Rapid Lentivirus Titration by p24 ELISA

- Simple and fast, ELISA-based titration protocol
- Collect supernatant, lyse, bind, wash, and detect
- Correlate p24 content to virus titer

The Lenti-X™ p24 Rapid Titer Kit uses a standard ELISA to quickly determine the titer of any HIV-1-based lentiviral supernatant. The wells of the included microtiter plate (12 x 8-well strips) are coated with anti-p24 capture antibody, which quantitatively binds the p24 virus core/capsid protein in your test samples. Specifically-bound p24 is detected in a typical “sandwich” ELISA format using a biotinylated anti-p24 secondary antibody, a streptavidin-HRP conjugate, and a color producing substrate. A p24 standard curve quantifies p24 content, which allows the lentivirus titer to be calculated.

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<th>Product</th>
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<td>Lenti-X p24 Rapid Titer Kit</td>
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**What is p24?**

Recombinant lentiviruses generated for research use, whether they are 3rd or 4th generation (e.g. Lenti-X), contain major structural proteins including: the VSV-G or ecotropic envelope proteins, matrix proteins, and virus core proteins (Figure 1). The *gag* gene encodes the viral capsid protein (p24), the nucleocapsid proteins (p6 and p7), and a matrix protein (p17). The Lenti-X p24 Rapid Titer Kit specifically measures the amount of p24 capsid protein present in your viral supernatant. The level of p24 correlates directly with virus titer.

**Calculating Your Titer**

The titer of your supernatant is determined by correlating its p24 value to virus content or infectivity (Figure 2). Once the relationship is defined, your virus production system can be calibrated to determine a relationship between p24 levels and infectivity. Alternatively, you can calculate the amount of virus based on p24 content as described in the user manual.

**How does it work?**

The virus in your lentiviral supernatant is first lysed in the supplied buffer system to release p24. The sample is then applied to 96-well microtitration plate (made up of 12 separable 8-well strips), in which the wells are pre-coated with murine anti-p24 capture antibody. After washing to remove unbound lysate, the amount of specifically bound p24 is then detected using a biotinylated anti-p24 secondary antibody, streptavidin-HRP (horseradish peroxidase), and a color development reagent. The kit is supplied with a p24 control which is used to generate a standard curve and calibrate the p24 equivalent of your supernatant, and its titer.

As a leader in lentiviral technology, Clontech offers a full range of Lenti-X expression systems and accessories for the effective delivery of cDNAs or shRNAs into any cell type using high-titer lentiviral vectors.

![Figure 1](image1.png)

Figure 1. p24 is located in the lentiviral capsid and is one of 4 proteins encoded by the HIV-1 *gag* gene.

![Figure 2](image2.png)

Figure 2. Lentivirus titer correlates with p24 content. A Lenti-X supernatant generated using the pLViX-ZsGreen1 vector was assayed for p24 content using the Lenti-X p24 Titration Kit. HT1080 cells were infected with supernatant dilutions containing the indicated amounts of p24. After 48 hr, transduced cells were counted and mean fluorescence intensity was determined using flow cytometry.