has B antigens, type AB has both, and type O has no antigens.

Using a technique called metagenomics, the team was able to take a large amount of microbes from a sample of human faeces and get a snapshot of all the DNA found in the gut.

The team then isolated bacterial genomes from the sample and tested thousands of enzymes against sugary proxies that resembled A and B antigens.

One enzyme was found to be particularly effective at stripping away A antigens from red blood cells.

Researchers were then able to combine their new enzyme with one that is already known to remove B antigens from blood cells, providing a way to convert AB, A and B blood into type O.

The researchers hope to continue exploring their new approach to blood-type conversion in clinical trials to test the effects on the human body.