

TEST: HIV-2 ANTIBODY

PRINCIPLE:

In 1986 a second HIV virus, HIV-2 was isolated from patients with AIDS in West Africa. HIV-2 infections have also been identified in Europeans who have lived in West Africa or have had sexual relations with individuals from that region or in homosexual men with sexual partners from endemic areas. However, today HIV-2 seems to be endemic in West Africa. However based on experience with HIV-1, it is likely that HIV-2 will spread to other parts of the world.

The HIV-2 virus is similar to the HIV-1 virus in morphology, cell tropism, interaction with CD4 cellular receptor, *in vitro* cytopathic effect on CD4 cells, overall genomic structure and its ability to cause AIDS. HIV-2 is transmitted by sexual contact, by exposure to blood or certain blood products or from an infected mother to her fetus or child.

A specimen found to be initially reactive should be retested in duplicate using a sample from the original source. Reactivity in either or both of these duplicate tests (repeatable reactive) is highly predictive of the presence of HIV-1 and /or HIV-2 antibodies in people at increased risk for HIV infection. However, because of possible non-specific reactions due to other causes, particularly when testing low prevalence populations (e.g. blood donors), it is appropriate to further test the patients specimen by HIV-1 and HIV-2 Western Blot or other confirmatory method to prove that HIV antibodies are indeed present.

The HIV-1/HIV-2 (rDNA) EIA method dilutes the specimen in a specimen diluent that is incubated with a polystyrene bead coated with Recombinant HIV-1 env and gag and HIV-2 env proteins. If the specific antibody is present it reacts with the antigens on the coated bead. After removal of the unbound materials and washing of the bead, specific immunoglobulins remaining bound to the solid phase are detected by incubating the bead-antigen complex with a solution containing HIV-1 gag and env together with HIV-2 env Recombinant proteins labeled with horseradish peroxidase (HRPO) also known as the conjugate. Unbound enzyme conjugate is then removed and the beads are washed. Next, o-Phenylenediamine (OPD) solution containing hydrogen peroxidase is then added to the bead and after incubation, a yellow-orange color develops in proportion to the amount of HIV-1 and /or HIV-2 antibodies which is bound to the bead. The enzyme reaction is stopped with 1 N Sulfuric Acid and the intensity of the color development is read using the spectrophotometer.

SPECIMEN REQUIREMENTS:

2 ml serum collected in a red top tube with no additive or in a serum separator tube (gel barrier). Serum should be separated from the clot as soon as possible to avoid hemolysis. Store at 2-10°C up to one week. If testing is further delayed, sera should be frozen at 20°C or lower. Avoid repeat freeze-thaw cycles.

METHOD: Enzyme Immunoassay (EIA)

REFERENCES:

1. Center for Disease Control: AIDS due to HIV-2 infection, New Jersey MMWR 37:33-35, 1988.
2. Ayanian, J.Z., Magurie, J.H., Marlink, R.G. et al: HIV-2 infection in the United States. New Engl J Med 320:1422-1423, 1989.
3. Cabian, K., Shriver, K., Goldstein, L., et al: Human immunodeficiency virus type 2: a review J Clinical Immunoassy 11:107-114, 1988.

Normal Range: Non-reactive

Turnaround Time: One Week