

Tailor-made HIV/AIDS treatment closer to reality

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An innovative treatment for HIV patients developed by McGill University Health Centre researchers has passed its first clinical trial with flying colours. The new approach is an immunotherapy customized for each individual patient, and was developed by Dr. J-P. Routy from the Research Institute of the MUHC in collaboration with Dr. R. Sékaly from the Université de Montréal. "This is a vaccine made for the individual patient - an "haute couture" therapy, instead of an off-the-rack treatment" said Dr Routy.

By "priming" the immune system, as with a vaccine, to fight the specific strain of [HIV/AIDS](#) infecting a given patient, the scientists believe they have developed a therapy that shows immense promise and could be an even more effective weapon against the virus than the anti-retroviral cocktails currently in use. The results of the first-stage clinical trials, which tested the therapy in conjunction with anti-retroviral drugs, were published recently in *Clinical Immunology*. Phase 2 of the clinical trial, which is nearly complete, is testing the therapy's efficacy on its own at 8 different sites in Canada.

The new therapy uses dendritic cells which are removed from each HIV-infected patient and subsequently multiplied in-vitro. Dendritic cells present material from invading viruses on their surface, allowing the rest of the immune system to identify and attack the invaders. "They are the "grand conductors" of the immune response," explains Dr Routy. "With them, you push the immune system, in all its functions, at the same time." In the current trial, dendritic cells were exposed to a sample of

HIV RNA (ribonucleic acid) specific to the patient involved. This exposure encouraged the cells to develop defences specific to that viral strain. The modified cells - called AGS-004 - were then injected back into the patients.

Not only were there few reported side-effects from the AGS-004, but the researchers also measured increased levels of CD8-lymphocytes in the patients - the "attack" cells of the human immune system that the treatment is intended to mobilize, thus confirming that the intervention was targeted and controlled.

By boosting the [immune system](#) in this way, Routy hopes to develop an HIV/AIDS treatment that will require fewer injections and less long-term toxicity for [patients](#) than antiretrovirals.

Source: McGill University Health Centre ([news](#) : [web](#))

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