



## Anti-SmD1 C-terminus ELISA Kit

Catalog Number EA-5001

(For Research Use Only)

### Introduction

Antibodies against the Sm antigens of the small nuclear ribonucleoproteins (snRNPs) are a very specific marker for the diagnosis of systemic lupus erythematosus (SLE). Antibodies against the Sm proteins are found in 20-30% of SLE patients. Anti-Sm antibodies are observed at a high titer in the active period of SLE and at a low titer in the non-active period. Antibodies directed against Sm proteins as well as DNA found in sera from patients with SLE have been included as one of the American College of Rheumatology classification criteria for SLE. Sm antigen is now known to be consisted of at least nine different polypeptides. Anti-Sm antibodies are predominantly directed against the SmD1 protein of the snRNP complex. The C-terminal peptide of the SmD1 protein aa 83–119 is found to be a major target for the autoantibody response in SLE patients with a sensitivity of 70% and an SLE specificity of 94%.

### Principle of the assay

Anti-SmD1 C-terminus ELISA kit measures anti-SmD1 antibodies in the serum. It is based on the principle of a solid phase enzyme-linked immunosorbent assay. The assay utilizes the SmD1 C-terminal peptide for immobilization on the microtiter wells and anti-human IgG antibody conjugated to horseradish peroxidase (HRP) for detection. The test sample is allowed to react simultaneously with the two components, resulting in Anti-SmD1 antibodies being sandwiched between the solid phase and enzyme-linked antibodies. After incubation, the wells are washed to remove unbound-labeled antibodies. A HRP substrate, TMB, is added to result in the development of a blue color. The color development is then stopped with the addition of Stop Solution changing the color to yellow. The concentration of anti-SmD1 C-terminus is directly proportional to the color intensity of the test sample. Absorbance is measured spectrophotometrically at 450 nm.

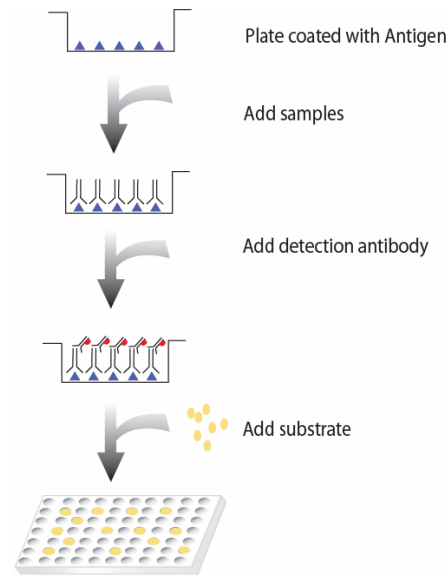


Diagram of ELISA

### Materials provided with the kit

- 96-well plate coated with SmD1 C terminal peptide aa 83-119 (4°C).
- Anti-human IgG antibody conjugated to HRP (4°C).
- 40ml 1X Diluent buffer (4°C).
- 40ml 5X Assay wash buffer (4°C).
- 10ml Substrate (4°C).
- 6 ml Stop Solution (4°C)

### Material required but not provided

- Microplate reader capable of measuring absorbance at 450 nm
- Shaker

## Reagent preparation before starting experiment

- Dilute the 5x Assay wash buffer to 1x buffer  
40ml 5x Assay wash buffer  
160ml ddH<sub>2</sub>O
- Dilute 1000 times of anti-human IgG antibody conjugated to HRP with 1X Diluent buffer.

## Storage and Preparation

Store all reagents at 2-8°C.

All reagents must be brought to room temperature (20-25°C) prior to use.

When stored at 2-8°C, the diluted Assay wash buffer is stable until the kit expiration date.

## Precautions

Human blood derivatives and patient specimens should be considered potentially infectious. All human derived components need to be tested for the negative HBsAg, HCV, HIV-1 and 2 and HTLV-I. Follow good laboratory practices in storing, dispensing and disposing of these materials.

## Assay procedure

1. Cut the sealing film over the plate and remove it from the desired number of well strips. Make sure the rest of wells are well sealed.
2. Add 100 µl of diluted samples (1:100 diluted or further 2 serial diluted serum) per well and incubate for 1 hour at room temperature with gentle shaking.
3. Aspirate each well and wash by adding 200µl of 1X Assay wash buffer. Repeat the process twice for a total of three washes. Completely remove liquid at each wash by firmly tapping the plate against clean paper towels.
4. Add 100µl of diluted anti-human IgG antibody conjugated to HRP to each well and incubate for 0.5 hours at room temperature with gentle shaking.
5. Repeat the aspiration/wash as in step 3.
6. Add 100µl of Substrate to each well and incubate for 5-30 minutes.
7. Add 50µl of Stop solution to each well. The color in the wells should change from blue to yellow.
8. Determine the optical density of each well with a microplate reader at 450 nm within 30 minutes.

## Example

