



CYP3A4/5 Genotype Testing in Transplant

What is CYP3A4/5 genotype testing?

Genotype testing is a type of DNA test. The CYP3A4/5 genotype test looks at your **genetic profile** (information about specific genes) for two genes to predict how your body will respond to specific medications. Your provider may recommend this testing to help identify what medication or medication dose might work best for you.

What is CYP3A4/5?

CYP3A4 (sip-three-a-four) and **CYP3A5** (sip-three-a-five) stand for cytochrome P450 3A4 and 3A5, which are substances in your body that help activate (turn-on) or inactivate (turn-off) certain medications. The ability of CYP3A4 and CYP3A5 to activate or inactivate medications varies between people based on their DNA. Most people have normal CYP3A4 activity, but about 3-5% have **slow CYP3A4 activity**, meaning their body takes longer to activate or inactivate medications. About 10-20% of people have **fast CYP3A5 activity**, meaning their body can activate or inactivate certain medications more quickly.

How is the testing done?

You will have a blood draw to provide the DNA needed for this test; your provider will order the blood draw. After the sample is collected, it is sent to a clinical laboratory that evaluates your DNA and identifies the CYP3A4 and CYP3A5 activity you likely have.

How will my provider use the test result?

Your transplant providers will use the CYP3A4/5 genotype test result and information about your other medications and conditions to personalize the dose of a medication called **tacrolimus**. Tacrolimus is one of the medications used to prevent rejection of your transplant. **The dose of tacrolimus is unique for each person and having this genotype test helps your providers determine what dose you are likely to need.**

What should I do with the test result?

Your providers at Michigan Medicine will be able to view this test result to help determine the best medications and dosing for you. If you see providers at other institutions, let them know that you have been tested for CYP3A4/5 and share your result with them so that they can also use this information to personalize your medications.

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Author: Amy Pasternak, PharmD, BCPS

Edited by: Amy McAlister, MSA

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