

Pharmacogenetic Testing for HLA-A*31:01

What is pharmacogenetic testing?

Pharmacogenetic testing is a type of DNA test that uses your **genetic profile** (information about your specific genes) to predict how your body will respond to specific medications. Your provider may recommend pharmacogenetic testing to help identify what medication or medication dose might work best for you.

What is HLA-A*31:01?

- **HLA** stands for **human leukocyte antigen**, which is a type of protein on the surface of your cells that helps your body tell the difference between your own proteins and those that might be harmful, such as bacteria or toxins. **HLA-A*31:01** is a DNA change found in many different populations.
- Testing positive for HLA-A*31:01 (having a genetic test that shows HLA-A*31:01 is present) doesn't usually cause any problems by itself. However, it may affect the way your body responds to specific medications. For example, people that test positive for HLA-A*31:01 have a higher chance of severe skin reactions when given certain medications. These may include hypersensitivity reactions, drug reactions with eosinophilia and systemic symptoms (DRESS), maculopapular exanthema (MPE), and Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN). These reactions can cause widespread rash, blistering, and peeling of the skin, and they can be life-threatening.

How is the testing done?

There are several ways to get a DNA sample, including through a blood draw or cheek swab. Your provider will share the specific method for your test with you. After collecting the sample, we send it to a clinical lab that tests your DNA and identifies if HLA-A*31:01 is present or not.

How will my provider use the test result?

Your provider will use the result to decide if certain medications are safe for you to take. The most common medication with a higher risk of bad skin reactions in people that test positive for HLA-A*31:01 is carbamazepine (Tegretol®). If you test positive for HLA-A*31:01, your provider will likely recommend a different medication.

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 for you. If you see providers at other health systems, let them know that you have been tested for HLA-A*31:01 and share your result with them so that they can also use this information to personalize your medications.

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