

# **Hướng dẫn sử dụng bản gốc**

Tài liệu được cung cấp bằng tiếng Anh

Tài liệu được xác nhận bằng chữ ký số

Tp Hà Nội ngày 16 tháng 04 năm 2022

REF C88047



2 × 50 Tests

**INTENDED USE**

The iFlash-Anti-HBe assay is a paramagnetic particle chemiluminescent immunoassay (CLIA) for the qualitative determination of Hepatitis B e Antibody in human serum and plasma using the iFlash Immunoassay Analyzer.

**SUMMARY AND EXPLANATION**

Hepatitis B e antigen (HBeAg) and its antibody (anti-HBe) are found in association with hepatitis B viral infection. HBeAg is first detectable in the early phase of hepatitis B viral infection, after the appearance of hepatitis B surface antigen (HBsAg). The titers of both antigens rise rapidly during the period of viral replication in acute infection. Seroconversion from HBeAg to anti-HBe during acute hepatitis B infection is usually indicative of resolution of infection and a reduced level of infectivity. A negative HBeAg result may indicate early acute infection before the peak of viral replication or early convalescence when HBeAg has declined below detectable levels. The presence of anti-HBe serves to distinguish between these two phases.

A positive test result for anti-HBe has several possible interpretations. In a patient with acute hepatitis B, a positive anti-HBe result indicates normal recovery, particularly if HBsAg and HBeAg are no longer detectable in the serum. In chronic HBV carriers, a positive anti-HBe result usually indicates virus is not active and a lowered probability that the patient is infectious. In patients with chronic liver diseases due to hepatitis B, the transition from a positive HBeAg test to a positive anti-HBe result usually indicates improvement and resolution of active disease.

However, infection with a mutant HBV strain, which has been recently observed in patients from Asia or the Mediterranean basin, produces an unusual pattern of serological results. This strain is characterized by a mutation in the pre-core region of the viral genome which prevents HBeAg secretion despite ongoing viral replication, high HBV-DNA levels and active liver disease. In this situation, a positive anti-HBe result may be obtained despite active HBV replication and progression of liver disease.

**ASSAY PRINCIPLE**

The iFlash-Anti-HBe assay is a competitive immunoassay.

- 1<sup>st</sup> incubation: Anti-HBe in the sample binds to the added HBeAg.
- 2<sup>nd</sup> incubation: The residual added HBeAg, anti-HBe coated paramagnetic microparticles and anti-HBe acridinium-ester-labeled conjugate react to form a sandwich complex.
- Wash: The unbound materials are washed away from the solid phase in a magnetic field.
- Trigger of signal: The Pre-Trigger and Trigger Solutions are added to the reaction mixture. The resulting chemiluminescent reaction is measured as relative light units (RLUs).
- An indirect relationship exists between the amount of Anti-HBe in the sample and the RLUs detected by the iFlash optical system.
- Results are determined by comparing the RLUs of each sample to the cutoff signal obtained from a previous calibration.

**REAGENTS**

Reagent kit, 100 tests, 2 packs, 50 tests/pack

R1	Anti-HBe-coated paramagnetic microparticles, 3.5 mL/pack, 0.05% ProClin 300.
R2	Acridinium-ester-labeled anti-HBe conjugate; 4.0 mL/pack; 0.05% ProClin 300.
R3	Neutralizing antigen (HBeAg) working solution, 4.0mL/pack; 0.05% ProClin 300.
R4	Sample diluent, 4.0 mL/pack; 0.05% ProClin 300.
CAL1	Calibrator 1, 1 bottle, 1.0 mL, Human plasma, protein stabilizers, 0.05% ProClin 300.
CAL2	Calibrator 2, 1 bottle, 1.0 mL, Anti-HBe in Human plasma with protein stabilizers, 0.05% ProClin 300.

**MATERIALS REQUIRED (BUT NOT PROVIDED)**

REF C89999/C89959/C89949, iFlash Pre-Trigger Solution: hydrogen peroxide solution.

REF C89998/ C89958/ C89948, iFlash Trigger Solution: sodium hydroxide solution.

REF C89997, iFlash Wash Buffer: phosphate buffered saline solution with 0.05% ProClin 300.

REF C80001, iFlash Wash Buffer (10×): phosphate buffered saline solution with 0.05% ProClin 300.

REF C89996, reaction vessels.

**WARNINGS AND PRECAUTIONS**

IVD For in vitro diagnostic use

- The calibrators (CAL1 and CAL2) and controls have been prepared exclusively from the blood of donors tested individually and shown to be free from HBsAg, anti-HCV, and anti-HIV-1/2 by approved methods.
- However, as no known test method can offer the complete assurance that products derived from human sources will not transmit infection. Therefore, all humanized materials should be considered potentially infectious.
- Exercise the normal precautions required for handling all laboratory reagents.
- Disposal of all waste material should be in accordance with local guidelines.
- Wear gloves when handling specimens or reagents.
- Clean and disinfect all spills of specimens or reagents using a suitable disinfectant.
- iFlash Trigger solution contains sodium hydroxide (NaOH) and should be avoided contact with eyes.
- For further information on warnings and precautions, see Annex B.

**REAGENT HANDLING**

- The reagents may not be used after the stated expiration date.
- Avoid the formation of foam with all reagents.
- The reagents in the pack and calibrators are ready for use.
- Close the bottles of calibrator right after calibration and store at 2-8°C.
- Do not pool reagents within a reagent kit or between reagent kits.

- Prior to loading the iFlash-Anti-HBe reagent pack on the system for the first time, suspend the microparticles by inverting the reagent pack.
- For further information on reagent handling precautions during system operation, refer to the iFlash system operating instruction.

### STORAGE AND STABILITY

#### Storage:

- Store at 2-8°C in an upright position.
- The kit may be used immediately after removal from 2-8°C storage.

#### Stability:

- Unopened at 2-8°C: up to the stated expiration date.
- Opened at 2-8°C: 28 days.
- Store on-board: 28 days.

### SPECIMEN COLLECTION AND PREPARATION

- Serum or plasma (lithium heparin, sodium heparin potassium EDTA, and sodium citrate) are the recommended samples. Other anticoagulants have not been validated for use with the iFlash-Anti-HBe assay.
- Ensure that complete clot formation in serum specimens has taken place prior to centrifugation.
- Centrifuge the specimens.
- Store specimens at room temperature (20 to 25°C) for no longer than 8 hours.
- If the testing will not be completed within 8 hours, refrigerate the samples at 2 to 8°C.
- If the testing will not be completed within 14 days, or for shipment of samples, freeze at -20°C or colder.
- Frozen specimens must be mixed thoroughly after thawing.
- The samples may be frozen for maximum 3 times.
- Centrifuged specimens with a lipid layer on the top, should be transferred only the clarified specimen without the lipemic material.
- Ensure that residual fibrin and cellular matter have been removed prior to analysis.
- Use with caution in handling patient specimens to prevent cross-contamination.
- Do not use heat-inactivated samples.
- Ensure that the patient samples, calibrators and controls are at ambient temperature (20-25°C) before measurement.
- Due to the possible evaporation, specimens and calibrators on the analyzers should be measured within 2 hours.

### ASSAY PROCEDURE

- Refer to the system operating instruction or the online help system for detailed information on preparing the system.
- The test-specific parameters stored in barcode on the reagent pack are read in. In cases the barcode cannot be read, enter the sequence numbers.
- Carry out calibration, if necessary.

- Place the calibrators CAL1 and CAL2 in the calibrator rack in the sample zone. Only keep calibrators open during calibration.
- Test application.
- Load samples (80 µL of sample is needed for each determination in addition to the sample container and system dead volumes).
- Press RUN, the iFlash System performs all the functions automatically and calculates the results.

### CALIBRATION

- Every iFlash-Anti-HBe reagent kit has a QR code label containing the specific information for calibration of the particular reagent lot.
- To perform an iFlash-Anti-HBe calibration, test CAL1 and CAL2 in duplicate and the software calculate the cutoff value based on the RLUs of the two calibrators and information from the QR code.
- Once an iFlash-Anti-HBe calibration is accepted and stored, all subsequent samples may be tested without further calibration unless:
  - After 28 days when using the same reagent lot.
  - A reagent kit with a new lot number is used.
  - Controls are out of range.
  - Required by pertinent regulations.

### QUALITY CONTROL

Quality control materials should be run as single determinations at least once every 24 hours when the test is in use, once per reagent kit and after every calibration. Include commercially available quality control materials that cover at least two levels of analyte. Follow manufacturer's instructions for reconstitution and storage. Each laboratory should establish mean values and acceptable ranges to assure proper performance. Quality control results that do not fall within acceptable ranges may indicate invalid test results.

### RESULT

#### Calculation:

The iFlash system automatically calculates the analyte concentration of each sample. The results are given in COI.

#### Interpretation of Results

- Nonreactive: > 1 COI
- Reactive: ≤ 1 COI

A nonreactive result indicates the sample is considered negative for Anti-HBe.

A reactive result indicates the sample is considered positive for Anti-HBe.

### LIMITATIONS

- The iFlash-Anti-HBe assay is limited to the determination of Anti-HBe in human serum or plasma (lithium heparin, sodium heparin, potassium EDTA, and sodium citrate). It has not been validated for use with other types of plasma.
- The use of serum separator (gel) blood collection tubes has been validated for use with this assay. However, it is not possible to survey all manufacturers

or tube types.

- If the results are inconsistent with clinical evidence, additional testing is suggested to confirm the result.
- For diagnostic purposes, the results should be interpreted in light of the total clinical presentation of the patient, including symptoms, clinical history results.
- Specimens from heparinized patients may be partially coagulated and erroneous results could occur due to the presence of fibrin.
- The results from an alternative assays (i.e. EIA or RIA) may not be equivalent and cannot be used interchangeably.
- The assay is unaffected by icterus (bilirubin < 30 mg/dL), hemolysis (Hb < 1,500 mg/dL), lipemia (Intralipid < 1,500 mg/dL) and total serum protein (< 10 g/dL).
- No interference was observed from rheumatoid factors up to a concentration of 2,000 IU/mL.
- No interference was observed from anti-nuclear antibodies up to a concentration of 500 U/mL.
- No interference was observed from HAMA up to a concentration of 600 ng/mL.

### PERFORMANCE CHARACTERISTICS

Below are the representative performance data, and the results obtained in individual laboratories may differ

#### Precision

The iFlash-Anti-HBe is designed to have a precision of  $\leq$  10% total CV.

The precision of iFlash-Anti-HBe was determined using Anti-HBe reagents, samples and controls.

The within run precision was determined by testing each sample in replicates of 10 (n = 10), and calculating percent coefficient of variation (%CV). The results of the study are shown below:

Sample	Mean (COI)	SD	%CV
1	0.17	0.01	5.88

The between run precision was determined by testing each sample in duplicate, two separate runs daily for 20 days (n = 80), and calculating percent coefficient of variation (%CV). The results of the study are shown below:

Sample	Mean (COI)	SD	%CV
1	2.41	0.18	7.47
2	0.16	0.01	6.25

#### Analytical Specificity

The analytical specificity of iFlash-Anti-HBe assay was evaluated with viral antibody specimens. The nonreactive Anti-HBe status of each specimen was verified using a commercially available Anti-HBe assay.

Clinical Category	Number of Specimens	iFlash Anti-HBe Nonreactive
Hepatitis A (HAV)	5	5
Hepatitis C (HCV)	8	8
HIV-1/2	8	8
Toxoplasma gondii,	7	7
Rubella	10	10
Cytomegalovirus (CMV)	20	20

Herpes Simplex Virus (HSV)	6	6
Epstein-Barr Virus (EBV)	10	10
Treponema Pallidum (TP)	7	7
VZV Antibody	8	8
Alcoholic Liver Disease (ALD)	10	10
Yeast Infections	10	10
<b>Total Samples</b>	<b>109</b>	<b>109</b>

#### Relative Sensitivity

A relative sensitivity of iFlash-Anti-HBe assay was determined by testing samples that were found reactive in a commercially available Anti-HBe assay. A total of 430 samples including sequential and single samples were tested with iFlash-Anti-HBe assay.

Number of Specimens	Reactive Specimens	Relative Sensitivity
430	425	98.84%

#### Relative Specificity

A relative specificity of iFlash-Anti-HBe assay was determined by testing samples that were found nonreactive in a commercially available Anti-HBe assay. A total of 620 samples were tested with iFlash-Anti-HBe assay.

Number of Specimens	Non-reactive Specimens	Relative Specificity
620	611	98.55%

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### ANNEX A:

#### Explanation of abbreviation

Abbreviation	Explanation
	Product No.
	Calibrator
	Reagent
	Number of tests
	Manufactured by
	EU Representative
	Caution
	Instructions for use
	In vitro diagnostic medical device
	Lot No.
	Date of manufacture

	Expiry date
	Biohazard Symbol
GHS07 	Pictograms for Caution
GHS09 	Pictograms for Hazardous to the aquatic environment

### ANNEX B:

#### WARNINGS AND PRECAUTIONS (Proclin 300)

- Hazardous Component: 0.05% Proclin 300  
(Reaction mass of: 5-chloro-2-methyl-4-isothiazolin [EC no. 247-500-7] and 2-methyl-4-isothiazolin-3-one [EC no. 200-239-6] (3:1))
- Hazard Statement:  
H317: May cause an allergic skin reaction.  
H319: Causes serious eye irritation.  
H410: Very toxic to aquatic life with long-lasting effects.
- Precautionary Statement:  
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264: Wash hands thoroughly after handling.  
P272: Contaminated work clothing should not be allowed out of the workplace.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313: If eye irritation persists: Get medical advice/attention.  
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.  
P302+P352: IF ON SKIN: Wash with plenty of soap and water.  
P321: Seek immediate care from a doctor.  
P363: Wash contaminated clothing before reuse.  
P273: Avoid release to the environment.  
P391: Collect spillage.  
P501: Dispose of contents/container in a safe way.