

## HIV1 p24 ELISA Kit ab218268

SimpleStep ELISA

[18 References](#) [画像数 15](#)

### 製品の概要

製品名 HIV1 p24 ELISA Kit

検出方法 Colorimetric

再現性 Intra-Assay (同時再現性)

| サンプル    | N | 平均値 | SD | CV%  |
|---------|---|-----|----|------|
| Overall | 3 |     |    | 4.5% |

Inter-Assay (日差再現性)

| サンプル    | N | 平均値 | SD | CV%  |
|---------|---|-----|----|------|
| Overall | 5 |     |    | 4.7% |

サンプルの種類 Cell culture supernatant, Serum, Cell culture extracts, Tissue Extracts, Hep Plasma, EDTA Plasma

アッセイタイプ Sandwich (quantitative)

検出感度 1.1 pg/ml

検出範囲 4.69 pg/ml - 300 pg/ml

添加回収試験 特定サンプルでの回収試験

| サンプルの種類               | 平均 % | 測定範囲        |
|-----------------------|------|-------------|
| Serum                 | 105  | 94% - 117%  |
| Cell culture extracts | 107  | 103% - 113% |
| Cell culture media    | 102  | 94% - 107%  |
| Hep Plasma            | 102  | 100% - 103% |
| EDTA Plasma           | 98   | 93% - 103%  |

全工程の試験時間 1h 30m

|            |  |
|------------|--|
| ステップ       | One step assay   |
| 種交差性       | 交差種: Human   |
| 製品の概要      | <p>HIV1 p24 ELISA Kit (ab218268) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of HIV1 p24 protein in human serum, plasma, cell culture supernatant, and cell and tissue extract samples. It uses our proprietary SimpleStep ELISA® technology. Quantitate HIV1 p24 with 1.1 pg/mL sensitivity.</p> <p>Lentivirus vectors based on HIV-1 have gained popularity as a tool for cell and gene therapy, owing to their ability to carry and integrate a high volume of transgenes in a range of dividing and non-dividing cell types. Pseudo-lentiviral particles are typically produced from 293T cells and harvested from the medium 48-78hrs post-transfection. To ensure that the pseudoviral medium is viable, and to control the number of copies of integrated viral constructs per target cell, the viral titre needs to be determined before transduction experiments. Our HIV1 p24 SimpleStep ELISA® can be used to rapidly and sensitively determine the titre of HIV1 particles in range of sample types.</p> <p>SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:</p> <ul style="list-style-type: none"> <li>-Single-wash protocol reduces assay time to 90 minutes or less</li> <li>-High sensitivity, specificity and reproducibility from superior antibodies</li> <li>-Fully validated in biological samples</li> <li>-96-wells plate breakable into 12 x 8 wells strips</li> </ul> <p>A 384-well SimpleStep ELISA® microplate (<b>ab203359</b>) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.</p> <p><b>ASSAY SPECIFICITY</b> This kit recognizes both native and recombinant HIV-1 p24 protein in serum, EDTA and heparin plasma, cell culture supernatant, and cell and tissue extract samples only. Urine, saliva, and milk samples have not been tested with this kit.</p> <p><b>CROSS REACTIVITY</b> Recombinant HIV-1 Gag protein was prepared at 50 ng/mL and 1 ng/mL and assayed for cross reactivity. 1% cross-reactivity was observed.</p> <p>HIV1 p24 (capsid) protein is essential for HIV-1 viral replication and for the HIV-1 infection of non-dividing cells. HIV1 p24 proteins form viral capsid that encapsulates the genomic HIV1 RNA. HIV1 p24 concentration in host plasma is commonly used as indicator of viral load. Upon the viral infection, the development of anti-HIV1 p24 host humoral responses leads to immune complex formation and reduction of the free HIV1 p24 concentration in circulation.</p> <p>Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances. It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.</p> <p>Pre-coated microplate (12 x 8 well strips)</p> |
| 特記事項       |  |
| 試験プラットフォーム |  |

## 製品の特性

### 保存方法

Store at +4°C. Please refer to protocols.

| 内容  | 1 x 96 tests |
|---|--------------|
| 10X HIV1 p24 Capture Antibody                       | 1 x 600µl    |
| 10X HIV1 p24 Detector Antibody                      | 1 x 600µl    |
| 10X Wash Buffer PT (ab206977)                       | 1 x 20ml     |
| 50X Cell Extraction Enhancer Solution (ab193971)    | 1 x 1ml      |
| 5X Cell Extraction Buffer PTR (ab193970)            | 1 x 10ml     |
| Antibody Diluent 5BI                                | 1 x 6ml      |
| HIV1 p24 Lyophilized Recombinant Protein            | 2 vials      |
| Plate Seals   | 1 unit       |
| Sample Diluent 50BS                                 | 1 x 20ml     |
| Sample Diluent NS (ab193972)                        | 1 x 50ml     |
| SimpleStep Pre-Coated 96-Well Microplate (ab206978) | 1 unit       |
| Stop Solution                                       | 1 x 12ml     |
| TMB Development Solution                            | 1 x 12ml     |

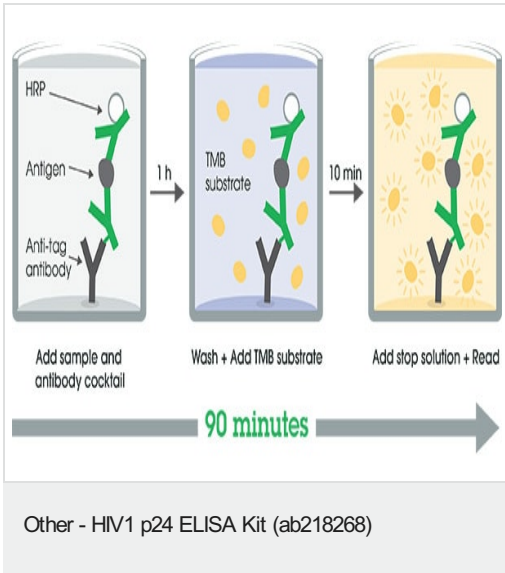
### 関連性

HIV1 performs highly complex orchestrated tasks during the assembly, budding, maturation and infection stages of the viral replication cycle. During viral assembly, the proteins form membrane associations and self-associations that ultimately result in budding of an immature virion from the infected cell. Gag precursors also function during viral assembly to selectively bind and package two plus strands of genomic RNA. Capsid protein p24 probably forms the conical core of the virus that encapsulates the genomic RNA-nucleocapsid complex.

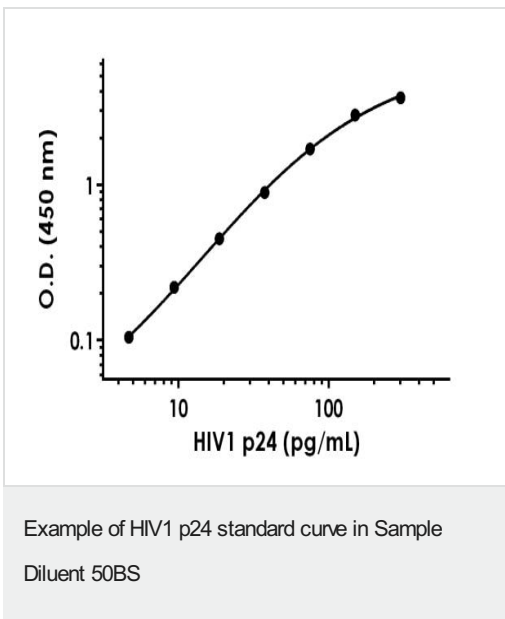
### 細胞内局在

Membrane

### 画像



SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

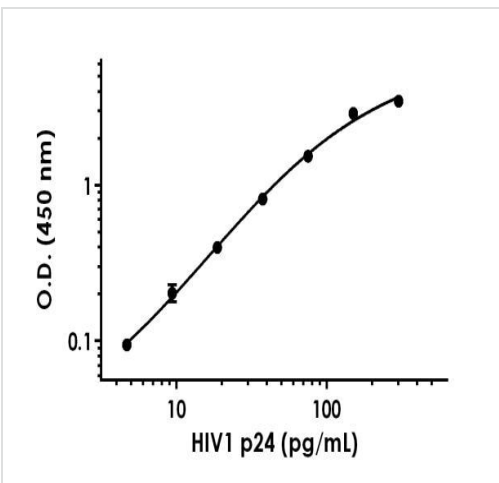


Background-subtracted data values (mean +/- SD) are graphed.

| Standard Curve Measurements |            |        |          |
|-----------------------------|------------|--------|----------|
| Concentration (pg/ml)       | O.D 450 nm |        | Mean O.D |
|                             | 1          | 2      |          |
| 0                           | 0.1495     | 0.1478 | 0.149    |
| 4.69                        | 0.257      | 0.249  | 0.253    |
| 9.38                        | 0.370      | 0.364  | 0.367    |
| 18.75                       | 0.593      | 0.605  | 0.599    |
| 37.5                        | 1.040      | 1.039  | 1.039    |
| 75                          | 1.863      | 1.839  | 1.851    |
| 150                         | 2.901      | 3.031  | 2.966    |
| 300                         | 3.762      | 3.801  | 3.782    |

Raw data values are shown in the table

Raw data values for Example of HIV-1 p24 standard curve in Sample Diluent 50BS.



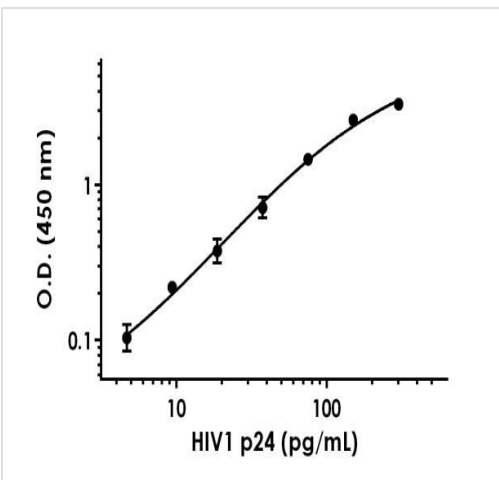
Background-subtracted data values (mean +/- SD) are graphed.

Example of HIV1 p24 standard curve in Sample Diluent NS

| Standard Curve Measurements |            |       |          |
|-----------------------------|------------|-------|----------|
| Concentration (pg/mL)       | O.D 450 nm |       | Mean O.D |
|                             | 1          | 2     |          |
| 0                           | 0.082      | 0.081 | 0.081    |
| 4.69                        | 0.174      | 0.178 | 0.176    |
| 9.38                        | 0.304      | 0.267 | 0.285    |
| 18.75                       | 0.460      | 0.498 | 0.479    |
| 37.5                        | 0.892      | 0.898 | 0.895    |
| 75                          | 1.633      | 1.598 | 1.616    |
| 150                         | 3.017      | 2.917 | 2.967    |
| 300                         | 3.581      | 3.499 | 3.540    |

Raw data values are shown in the table

Raw data values for example of HIV-1 p24 standard curve in Sample Diluent NS.



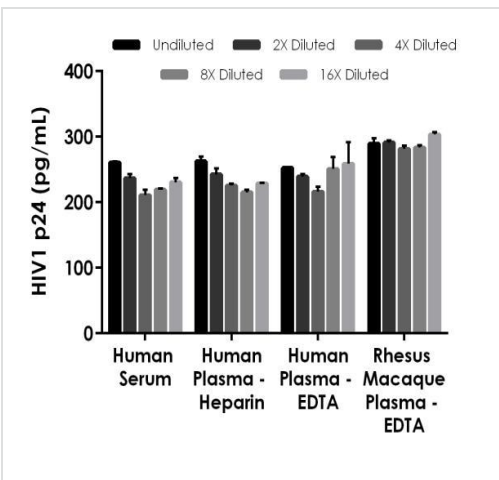
Background-subtracted data values (mean +/- SD) are graphed.

Example of HIV1 p24 standard curve in 1X Cell Extraction Buffer PTR

| Standard Curve Measurements |            |       |          |
|-----------------------------|------------|-------|----------|
| Concentration (pg/mL)       | O.D 450 nm |       | Mean O.D |
|                             | 1          | 2     |          |
| 0                           | 0.066      | 0.065 | 0.065    |
| 4.69                        | 0.185      | 0.160 | 0.172    |
| 9.38                        | 0.283      | 0.290 | 0.286    |
| 18.75                       | 0.491      | 0.399 | 0.445    |
| 37.5                        | 0.860      | 0.701 | 0.780    |
| 75                          | 1.604      | 1.445 | 1.525    |
| 150                         | 2.824      | 2.528 | 2.676    |
| 300                         | 3.407      | 3.328 | 3.367    |

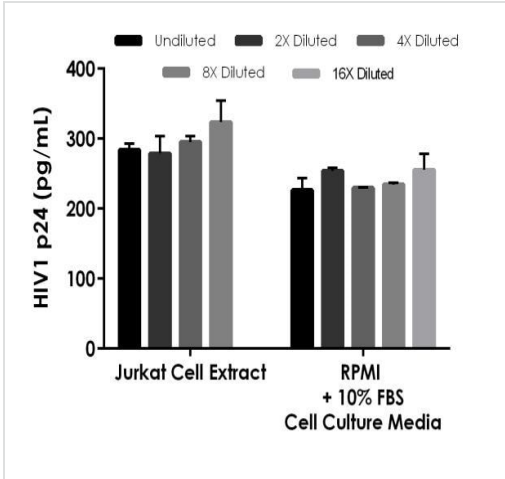
Raw data values are shown in the table

Example of HIV-1 p24 standard curve in 1X Cell Extraction Buffer PTR



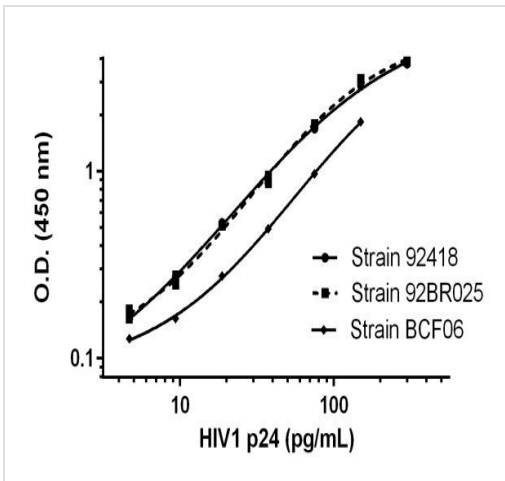
The concentrations of HIV1 p24 were measured in duplicates, interpolated from the HIV1 p24 standard curves and corrected for sample dilution. Undiluted samples are as follows: human serum 100% (neat), human plasma (heparin) 100% (neat), human plasma (EDTA) 100% (neat), and rhesus macaque plasma (EDTA) 100% (neat). The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

Interpolated concentrations of spike HIV1 p24 in human serum, human plasmas, and rhesus macaque plasma



Interpolated concentrations of spike HIV1 p24 in Jurkat Cell Extract and RPMI + 10% FBS cell culture media

The concentrations of HIV1 p24 were measured in duplicates, interpolated from the HIV1 p24 standard curves and corrected for sample dilution. Undiluted samples are as follows: Jurkat cell extract 100 µg/mL, RPMI + 10% FBS cell culture media 100% (neat). The interpolated dilution factor or corrected values are plotted (mean +/- SD, n=2).



Serial dilutions of recombinant HIV1 p24 were prepared within the working range of the assay and assayed for reactivity.

Serial dilutions of recombinant HIV1 p24 (group M, subtype B, strain 92418), HIV1 p24 (group M, subtype C, strain 92BR025) and HIV1 p24 (group O, strain BCF06) were prepared within the working range of the assay and assayed for reactivity. O.D. values within the linear range of each protein are graphed.



| Sample Type               | Average % Recovery | Range (%) |
|---------------------------|--------------------|-----------|
| 100% Human Serum          | 133                | 115 - 159 |
| 100% Human Plasma Heparin | 122                | 117 - 128 |
| 100% Human Plasma EDTA    | 113                | 103 - 125 |

Acid treatment recovery

Three concentrations of purified HIV-1 p24 protein were spiked in duplicate to the indicated biological matrix and treated with the Acid Treatment Protocol to evaluate signal recovery in the working range of the assay. The signals of the same concentrations of purified HIV-1 p24 protein spiked in duplicate to Sample Diluent 50BS and treated with the Acid Treatment Protocol were taken as 100%.

| Sample Type                        | Average % Effect | Range (%) |
|------------------------------------|------------------|-----------|
| 100% Human Serum (donor 1)         | 63               | 62-63     |
| 100% Human Serum (donor 2)         | 65               | 63-66     |
| 100% Human Serum (donor 3)         | 70               | 69-71     |
| 100% Human Serum (donor 4)         | 60               | 60-60     |
| 100% Human Serum (pooled)          | 59               | 59-59     |
| 100% Human Plasma Heparin (pooled) | 70               | 68-72     |
| 100% Human Plasma EDTA (pooled)    | 69               | 68-70     |

Acid treatment effect

Single concentrations of purified HIV-1 p24 protein were spiked in duplicate to the indicated biological matrix and treated with the Acid Treatment Protocol or mock acid treated to evaluate the effect of the Acid Treatment Protocol on the signal. The signals of single concentrations of purified HIV-1 p24 protein spiked in duplicate to the indicated biological matrix and mock acid treated were taken as 100%.

| Sample Type                     | Average % Recovery | Range (%) |
|---------------------------------|--------------------|-----------|
| 100% Human Serum                | 16                 | 14-17     |
| 100% Human Plasma - Heparin     | 14                 | 14-15     |
| 100% Human Plasma - EDTA        | 10                 | 10-10     |
| 100% Rhesus Macaque Plasma EDTA | 16                 | 14-19     |

Acid treatment recovery of synthetic complexes

Single concentrations of purified HIV-1 p24 protein were spiked to the indicated biological matrix, pre-incubated with unlabeled capture and detector antibodies or unrelated antibodies and treated with the Acid Treatment Protocol to evaluate the signal recovery of p24 complexed with interfering antibodies by Acid Treatment Protocol. The signals of single concentrations of purified HIV-1 p24 protein spiked to the indicated biological matrix, preincubated with unrelated antibodies and treated with the Acid Treatment Protocol were taken as 100%. There were no signals if the single concentrations of purified HIV-1 p24 protein were spiked to the indicated biological matrix, pre-incubated with the unlabeled capture and detector antibodies and mock acid treated, indicating that the unlabeled capture and detector antibodies efficiently formed synthetic immune complexes with HIV-1 p24 and completely blocked the signals.

| Dilution Factor | Interpolated value | 100% Human Serum | 100% Human Plasma (Heparin) | 100% Human Plasma (EDTA) | 100% Rhesus Macaque Plasma (EDTA) |
|-----------------|--------------------|------------------|-----------------------------|--------------------------|-----------------------------------|
| Undiluted       | pg/mL              | 261              | 263                         | 252                      | 289                               |
|                 | % Expected value   | 100              | 100                         | 100                      | 100                               |
| 2               | pg/mL              | 118              | 121                         | 120                      | 146                               |
|                 | % Expected value   | 91               | 92                          | 95                       | 101                               |
| 4               | pg/mL              | 52.7             | 56.3                        | 54                       | 70.4                              |
|                 | % Expected value   | 81               | 96                          | 86                       | 97                                |
| 8               | pg/mL              | 27.4             | 26.9                        | 31.4                     | 35.4                              |
|                 | % Expected value   | 84               | 82                          | 99                       | 98                                |
| 16              | pg/mL              | 14.4             | 14.3                        | 16.2                     | 19.0                              |
|                 | % Expected value   | 88               | 87                          | 103                      | 105                               |

Linearity of dilution – spiked Purified HIV-1 p24 in Human serum, plasma (heparin, citrate, EDTA) and rhesus macaque EDTA plasma.

Purified HIV-1 p24 was spiked into biological samples and diluted in a 2-fold dilution series in Sample Diluent 50BS.

| Dilution Factor | Interpolated value | 100% RPMI + 10% FBS Cell Culture Media | 100 µg/mL Jurkat Cell Extract |
|-----------------|--------------------|--|-------------------------------|
| Undiluted       | pg/mL              | 227                                    | 284                           |
|                 | % Expected value   | 100                                    | 100                           |
| 2               | pg/mL              | 127                                    | 139                           |
|                 | % Expected value   | 112                                    | 98                            |
| 4               | pg/mL              | 57.4                                   | 73.8                          |
|                 | % Expected value   | 101                                    | 104                           |
| 8               | pg/mL              | 29.3                                   | 40.4                          |
|                 | % Expected value   | 104                                    | 114                           |
| 16              | pg/mL              | 16.0                                   | NL                            |
|                 | % Expected value   | 113                                    | NL                            |

Linearity of dilution – spiked purified HIV-1 p24 in FBS cell culture media and Jurkat Cell Extract

Purified HIV-1 p24 was spiked into biological samples and diluted in a 2-fold dilution series in Sample Diluent NS for cell culture media and 1X Cell Extraction Buffer PTR for cell extract samples.

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