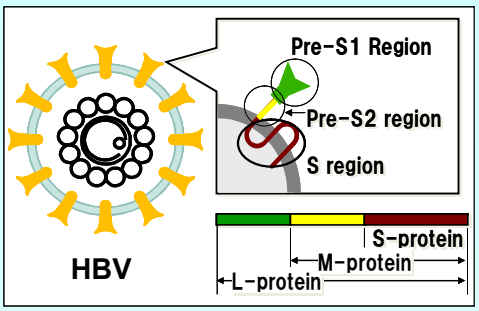
Beacle, Inc.

For Research Use only

# HBV surface antigen S region quantitative ELISA kit

# HBs S Antigen Quantitative ELISA Kit, Rapid-II

Infection to Hepatitis B virus is generally diagnosed by detection of HBsAg. HBsAg is composed of Pre-S1, Pre-S2 and S antigens. But for diagnosis purpose, only S antigen activity is detected in qualitative manner, and many physicians reconginzed as HBsAg is a synonym of S antigen. Beacle Inc. has commercialized a S antigen detection kit a few years ago. Now we have developed new type of S antigen detection kit. This kit is designed for quantitative determination of S antigen with quick manner. Unlike other products which use infected serum as the standard, this kit uses recombinant HBsAg. Thus, the handling is safe and the determined value is highly reproducible. This kit is suitable as a basic tool for various HBV researches.




## Features

1. Quantitative determination of S antigen
2. High sensitivity (as low as 0.05 nUnit/mL*)
3. Safe and reproducible (recombinant standard)
4. Quick determination (minimum 60 min**)

*: one nUnit is defined as the activity of 1ng of the standard antigen, (roughly equal to 0.5 to 1.0 IU/mLofWHO HBsAgstandards)

** : does not include sample preparation, washing and abs measurement.

The product appearance is the subject to change without notice.

【Composition】 Almost all reagents are equipped for determination (see other side for detail)

【Price】

| Product # | Product name |
|---|---|
| BCL-SHP-21 | HBs S Antigen Quantitative ELISA Kit, Rapid-II |

【Related products】

| Product # | Product name | Price |
|---|---|---|
| BCL-S1HP-01 | HBs Pre-S1 Antigen Quantitative ELISA Kit, Rapid | 1 kit |
| BCL-S1D-01 | HBs Pre-S1 Antigen Quantitative ELISA Kit (Genotype D) | 1 kit |
| BCL-S2HP-01 | HBs Pre-S2 Antigen Quantitative ELISA Kit, Rapid | 1 kit |

*HBsAg-related recombinant antigens : Full-length type (L-protein), full length S region-mutant type (L-protein ST), high S antigen type (XT)、Pre-S1 and Pre-S2 peptides and others are available.

*Antibodies against HB s Ag-related antigens : Anti-HBs S,Anti-HBs Pre-S1,Anti-HBs Pre-S2 antibody (monoclonal & polyclonal).All antibodies can be used for ELISA and Western blot.

【Produced by】

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## 【Principle and reaction time】

The main components of this kit are pre-coated plate, HRP-labeled detection IgGand standard antigen.
The standard antigen and samples are applied onto pre-coated microplate with capture IgG. Antigens captured by plate was detected by the detection IgG-HRP. The HRP was then determined by chromogenic agent. Thus, this kit uses standard sandwich technique.
The kit can be used in two ways as shown below. There is essentially no difference in sensitivity or signal strength between the two method except for the times required for assay.

One step method (for quick detection) :
①reactions of antigen with capture and detection IgGs: 60min→②chromogenicreaction:30 min (Total 90 min)*

Two step method (for higher sensitivity) :
①reaction of antigen with capture IgG: 60 min→②reaction of antigen with detection IgG: 30 min →③chromogenicreaction:30 min (Total 120 min)**

*: Reaction① may be reduced to 30 min (Total 60 min) which may cause some decrease in sensitivity.
**: Reaction② may be increased to 60 min (Total 150 min) to get higher sensitivity.

## 【Composition】 The kit composition is the subject to change without notice.

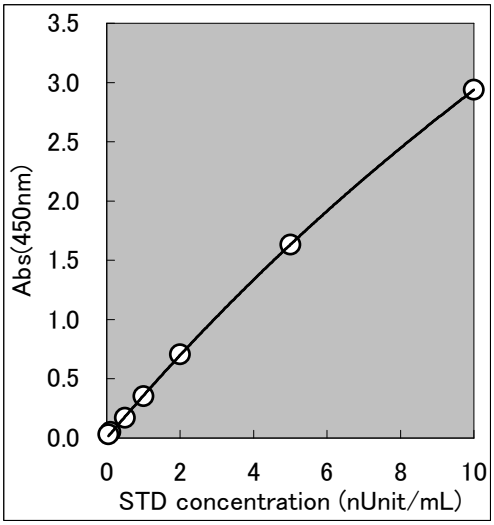
| | |
|---|---|
| Standard recombinant antigen lyophilized | 1 tube |
| Washing Buffer (20× concentrated) | 1 bottle |
| Conjugate (HRP-IgG) | 1 bottle |
| Substrate solution A | 1 bottle |
| Substrate solution B | 1 bottle |
| Stop Solution | 1 bottle |
| 96 well pre-coated microplate(strip type) | 1 plate |
| Instruction manual | 1 sheet |

## 【Equipments and Materials required】

- Microplateleader (wave length =450nm)
- Micropipettes
- Microtubes
- Plate sealer
- 8-channel multi pipette with reservoirs
- Distilled water

*About S antigen acitivity
According to our experience, L protein which is composed of pre-S1, pre-S2 and S antigens shows much less S antigen activity than that of S protein when determined by ELISA. For this reason, we expressed the value obtained by ELISA as "S antigen activity". In this kit, one nUnit of activity is defined as that of 1ng of the standard antigen which is a component of the kit.

## 【Example of standard curve】

Below figure is an example of standard curve obtained using the kit by the two step method.

| STD | | Abs450nm |
|---|---|---|
| ID | nUnit/mL | |
| STD① | 10 | 2.938 |
| STD② | 5 | 1.631 |
| STD③ | 2 | 0.705 |
| STD④ | 1 | 0.354 |
| STD⑤ | 0.5 | 0.172 |
| STD⑥ | 0.1 | 0.051 |
| STD⑦ | 0.05 | 0.031 |