BIO-RAD

ACCESS®
Immunoassay System

HCV Ab V3

REF B33458

Σ 2 x 50

For the qualitative detection of anti-HCV antibodies in human serum and plasma using the Access Immunoassay Systems.

ACCESS®
Immunoassay System

HCV Ab V3 Calibrators

REF B33459

The Access HCV Ab V3 Calibrators are intended to calibrate the Access HCV Ab V3 assay using the Access Immunoassay Systems.

ACCESS®
Immunoassay System

HCV Ab V3 QC

REF B33460

For monitoring the system performance of the Access HCV Ab V3 assay.

IVD

CE 0459

B57283A - [EN] - 2016/02

Table of Contents

ACCESS®

Immunoassay System

HCV Ab V3

REF **B33458**

2 x 50

For the qualitative detection of anti-HCV antibodies in human serum and plasma using the Access Immunoassay Systems.

IVD

CE 0459

B57283A - [EN] - 2016/02

1 Intended Use

The Access HCV Ab V3 is a paramagnetic particle, chemiluminescent immunoassay for the qualitative detection of antibodies to the hepatitis C virus in human serum or plasma (Lithium heparin, K2-EDTA, K3-EDTA, citrate, CPDA-1 or ACD), using the Access Immunoassay Systems. The Access HCV Ab V3 is intended to be used as an aid in the diagnosis of HCV infection and as a screening test for blood and plasma donors. The assay is not intended for the testing or screening of pooled specimens.

2 Summary and Explanation of the Test

The hepatitis C virus (HCV) is considered to be the major cause of post transfusional non-A - non-B hepatitis (NANBH), as well as that transmitted by non-transfusional parenteral routes (hemodialysis patients, transplant patients)[1,2,3,4,5,6,7]. Fifty to sixty percent of patients infected with hepatitis C are likely to develop chronic hepatitis and risk the development of cirrhosis or hepatocellular carcinoma[8,9].
The practice of compulsory screening of every blood donation (for anti-HCV antibodies) has significantly decreased the risk of transmission by infected blood[10,11].
The Access HCV Ab V3 is intended for the detection of anti-HCV antibodies in human serum or plasma, and therefore contributes to the prevention of parenteral contamination. It can also be used for the diagnosis of HCV infection. In both cases, results should be interpreted in conjunction with clinical data and other serological markers.

3 Principles of The Procedure

The Access HCV Ab V3 is an indirect immunoenzymatic assay. The sample (serum, plasma or control) is added to a reaction vessel with paramagnetic particles coated with a peptide mimicking immunodominant epitope of the capsid region and recombinant proteins (NS3 and NS4). During incubation both IgG and IgM present in the sample are captured by the solid phase. After incubation, the solid phase is collected by a magnetic field and unbound materials are removed by a series of washes. During the second step, conjugate (anti-human IgG goat antibody, labeled with alkaline phosphatase) is added to the reaction vessel. Following incubation, a further series of washes eliminates the excess conjugate. A chemiluminescent substrate, Lumi-Phos 530, is added the light generated by the enzymatic reaction is measured with a luminometer. The emitted light intensity is proportional to the amount of enzyme conjugate present and therefore to the titer of anti-HCV antibodies present in the test sample. By comparing the cut-off value established by the assay calibration to the signal present in the sample, the presence or absence of anti-HCV antibodies is determined.

4 Product Information

4.1 Description

Access HCV Ab V3 Reagent Packs

Identification on label	Description	Presentation/ preparation B33458
R1a Paramagnetic particles	**Paramagnetic particles:** coated with recombinant proteins (NS3/NS4) and peptide (capsid) suspended in TRIS buffer, with sodium azide (< 0.1%)	2 x 50 tests Ready to use
R1b Sample additive	**Sample additive:** with sodium azide (0.1%)	
R1c Conjugate additive	**Conjugate additive:** with surfactant, sodium azide (0.1%)	
R1d Conjugate	**Conjugate:** Goat anti-human IgG alkaline phosphatase conjugate in TRIS buffer, with surfactant, sodium azide (< 0.1%) and ProClin 300 (< 0.1%)	

4.2 Storage and Handling Conditions

- Store upright and refrigerate at 2 to 10°C.
- Refrigerate at 2 to 10°C for a minimum of two hours before use on the instrument.
- Stable until the expiration date stated on the label when stored at 2 to 10°C (reagent pack unopened).
- Mix the new, unpunctured packs until the particles are in solution and no longer adhere to the seal or sides of the well. Do not invert or mix packs that have been punctured.
- **Before its first use,** do not store on board the reagent pack more than 56 days.
- **After initial use,** stable at 2 to 10°C for 28 days on board.
- Signs of possible deterioration are a broken elastomeric layer on the pack or quality control values out of range.
- If the reagent pack is damaged (e.g. broken elastomer), discard the pack.

5 Warnings and Precautions

- For *in vitro* diagnostic use. For healthcare professional use only.

5.1 Health and Safety Precautions

- This test kit should only be handled by qualified personnel trained in laboratory procedures and familiar with the potential hazards. Wear appropriate protective clothing, gloves and eye/face protection and handle appropriately in accordance with Good Laboratory Practices.
- Biological spills: human source material spills should be treated as potentially infectious. Spills not containing acid should be immediately decontaminated, including the spill area, materials and any contaminated surfaces or equipment, and with appropriate chemical disinfectant that is effective on the potential biohazards relative to the samples in question (commonly a 1:10 dilution of household bleach, 70-80% ethanol or isopropanol, an iodophor such as 0.5% Wescodyne™ Plus, etc.) and wiped dry.
  Spills containing acid should be appropriately absorbed (wiped up) or neutralized, the area flushed with water and wiped dry; materials used to absorb the spill may require bio-hazardous waste disposal. The area should subsequently be decontaminated with one of the chemical disinfectants.
- All specimens and material used to perform the test must be disposed of as though they contain an infectious agent. Laboratory, chemical or bio-hazardous waste must be handled and discarded in accordance with all local, regional and national regulations.
- For hazard and precaution recommendations related to any chemical components in this test kit, please refer to the pictogram(s) featured on the labels and the information supplied in section 5.2.
  The Safety Data Sheet (SDS) is available at www.bio-rad.com.

5.2 Precautions Related to the Procedure

Warning:

H317: May cause an allergic skin reaction.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P333+P313: If skin irritation or rash occurs: seek medical advice/attention.
P302+P352: If on skin: wash with plenty of soap and water.
P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

- This product contains human or animal components. Handle with care.

6 Specimens

1. Serum, including serum separator tubes, or plasma (Lithium heparin, K2-EDTA, K3-EDTA, citrate, CPDA-1 or ACD), including plasma separator tubes, are the recommended samples.
2. Observe the following recommendations for handling, processing and storing blood samples[12].
   - Collect all blood samples observing routine precautions for venipuncture.
   - Allow serum samples to clot completely before centrifugation.
   - Keep tubes tightly stoppered at all times.
   - Store samples at room temperature (15 to 23°C) for no longer than 4 days.
   - If the assay is not completed within 4 days, refrigerate the samples at 2-8°C but for no longer than 7 days after collection.
   - If the assay is not completed within 7 days, or for shipment of samples, freeze at -20°C or below.
3. Use the following guidelines when preparing specimens:
   - Ensure that all residual fibrin and cellular matter has been removed prior to analysis.
   - Follow the blood collection tube manufacturer's recommendations for centrifugation.
4. Each laboratory should determine the acceptability of its own blood collection tubes and serum separation products. Variations in these products may exist between manufacturers and, occasionally, from lot to lot.
5. Thaw samples no more than 5 times. After thawing, the sample must be thoroughly mixed, centrifuged again either at 3,000 g for 10 minutes or at 2,000g for 15 minutes and transferred into a cup in order to remove any suspended fibrin particles or aggregates liable to yield false-positive results.
6. Samples that have been heated at 56°C for 30 min may be used.

7 Procedure

7.1 Material Required

7.1.1 Materials Provided

R1 Access HCV Ab V3 Reagent Packs

7.1.2 Materials Required but Not Provided

1. Access HCV Ab V3 Calibrators
   Provided as one anti-HCV Ab negative serum and one anti-HCV Ab positive serum.
   Cat. No. B33459
2. Quality control materials:
   • Access HCV Ab V3 QC
   Cat. No. B33460
   • Other commercial control sera
3. Access Substrate
   Cat. No. 81906
4. Access 2:
   Wash buffer: Access Wash Buffer II, Cat. No. A16792
5. UniCel® DxI®:
   Wash buffer: UniCel DxI Wash Buffer II, Cat. No. 16793

6. Systems:
   Access 2, UniCel DxI (UniCel DxI 600, UniCel DxI 800, UniCel DxC 880i, UniCel DxC 860i, UniCel DxC 680i, UniCel DxC 660i).

7.2 Assay Procedure

1. Refer to the appropriate system manuals and/or help system for a detailed description of installation, start-up, principles of operation, system performance characteristics, operating instructions, calibration procedures, operational limitations and precautions, hazards, maintenance, and troubleshooting.
2. Mix contents of new (unpunctured) reagent packs before loading on the instrument. Do not invert or mix open (punctured) packs.
3. Ten (10) µL of sample is used for each determination (in addition to dead volume).
4. Time to first result is approximately 57 minutes
5. The system default unit of measurement for sample results is the Signal/Cut-off (S/CO) ratio.

7.3 Calibration

An active calibration curve is required for all tests. For the Access HCV Ab V3, the calibration data to determine the cut-off are valid for 56 days. Consequently, for this assay, the calibration is required every 56 days using C0 and C1 from the Access HCV Ab V3 Calibrators kit.
Refer to the appropriate system manuals and/or help system for information on calibration theory, configuring calibrators, entering calibrator test requests and reviewing calibration data.

7.4 Quality Control

Quality control materials simulate the characteristics of patient samples and are essential for monitoring the system performance of immunochemical assays. Quality control is recommended at least, every 24 hours[13] and on system start-up prior to running patient samples. Include Access HCV Ab V3 QC or other commercially available quality control materials that cover at least two levels of analyte. More frequent use of these controls or the use of additional controls is left to the discretion of the user based on good laboratory practice or laboratory accreditation requirements and applicable laws. Follow the manufacturer's instructions for reconstitution and storage. Each laboratory should establish mean values and acceptable ranges to ensure proper performance. Quality control results that do not fall within acceptable ranges may indicate invalid test results. Examine all test results generated since the last acceptable quality control test point for this analyte.
The Access HCV Ab V3 has been evaluated at a room temperature range of 18-28°C. For optimal results, assay calibration and patient sample testing should be conducted under similar temperature conditions.
Refer to the appropriate system manuals and/or help system for information about reviewing control sera results.
All manufactured and commercialized reagents are subject to a comprehensive quality system starting from the reception of raw materials right up to the ultimate commercialization of the product.
Each lot is subjected to a quality control and is only released onto the market if it conforms to the acceptance criteria.

7.5 Calculation / interpretation of the Results

Patient test results are calculated automatically by the system software using the cut-off value determined by active calibration. Results (Signal/Cut-off= S/CO) are reported to be "reactive" or "non-reactive" as a function of their relationship with the "cut-off" (signal greater than or equal to or less than the cut-off value). Patient test results can be reviewed using the Sample Results screen. Refer to the appropriate system manuals and/or help system for complete instructions on reviewing results.

First result analysis:

- Any sample with a ratio (S/CO) lower than 1.0 is considered to be non-reactive with the Access HCV Ab V3.
- Samples with a ratio (S/CO) greater than or equal to 1.0, are initially considered to be reactive with the Access HCV Ab V3 and should be retested in duplicate before final interpretation.

Second result analysis:
All samples that were initially reactive should be retested in duplicate using the Access HCV Ab V3:

- If the results of the duplicates are < 1.0 S/CO, the sample must be considered non-reactive (negative) for HCV Ab V3.

- If one of the 2 results is ≥ 1.0 S/CO, the initial result is repeatable and the sample is declared as "reactive" for the Access HCV Ab V3.

However, in accordance with local regulations, it is necessary to analyze any "reactive" sample with supplementary tests to clearly establish the positive result.

Table 1: Access HCV Ab V3 result interpretation

Result Ratio: Signal/Cut-Off			Interpretation	Supplementary tests
First Result Analysis	S/CO < 1.0	Non-reactive	HCV Ab not detected	NA
	S/CO ≥ 1.0	Reactive	"Initial Reactive"	Retest in duplicate
Second Result Analysis	Retest in duplicate: if the 2 results are < 1.0	Non-reactive	HCV Ab not detected	NA
	Retest in duplicate: if one of the 2 results is ≥ 1.0	Reactive	HCV Ab detected "Repeat Reactive"	Supplementary test

8 Test Limitations

1. The Access HCV Ab V3 is strictly limited to the detection of anti-HCV antibodies in human serum including serum separator tubes or plasma (Lithium Heparin, K2-EDTA, K3-EDTA, Citrate, CPDA-1 or ACD) including plasma separator tubes. The performance characteristics using other sample types have not been established.
2. The Access HCV Ab V3 results should be interpreted in light of the total clinical presentation of the patient, including: clinical history, data from additional tests and other appropriate information.
3. The magnitude of the measured result, above the cut-off, is not indicative of the total amount of antibody present.
4. Given the diversity of the immunological reactions of patients infected by the Hepatitis C Virus (especially during seroconversions), some differences in detection can be observed between tests depending on the kind of antigenic proteins used. A negative result with a screening test does not exclude the possibility of exposure to or infection by Hepatitis C Virus.
5. For an infection to be declared, a reactive result obtained with the Access HCV Ab V3 must be confirmed by an appropriate method.
6. All ELISA techniques are liable to produce false-positive reactions. It is recommended to verify the specificity of the reaction for any sample found to be a repeatable positive using a suitable method to prove the presence of anti-HCV antibodies. Note that abnormal gamma immunoglobulinemia (≥ 24 g/L or twice normality) may cause false-positive reactions.
7. Immunocompromised individuals and conditions such as severe infection and immunosuppressive drug therapy can result in the suppression of antibody levels below the detection threshold of the assay. Results obtained with such samples should be interpreted with caution.

9 Performance Characteristics

9.1 Precision Measurement

A panel of 6 specimens was used for determining the reproducibility and precision: low negative, high negative, low positive, medium positive, negative QC and positive QC.

9.1.1 Repeatability

Precision panel (N = 6) was tested in replicates of 30 on the same day on one lot of Access HCV Ab V3. The mean ratio value, standard deviation (SD) and percent coefficient of variation (% CV) were calculated and presented in Table 2. All ratios CVs were lower than 10%.

Table 2: Access HCV Ab V3 Repeatability results

Panel Member	N	Mean Ratio	SD	CV%
Low Negative	30	0.08	0.0079	9.3
High Negative	30	0.86	0.0378	4.4
Low Positive	30	1.86	0.0816	4.4
Medium Positive	30	4.63	0.1786	3.9

9.1.2 Intermediate Precision

Run and Day precision

Precision panel (N = 6) was tested on one lot of Access HCV Ab V3, in replicates of 2 with 2 runs per day (morning and afternoon) for 20 days.

The mean ratio value, within-run, between-run, between-day and total precision standard deviation (SD) and percent coefficient of variation (% CV) were calculated and presented in Table 3. All ratio CVs were lower than 10%.

Table 3: Access HCV Ab V3 Total Precision results

Panel Member	N	Mean ratio	Within run		Between run		Between day		Total precision	
			SD	CV %	SD	CV %	SD	CV %	SD	CV %
QC1	80	0.11	0.004	4.0	0.003	2.8	0.003	2.5	0.006	5.5
QC2	80	2.16	0.080	3.7	0.078	3.6	0.080	3.7	0.138	6.4
Low Negative	80	0.09	0.006	7.3	0.002	2.4	0.004	4.5	0.008	8.9
High Negative	80	0.98	0.040	4.1	0.040	4.1	0.040	4.1	0.069	7.1
Low Positive	80	1.84	0.072	4.0	0.059	3.3	0.043	2.4	0.103	5.6
Medium Positive	80	4.88	0.176	3.6	0.179	3.7	0.082	1.7	0.265	5.4

Between-Lot and Between-Instrument Precision

Precision panel (N = 6) was tested on 3 lots of Access HCV Ab V3 on three different instruments, in replicates of 3 with 1 run per day for 5 days.

The between-lot and between-instrument standard deviation (SD) and percent coefficient of variation (% CV) were calculated. Between-lot and between-instrument CVs were lower than 10% for HCV positive and high negative panel members.

The Access HCV Ab V3 assay exhibits a total precision of ≤ 10% with reactive and high negative panel members.

9.1.3 Inter-Site Precision

Precision panel (N = 6) was tested at 3 sites, in replicates of 3 with 1 run per day for 5 days.

The between-day and total precision were calculated as standard deviation (SD) and percent coefficient of variation (% CV). CVs were lower than 10% for HCV positive and high negative panel members.

9.2 Diagnostic Performance

9.2.1 Diagnostic Specificity

Specificity on non-selected blood donors

A total of 5147 specimens (2549 serum (SSTII), 1281 K2-EDTA plasma and 1317 lithium heparin plasma) drawn from non-selected donors including known and first time donors were tested with the Access HCV Ab V3 in blood banks at two geographically distinct locations. 5140 specimens tested negative at first, and 7 initial reactive specimens were found to be repeatedly reactive (ratio ≥ 1.0). Therefore, specificity of the Access HCV Ab V3 was 99.86% (5140/5147) at initial testing and after retesting with a confidence interval at 95% of [99.72–99.95].

Table 4: Access HCV Ab V3 Specificity on blood donors

Specificity on blood donors	Total number specimens	Non-reactive	Reactive	Specificity (%) IR and RR
Serum (SSTII)	2549	2545	4	99.84
Plasma (K2-EDTA)	1281	1278	3	99.77
Plasma (Lithium heparin)	1317	1317	0	100.0
TOTAL	5147	5140	7	**99.86** 95 CI (99.72-99.95)

Specificity on hospitalized patients
A total of 510 serum specimens from hospitalized patients were tested with the Access HCV Ab V3 and with a CE marked anti-HCV screening assay during a prospective study conducted in a university hospital.
On Access HCV Ab V3, 508 specimens tested negative at initial testing and two initial reactive specimens were found to be repeatedly reactive (ratio ≥ 1.0).
Specificity of the Access HCV Ab V3 was 99.61% (508/510) at initial testing and after retesting with a confidence interval at 95% of [98.59–99.95].

9.2.2 Diagnostic Sensitivity

Sensitivity with positive samples from HCV infected patients
A total of 503 specimens from patients confirmed as HCV infected and serologically positive were tested at 2 sites (Table 5).
30 prospective fresh serum samples, 448 retrospective genotyped samples from hospital collection including 25 various HCV genotypes (Table 6), and 25 fresh (< 24H) samples from patients being monitored for HCV infection were tested with the Access HCV Ab V3.
Access HCV Ab V3 sensitivity regarding these HCV positive specimens was 100% (503/503) with a 95% CI of [99.3 - 100].

Sensitivity with freshly drawn (< 24H) positive samples from HCV infected patients (Table 5).
25 freshly drawn (< 24H) HCV positive specimens from monitored patients were tested with the Access HCV Ab V3. Sensitivity was 100% (25/25).

Table 5: Access HCV Ab V3 Sensitivity on HCV infected patients

Sample type	Total number specimens	Non-reactive	Reactive	Sensitivity (%)
Fresh serum	30	0	30	100
Genotyped plasma	448	0	448	100
Fresh plasma for viral load	25	0	25	100
TOTAL	503	0	503	**100** 95 CI (99.3-100.0)

Table 6: Access HCV Ab V3 Sensitivity with genotyped HCV positive specimens

Genotypes	1	2	3	4	5	6	TOTAL
	1-1a-1b	2-2a-2b-2c-2i-2k-2l-2m	3-3a	4a-4c-4d-4f-4k-4o-4r	5a	6-6a-6e-6f	
N	261	41	92	42	7	5	448

Sensitivity with HCV seroconversion panels
Sensitivity of Access HCV Ab V3 was determined in comparison to a CE marked HCV screening EIA assay, using with 359 samples from 46 commercially available seroconversion panels.
The detection of the first positive bleed point was on average earlier by 26% time-points per panel (12/46) with Access HCV Ab V3 when compared to the CE marked HCV screening assay.
The Access HCV Ab V3 complies with the state of art in terms of sensitivity estimated with 46 HCV seroconversion panels, corresponding to a total of 359 seroconversion samples.

9.3 Analytical Specificity

9.3.1. Cross reactivity Study

208 potentially cross-reacting samples representing 28 different diseases/ states testing positive for the following markers were tested with the Access HCV Ab V3.

HTLV I/ II (6); HIV (22); Hepatitis B (5 HBs antigen and 5 anti-HBs); Hepatitis A (5 HAV); Syphilis (5); Cytomegalovirus (5 CMV); Epstein-Barr IgG and IgM (10 EBV); Herpes Simplex IgG and IgM (10 HSV); Toxoplasmosis IgG and IgM (10); Rubella IgG and IgM (10); Measles IgG and IgM (10); Mumps IgG and IgM (10); Varicella Zoster (5 VZV); Influenza vaccine (5); Malaria (5); Hemodialysis (5); Transplanted (5); Renal failure (5); Rheumatoid factor (5); HAMA (5); Autoimmune (5 ANA and 5 Lupus SLE); Myeloma IgG and IgM (10); Candida albicans (5); anti-E. coli Ab (4); Pregnancy (5 HCG); Multiparous women (5); Cirrhotics (16).

Over the total 208 difficult samples, all specimens tested negative giving an overall specificity of 100% (208/208) with a confidence interval at 95% of [98.2 - 100.0].

9.3.2. Interference Study

Access HCV Ab V3 gave accurate results when samples were tested with abnormal concentrations of five endogenous blood components (up to 0.2 g/L unconjugated and up to 0.3 g/L conjugated bilirubin, lipemic samples up to 33 g/L triglycerides, up to 120 g/L total proteins, hemolyzed samples up to 2 g/L hemoglobin) or therapeutic concentrations of nine exogenous drug components (cortisol, acetylsalicylic, ibuprofen, paracetamol, streptomycin, acebutolol, ofloxacin, azathioprine, spironolactone).

However, HCV negative and positive samples containing a concentration of human immunoglobulins higher or equal to 24 g/L (≈ twice 13 g/L normal concentration), gave a significant positive effect on the HCV ratio. This leads to a risk of false positive results with negative specimens, but poses no risk to detection of HCV infection with the Access HCV Ab V3.

9.3.3. Hook Effect

A hook effect was studied by testing two high-titer specimens. Negative human serum was employed as diluent (1:100 to 1:3200) for all testing. All results demonstrated a downward trend of ratio values with increased dilution and that high dose hook effect interference was not present with Access HCV Ab V3.

ACCESS®

Immunoassay System

HCV Ab V3 Calibrators

REF **B33459**

For the calibration of the Access Immunoassay Systems when used for the qualitative detection of antibodies to HCV in human serum and plasma.

IVD

CE 0459

B57283A - [EN] - 2016/02

1 Intended Use

The Access HCV Ab V3 Calibrators kit is for the calibration of the Access Immunoassay Systems when used for the qualitative detection of antibodies to HCV in human serum and plasma.

2 Summary and Explanation of the Test

The Access HCV Ab V3 Calibrators are used to establish calibration (determine the cut-off value) for the Access HCV Ab V3. By comparing the light intensity generated by a sample to the cut-off value, it is possible to determine the presence or absence of anti-HCV antibodies in the sample.

3 Product Information

3.1 Description

Access HCV Ab V3 Calibrators

Identification on label	Description	Presentation/ preparation B33459
C0 **Negative Calibrator**	**Negative Calibrator:** negative (non-reactive) human serum for anti-HCV antibodies, with < 0.1 % sodium azide.	1 x 1 mL Ready to use
C1 **Positive Calibrator**	**Positive Calibrator:** positive (reactive) human serum for anti-HCV antibodies, inactivated, with < 0.1% sodium azide.	1 x 1 mL Ready to use
Calibration card	**1**	

3.2 Storage and Handling Conditions

- Store upright and refrigerate at 2 to 10°C.
- Mix contents by gently inverting before use. Avoid bubble formation.
- Stable until the expiration date stated on the label when stored at 2 to 10°C.
- Vial is stable at 2 to10°C for 120 days after initial use
- Out-of-range control values are a possible sign of deterioration.

4 Warnings and Precautions

- For *in vitro* diagnostic use. For healthcare professional use only.
- This product contains human or animal components. Handle with care.
- This test kit should only be handled by qualified personnel trained in laboratory procedures and familiar with their potential hazards. Wear appropriate protective clothing, gloves and eye/face protection and handle appropriately in accordance with Good Laboratory Practices.
- Human source material used in the preparation of the reagent has been tested and found non-reactive for hepatitis B surface antigen (HBs Ag), antibodies to human immunodeficiency virus (HIV-1 and HIV-2) and antibodies to hepatitis C virus (HCV), excluding the positive calibrator C1 which is positive for anti-HCV antibodies.
- This test kit contains human blood components. No known test method can offer complete assurance that infectious agents are absent. Consequently, all human derivatives, reagents and human specimens should be handled as if capable of transmitting infectious disease, following recommended Universal Precautions for bloodborne pathogens as defined by OSHA, the guidelines from the current CDC/NHI Biosafety in Microbiological and Biomedical Laboratories and/or local, regional or national regulations.
- Biological spills: human source material spills should be treated as potentially infectious.
  Spills not containing acid should be immediately decontaminated, including the spill area, materials and any contaminated surfaces or equipment, and with appropriate chemical disinfectant that is effective on the potential biohazards of the samples in question (commonly a 1:10 dilution of household bleach, 70-80% ethanol or isopropanol, an iodophor such as 0.5 % Wescodyne™ Plus, etc.) and wiped dry.
  Spills containing acid should be appropriately absorbed (wiped up) or neutralized, the area flushed with water and wiped dry; materials used to absorb the spill may require bio-hazardous waste disposal. The area should subsequently be decontaminated with one of the chemical disinfectants.

- All specimens and material used to perform the test must be disposed of as though they contain an infectious agent. Laboratory, chemical or bio-hazardous waste must be handled and discarded in accordance with all local, regional and national regulations.
  The Safety Data Sheet (SDS) is available at www.bio-rad.com.

5 Procedure

- Refer to the appropriate system manuals and/or help system for information on calibration theory, configuring calibrators, calibrator test requests and reviewing calibration data.
- The Access HCV Ab V3 Calibrators are provided as negative calibrator C0 and positive calibrator C1. The Access HCV Ab V3 requires a calibration curve (cut-off value determination) every 56 days in order to have an active "calibration" for only one lot of reagents well identified by its bar code.
- At the end of the 56 days or if another lot of reagents is loaded on the system, the curve is automatically invalidated.
- Each calibration requires at least 20 µL of the C0 calibrator (determination in duplicate) and 30 µL of the C1 calibrator (determination in triplicate) in addition to the sample container and system dead volume.
- One drop is equal to approximately 40 µL.

6 Test Limitation

If there is evidence of microbial contamination or excessive turbidity in a reagent, discard the vial.

ACCESS®
Immunoassay System

HCV Ab V3 QC

REF **B33460**

For monitoring the system performance of the HCV Ab V3.

IVD CE 0459

B57283A - [EN] - 2016/02

1 Intended Use

The Access HCV Ab V3 QC is intended for monitoring the system performance of the Access HCV Ab V3.

2 Summary and Explanation of the Test

Quality control materials simulate the characteristics of patient samples and are essential for monitoring the system performance of the Access HCV Ab V3. In addition, they are an integral part of good laboratory practice[13,14,16]. When performing assays with Access reagents for anti-HCV antibodies, include quality control materials to validate the integrity of the assays. The assayed values should fall within the acceptable range if the test system is working properly.

3 Product Information

3.1 Description

Access HCV Ab V3 QC

Identification on label	Description	Presentation/ preparation B33460
QC1 Negative QC	**Negative QC:** Human serum with < 0.1% sodium azide. Negative (non-reactive) for anti-HCV antibodies.	2 x 3.5 mL Ready to use
QC2 Positive QC	**Positive QC:** Human serum with < 0.1% sodium azide. Positive (reactive) for anti-HCV antibodies, inactived.	2 x 3.5 mL Ready to use
QC card	**1**	

3.2 Storage and Handling Conditions

- Store upright and refrigerate at 2 to 10°C.
- Mix contents by gently inverting before use. Avoid bubble formation.
- QCs are stable until the expiration date stated on the vial labels when stored at 2 to 10°C.
- Vial is stable at 2 to 10°C for 120 days after initial use.
- Out-of-range quality control values are a possible sign of deterioration.
- Refer to the QC value card for mean values and standard deviations (SDs).

4 Warnings and Precautions

- For *in vitro* diagnostic use. For healthcare professional use only.
- This product contains human or animal components. Handle with care.
- This test kit should only be handled by qualified personnel trained in laboratory procedures and familiar with their potential hazards. Wear appropriate protective clothing, gloves and eye/face protection and handle appropriately in accordance with Good Laboratory Practices.
- Human source material used in the preparation of the reagent has been tested and found non-reactive for hepatitis B surface antigen (HBs Ag), antibodies to human immunodeficiency virus (HIV-1 and HIV-2) and antibodies to hepatitis C virus (HCV), excluding the positive quality control QC2 which is positive for anti-HCV antibodies.
- This test kit contains human blood components. No known test method can offer complete assurance that infectious agents are absent. Consequently, all human derivatives, reagents and human specimens should be handled as if capable of transmitting infectious disease, following recommended Universal Precautions for bloodborne pathogens as defined by OSHA, the guidelines from the current CDC/NHI Biosafety in Microbiological and Biomedical Laboratories and/or local, regional or national regulations.
- Biological spills: human source material spills should be treated as potentially infectious.
  Spills not containing acid should be immediately decontaminated, including the spill area, materials and any contaminated surfaces or equipment and with appropriate chemical disinfectant that is effective on the potential biohazards of the samples in question (commonly a 1:10 dilution of household bleach, 70-80 % ethanol or isopropanol, an iodophor such as 0.5 % Wescodyne™ Plus, etc.) and wiped dry.

Spills containing acid should be appropriately absorbed (wiped up) or neutralized, the area flushed with water and wiped dry; materials used to absorb the spill may require bio-hazardous waste disposal. The area should subsequently be decontaminated with one of the chemical disinfectants.

- All specimens and material used to perform the test must be disposed of as though they contain an infectious agent. Laboratory, chemical or bio-hazardous waste must be handled and discarded in accordance with all local, regional and national regulations.
  The Safety Data Sheet (SDS) is available at www.bio-rad.com.

5 Procedure

- The Access HCV Ab V3 QC should be treated in the same way as patient specimens and run in accordance with the instructions accompanying the instrument and/or method being used.
- To process the Access HCV Ab V3 QC, a minimum of 10 µL of sample is required for each of the 2 levels of quality controls (single determination) in addition to the sample container and system dead volume.
- One drop is equal to approximately 40 µL.
- Because samples can be processed at any time in a “random access” format rather than a “batch” format, quality control materials should be included in each 24-hour time period[13,14]. More frequent use of controls or the use of additional controls is left to the discretion of the user based on good laboratory practice or laboratory accreditation requirements and applicable laws.
- Refer to the appropriate system manuals and/or help system for information on quality control theory, on configuring controls, entering QC sample test requests and reviewing quality control data.

6 Test Limitations

1. The use of the Access HCV Ab V3 QC has not been established with assays other than the Access HCV Ab V3.
2. Quality control results that do not fall within acceptable ranges may indicate invalid test results. Examine all test results generated since obtaining the last acceptable quality control test point for this analyte.
3. If there is evidence of microbial contamination or excessive turbidity in a reagent, discard the vial.

7 Expected Values

The expected means (×) and SDs (σ) for the Access HCV Ab V3 QC are provided on the QC value card contained in the kit.
Each laboratory should establish its own acceptability criteria by selecting the QC rules to be applied to the control results. Individual control results should fall within the initial acceptance range. However, each laboratory should update the mean and SD once sufficient data has been collected[13,17].
Given that specific levels of reactivity may vary by assay manufacturer, by procedure, by lot number and by laboratory, each laboratory should determine the specific level of reactivity and establish its own range of acceptable values[13,15,16]. The acceptable range might include all values within ± 2 SD of the mean of 20 data points out of 20 determinations over a period of 30 days[17].

Bibliography References

1. Choo QL., Kuo G., Weiner AJ, et al. Isolation of a cDNA clone derived from a blood-borne non-A, non-B viral hepatitis genome Science, 1989, 244: 359-362.
2. Choo QL., Richman KH., Han JH., et al. Genetic organization and diversity of the hepatitis C virus Proc. Natl. Acad. Sci USA, 1991, 88: 2451-2455.
3. Kuo G., Choo QL., Alter HJ., et al. An assay for circulating antibodies to a major etiologic virus of human non-A non-B hepatitis. Science 1989, 244: 362-364.
4. Tibbs C.J. Methods of transmission of hepatitis C Journal of viral Hepatitis, 1995, 2: 113-119.
5. Purcell R. The Hepatitis C virus: overview Hepatology, 1997, 26, 3, suppl 1: 11-14.
6. Seeff L.B. Natural History of Hepatitis C Hepatology, 1997, 26, 3, suppl 1: 21-28.
7. Yoshikura H., Hijkata N., Nakajima N. and Shimizy Y.K. Replication of Hepatitis C virus Journal of viral Hepatitis,1996, 3: 3-10.
8. Hoofnaggle J.H., Hepatitis C virus: the clinical spectrum of disease Hepatology, 1997, 26, 3, suppl 1: 15-20.
9. Alter HJ., Purcell RH., Shih JW., et al. Detection of antibodies to hepatitis C virus in prospectively followed transfusion recipients with acute and chronic non-A non-B hepatitis N. Engl. J. Med., 1989, 321: 1994-1500.
10. Japanese Red Cross Non-A, Non-B Hepatitis Research Group. Effect of screening for hepatitis C virus antibody and hepatitis B virus core antibody on incidence of post-transfusion hepatitis. Lancet 1991, 338: 1040-1041.
11. Donahue JF., Munoz A., Ness PM., Et al. The declining risk of post-transfusion hepatitis C virus infection. N. Engl. J.Med. 1992, 327: 369-373.
12. Approved Guideline - Procedures for the Handling and Processing of Blood Specimens for common Laboratory Tests, GP44-A4. 2010. Clinical and Laboratory Standards Institute.
13. Cembrowski, G.S., Carey, R.N. 1989. Laboratory Quality Management: QC & QA, ASCP Press, 1989.
14. Levy, S., Jennings, E.R. 1950. The Use of Control Charts in the Clinical Laboratory, Am. J. Clin. Path., 20: 1059.
15. Westgard, J.O., Koch, D.D., Oryall, J.J., Quam, E.F., Feldbruegge, et al. 1990. Selection of Medically Useful QC Procedures for Individual Tests done in a Multitest Analytical System, Clin. Chem, 36: 230.
16. Garrett, P.E., 1994. Quality is quantitative: so how do we QC qualitative tests? Journal of Clinical Immunoassay, 17: 231
17. Approved Guideline - Statistical Quality Control for Quantitative Measurement Procedures: Principles and definitions, C24- A3. June 2006. Clinical and Laboratory Standard Institute.

BIO-RAD WARRANTS PRODUCT PERFORMANCE AS DESCRIBED ON THE LABELLING AND IN THE LITERATURE SUPPLIED. BIO-RAD DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY OTHER PURPOSE. IN NO EVENT SHALL BIO-RAD BE LIABLE FOR ANY CONSEQUENTIAL DAMAGE ARISING FROM THE AFORESAID EXPRESS WARRANTY.

Bio-Rad
3, Boulevard Raymond Poincaré
92430 Marnes-la-Coquette, France
Tel.: +33 (0) 1 47 95 60 00
Fax: +33 (0) 1 47 41 91 33
www.bio-rad.com

CE 0459

2016/02
B57283A
Version A