The diagnosis of HIV infection is mainly based on the detection of antibodies or the combined detection of antibodies and antigens. For screening, the most used assays are ELISA tests.

All tests performed in Belgium are third or fourth generation tests using recombinant proteins or synthetic peptides. The use of fourth generation tests is highly recommended. They combine the detection of antibodies with the detection of p24 antigens of HIV-1 and as such allow an early diagnosis of seroconversion (about 2 to 5 days earlier than antibody-based tests).

All standard screening tests detect antibodies against HIV-1 of groups M and O, as well as HIV-2. Their sensitivity and specificity are excellent (99,2 – 99,8%).

However, due to the low prevalence of HIV infection, the positive predictive value of these tests is only 50%. Each positive or equivocal result has to be confirmed by a Western blot or immunoblot, in order to exclude falsely reactive results.

In the Western blot, HIV-1 or HIV-2 proteins are denatured, separated by electrophoresis in function of their molecular weight and transferred on a nitrocellulose strip. The presence of antibodies against one or several of these proteins is revealed by an immuno-enzymatic reaction producing a colored reaction. The result is interpreted with well-defined criteria. Incomplete profiles can be observed during seroconversion. In these cases it is necessary to follow the evolution of antibodies on subsequent samples.

The immunoblot tests are based on the same principle but use recombinant proteins or synthetic peptides which are spotted on nylon or nitrocellulose strips.

The detection of the p24 antigen is particularly useful in primary infection, when antibodies are still undetectable.

The screening tests for HIV infection are performed in all clinical biology laboratories. When the result is reactive or equivocal, and if the patient is not already known to be infected by HIV, the sample has to be sent for confirmation to one of the seven AIDS reference laboratories (ARL).

The ARL performs ELISA tests, Western blot or immunoblot tests and/or the detection of p24 antigen following an algorithm based on agreed on by all ARL, to confirm or exclude an HIV infection and to specify if it is an infection with HIV-1 or HIV-2.

When an HIV infection is confirmed for a patient, this result has to be re-confirmed on a second sample to exclude potential sample errors, labelling errors and contaminations.

In case of suspect contact, it is advisable to perform a serological test 4 to 6 weeks after the contact and then to repeat it at 3 months after the suspected contact or after cessation of treatment. A control after 6 months can be considered for reasons of liability. If a primary infection syndrome is suspected on basis of clinical signs (flu-like syndrome, ...), it is recommended to perform the test immediately, without taking these intervals into account. It is important to communicate this clinical information to the ARL.
Contact

Université Libre de Bruxelles, Hôpital Erasme (Cliniques Universitaires de Bruxelles)

Marie-Luce Delforge
Tel.: +32 (0)2 555 57 83

Laboratoire de Référence SIDA
Université Libre de Bruxelles, Hôpital Universitaire Erasme
Laboratoire de Virologie
Route de Lennik, 808
1070 Bruxelles

Click [here](#) to visit the ARL website.

Instituut Tropische Geneeskunde

Katrien Fransen
Tel.: +32 (0)3 247 63 32
e-mail: kfransen@itg.be

AIDS-Referentielaboratorium
Instituut voor Tropische Geneeskunde
Departement klinische wetenschappen
Nationalestraat 155
2000 Antwerpen

Click [here](#) to visit the ARL website.

Université de Liège, Centre Hospitalier Universitaire de Liège

Marie-Pierre Hayette (Director)
Tel.: +32 (0)4 366 24 54

Dolorès Vaira
e-mail: dvaira@chu.ulg.ac.be
Tel.: +32 (0)4 366 24 48

Christiane Gérard
Tel.: +32 (0)4 366 75 39

Laboratoire de Référence SIDA
Université de Liège
Domaine Universitaire du Sart-Tilman
Laboratoire de Microbiologie Clinique
Niveau 2 - Bât. B23
4000 Sart-Tilman via Liège 1

Tel. ARL: +32 (0)4 366 75 39

Denis Pierard
e-mail: labomicro@uzbrussel.be

AIDS Referentie Laboratorium
VUB, UZ-Brussel
Laboratorium voor Klinische Biologie
Laarbeeklaan 101, 1090 Brussel

Tel.: +32 (0)2 477 50 01
Click [here](#) to visit the ARL website.
Vrije Universiteit Brussel (Section: Universitair Medisch Centrum Sint-Pieter)
Sigi Van den Wijngaert
Tel.: +32 (0)2 535 45 31
AIDS Referentie Laboratorium
Universitair Medisch Centrum Sint-Pieter
Hoogstraat 185
1000 Brussel
Tel.: +32 (0)2 535 45 30

Universiteit Gent, Universitair Ziekenhuis Gent
Chris Verhofstede
Tel: +32 (0)9 332 51 61
e-mail: chris.verhofstede@ugent.be
AIDS Referentie Laboratorium
Universiteit Gent
Laboratorium voor Bacteriologie en Virologie
Blok A, 3de verdieping
De Pintelaan 185
9000 Gent
Tel.: +32 (0)9 332 51 61
Fax: +32 (0)9 332 38 41
Click here to visit the ARL website.

Université Catholique de Louvain, Cliniques Universitaires Saint-Luc
Patrick Goubau
Tel.: +32(0)2 764 54 92
e-mail: laboratoire-sida@uclouvain.be
Université Catholique de Louvain, Cliniques Universitaires Saint-Luc
Laboratoire de Référence SIDA
Unité de Microbiologie
Avenue Hippocrate 5492
1200 Bruxelles
Tel.: +32 (0)2 764 54 92
Fax: +32 (0)2 764 54 22
Click here to visit the ARL website.

Katholieke Universiteit Leuven, Universitaire Ziekenhuizen Leuven
Marc Van Ranst
Katholieke Universiteit Leuven, Universitaire Ziekenhuizen Leuven
Zone Medische Diagnostiek, Activiteitencentrum AIDS Referentie Laboratorium
Gasthuisberg - CDG8
Herestraat 49
3000 Leuven
Tel.: +32 (0)16 34 79 08
Fax: +32 (0)16 34 79 00
Click here to visit the ARL website.
Scientific Institute of Public Health (IPH, WIV-ISP)

André Sasse (scientific secretariat)
Tel.: +32 (0)2 642 50 39
e-mail: Andre.Sasse@wiv-isp.be

Institut Scientifique de Santé Publique - Wetenschappelijk Instituut Volksgezondheid
Public Health and Surveillance - Infectious Diseases Unit
Rue Juliette Wytsmanstraat 14
1050 Brussels

Click here to visit the IPH main website. The IPH’s Infectious disease web pages can be found here.

Last update

18/11/2014