

Understanding Immunoassays for Dummies

Immunoassay is a test in biochemistry that measures a specific concentration of a substance within a biological liquid. This means that an immunoassay test can be conducted on blood, serum or urine to measure the concentration of a substance that is found in that liquid sample. The immunoassay test uses a specific antibody in order to test the concentration of the substance within the sample. The antibodies react with an antigen to show the results of the test. The most common antibody used in the immunoassay test is the Monoclonal antibodies. These antibodies have the capability to bind to one site of any particular molecule and are the best way to provide an accurate test result. The specific type of antibody must have a high affinity to the antigen that is being tested for; otherwise the antibody may not bind to the antigen to get an accurate test result. What is measured to discover the test result is the number of antigen and antibodies present in the liquid being tested. This measurement tells the biochemist how much of the substance being tested for is located within the sample and how concentrated it is. So what is the immunoassay test good for? This test has been playing a very important role in the diagnosis of HIV and AIDS. The HIV test that anyone can go to the doctor to get is an immunoassay test that measures the concentration of the virus within the sample liquid, often blood or urine. This also helps to determine at what stage the HIV is present in the body. This test helps scientists for many other diseases as well. There are two different types of immunoassay tests. The first one is the competitive immunoassay test. This test allows the unknown sample to compete with the antigen so that the antigen binds with antibodies in the sample. The ratio of antigen to antibody is measured. This will give the concentration of the substance being tested for within the sample. The other type of immunoassay test is the noncompetitive immunoassay test. This is also referred to as a "sandwich assay" because the antigen in the sample is bound to an antibody site, then the antibody binds to the antigen. This test is measured with the amount of antibody in the sample. This method is proportional to the concentration of the antigen, and not the ratio of antigen to antibody. This test is used to test for a known substance. If the antigen and antibody do not bind, then the test is negative. This is a faster and easier method to use when testing for substances in the sample. Immunoassays are very important tests that perform a variety of functions in everyday medicine. While they are used primarily to test for things such as HIV in the body, the tests are also an important step in discovering the next new way to test for other diseases and conditions that science does not have a test for yet.

About the Author

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