

Tropism testing

Summary

Tropism testing lets your doctor know more about the type of HIV that is in your body. Results from this test will help you and your doctor decide which treatment to use. In Canada, tropism testing is free and it takes two to three weeks to get your results.

Key points

- HIV uses several *receptors* (molecules on the surface of your immune cells) to enter and infect the cells of your immune system. It uses CD4 receptors and the co-receptors CCR5 or CXCR4.
- Tropism testing will help your doctor find out which co-receptors the HIV in your body uses. If you have HIV that uses CCR5 co-receptors, then it can be treated with maraviroc. If your HIV uses CXCR4 co-receptors, then maraviroc or other drugs that block CCR5 will not work.

Know your co-receptors

To better understand tropism testing and how it can help determine what kind of medication will be able to effectively fight HIV, let's start by looking at how HIV infects a cell.

HIV needs to use different receptors before it can get inside a cell. These receptors are found on the surface of a cell. The first receptor that HIV needs is called CD4. After attaching itself to CD4, HIV then needs one of the following two co-receptors to gain entry to a cell:

- CCR5; or
- CXCR4.

HIV that prefers to use the CCR5 co-receptor is called R5 tropic and HIV that prefers to use CXCR4 is called X4 tropic. Some types of HIV use both co-receptors; these are called dual or mixed tropic (D/M).

Finding out the tropism of HIV is important because there is a treatment available for R5 tropic HIV. This treatment is called maraviroc (sold under the brand name Celsentri). Maraviroc works by covering the CCR5 co-receptor so that HIV cannot use it and infect cells. There are other drugs that also work by blocking CCR5, but these drugs are still in clinical trials.

FACT SHEET

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How tropism testing works

To confirm which co-receptor the HIV in your body uses, you need to speak to your doctor. He or she will fill out a form for you to take to a lab for this test. For tropism testing to work, your viral load—a measure of the amount of HIV in your blood—must be at least 500 copies. At the lab, a technician will draw some blood, which will then be sent for analysis.

After two or three weeks, your doctor will get the results, which will be reported as:

- **R5**—this means that the HIV in your body uses CCR5 co-receptors and that **you can use maraviroc**.
- **Non-R5**—this means that the HIV in your body tends to use CXCR4 co-receptors and that **maraviroc will not work**.
- **Non-reportable**—this means that the test did not work for some reason (for example, there was not enough virus to test in the sample).

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Disclaimer

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

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