

## Elite™ gp120 (HIV-1/Clade A) ELISA Assay Kit

CATALOG NUMBER: CA-gp120A, 200 assays

### Description

gp120 (HIV-1/Clade A) ELISA Assay Kit contains the key components required for the quantitative analysis of gp120 (HIV-1/Clade A) concentrations in cell culture supernatants and serum within the range of 1-1000 ng/ml in a sandwich ELISA format. A pair of matched monoclonal antibodies has been selected as capture antibody and detection antibody. The components supplied in this kit are sufficient to assay gp120 (HIV-1/Clade A) in two 96-well ELISA plates.

### Kit Components

- **Component A:** Capture Antibody (anti-gp120 (HIV-1/Clade A) monoclonal antibody)  
50 µl (1 mg/ml)
- **Component B:** gp120 Standard (recombinant gp120 (HIV-1/Clade A) protein)  
25 µl (50 µg/ml)
- **Component C:** Detection Antibody (biotinylated anti-gp120 (HIV-1/Clade A) monoclonal antibody)  
25 µl
- **Component D:** HRP-Conjugated Streptavidin  
25 µl
- **Component E:** TMB Solution A (3,3',5,5'- tetramethylbenzidine), light sensitive  
12 ml
- **Component F:** TMB Solution B (H<sub>2</sub>O<sub>2</sub>), light sensitive  
12 ml
- **Component G:** TMB Stop Solution  
25 ml

### Materials Required but not Provided

- 96-well microtiter plates for ELISA assay
- PBS
- Coating Buffer: 0.05 M Carbonate-Bicarbonate, pH 9.6
- Blocking Buffer: 5% milk in PBS
- Washing Buffer: 0.05% Tween-20 in PBS
- Dilution Solution: 0.05% Tween-20 and 0.5% milk in PBS

### Storage

Keep in 4 °C and avoid exposure to light; do not freeze!

### Assay Protocol

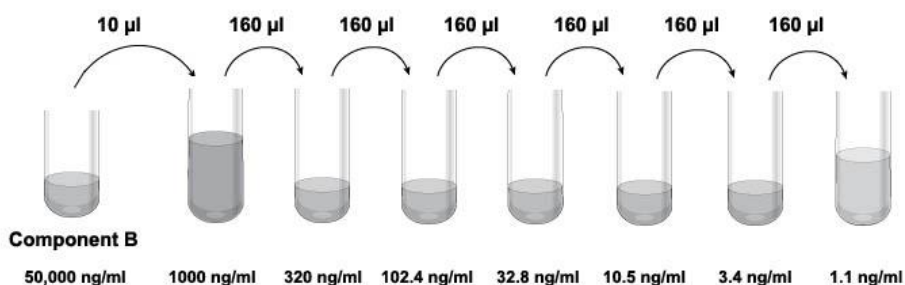
#### 1. Plate Preparation:

- 1.1 For each 96-well microtiter plate, dilute 20 µl of Capture Antibody (**Component A**) with 10.5 ml of Coating Buffer to prepare a coating solution. Immediately add 100 µl of the coating solution to each well. Seal the plate and incubate overnight at 4 °C.
- 1.2 Remove the coating solution and wash the plate twice with 200 µl PBS. Invert the plate and blot it briefly with clean paper towel.
- 1.3 Add 300 µl of Blocking Buffer to each well. Incubate for at least 1 hour at room temperature.
- 1.4 Aspirate to remove Blocking Buffer and wash the plate 4 times with 300 µl of Washing Buffer per well.

#### 2. Run ELISA Assay:



- 2.1 Standard/Sample: Dilute the gp120 Standard (**Component B**) with PBS to eight concentrations (1000 ng/ml, 320 ng/ml, 102.4 ng/ml, 32.8 ng/ml, 10.5 ng/ml, 3.4 ng/ml, 1.1 ng/ml, and 0 ng/ml). Immediately add 100  $\mu$ l of Standard and sample to each well in triplicate. Incubate at 37°C for at least 1 hour.



- 2.2 Detection: Aspirate and wash plate 4 times. Dilute 10  $\mu$ l of Detection Antibody (**Component C**) with 10.5 ml of Dilution Solution to prepare a detection solution. Add 100  $\mu$ l of the detection solution into each well. Incubate at 37 °C for 1 hour.
- 2.3 Streptavidin Peroxidase: Aspirate and wash plate 4 times. Dilute 10  $\mu$ l of HRP-Conjugate Streptavidin (**Component D**) with 10.5 ml of Dilution Solution. Add 100 $\mu$ l into each well. Incubate at 37 °C for 45 minutes.
- 2.4 TMB Peroxidase Substrate Solution Preparation: Mix equal volumes of TMB Solution A (**Component E**) and TMB Solution B (**Component F**) in a clean, preferably HDPE, polypropylene or glass container immediately prior to use at room temperature.
- Note: For one 96-well plate, prepare 12 ml TMB Peroxidase Substrate Solution by mixing 6 ml **Component E** and 6 ml **Component F**.*
- 2.5 TMB Reaction: Aspirate and wash plate 4 times with Washing Buffer. Add 100  $\mu$ l of TMB Peroxidase Substrate Solution (from Step 2.4) into each well. Incubate at 37 °C for 25 minutes.
- 2.6 TMB Reaction Termination: Add 100  $\mu$ l of TMB Stop Solution (**Component G**) to each well. This stop solution will halt color development and will turn the TMB Substrate from blue into yellow.
- 2.7 Read: Determine the optical density of each well within 30 minutes using a microplate reader set to 450nm.
- 2.8 Analysis: Average the triplicate reading for each standard, control, and sample, then subtract the average zero standard optical density. Create a standard curve by reducing the data using computer software capable of generating a four parameter logistic (4-PL) or other curve-fit. The gp120 (HIV-1/Clade A) concentration in sample can be determined by regression analysis. If samples have been diluted, the concentration calculated from the standard curve must be multiplied by the dilution factor.

