

Lenti-X™ 293T Cells for Superior Lentivirus Packaging

Our optimized Lenti-X 293T Cell Line supports the highest levels of lentivirus production

- Highest titers when using the Lenti-X HT Packaging System
- Consistently high virus production due to high transfectability
- Saves time and money—get more virus produced per transfection

Getting the most from your lentiviral packaging system requires a host cell line that transfects easily and supports high-level expression of viral proteins. Our specialized **Lenti-X 293T Cell Line** meets these requirements and allows you to produce the highest possible lentiviral titers ($>10^8$ ifu/ml) from our premium high-titer **Lenti-X HT Packaging System** (1).

Superior Performance from the Ultimate Host Cell Line

The Lenti-X 293T Cell Line demonstrates excellent virus production because it was specifically designed to do so. The line was clonally selected from a HEK 293T cell line, which expresses high levels of the SV40 large T antigen (in addition to the adenoviral E1A protein; 2). Individual clones were screened for high transfectability and high titer virus production.

We used our Lenti-X HT Packaging System and a Lenti-X transfer vector to compare the virus production of the Lenti-X 293T Cell Line to that of two other commonly used HEK 293-based cell lines. The Lenti-X 293T Cell Line clearly outperformed the other cell lines—producing over 6-times as much virus as 293FT cells and up to 30-times more than wild type HEK 293 cells (Figure 1).

Packaging System Components that Work Together

The keys to these outstanding levels of virus production lie in a highly orchestrated synergy of four optimized system components:

First, our novel Lenti-X HT Packaging Mix is a proprietary suite of vectors that

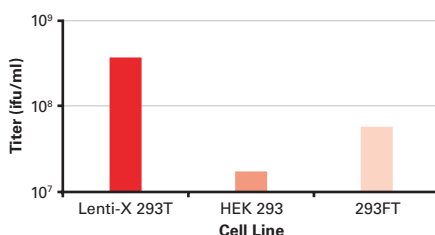


Figure 1. The Lenti-X 293T Cell Line produces superior titers. The Lenti-X HT Packaging System and a pLVX-ZsGreen1 Vector were used to produce lentivirus from three different cell lines. Viral supernatants were titrated on HT1080 cells using ZsGreen1 expression and flow cytometry to quantitate the transduced cells.

provides high-level expression of all the essential lentiviral packaging components (i.e., Gag-Pro, Tat, Rev, RT, IN, and VSV-G) in exactly the right ratios (1). This split gene expression strategy also guards against the production of replication competent viruses and increases biosafety.

Second, all of our Lenti-X transfer vectors harbor special sequence elements that contribute to high titers and provide high-levels of transgene expression (3).

Third, our optimized **Lentiphos™ HT**, transfection kit routinely attains transfection efficiencies approaching 100% in the Lenti-X 293T Cell Line (4), and is included with all our complete Lenti-X expression systems.

Product	Size	Cat. No.
Lenti-X 293T Cell Line	1 ml	632180
Lenti-X HT Packaging System	20 rxns	632160
	40 rxns	632161

Finally, the Lenti-X 293T Cell Line provides the optimum cellular host for the system, due to its transfectability and ability to tolerate high levels of viral proteins.

From transfection to titration, Clontech offers a versatile and complete line of premium products for lentiviral gene delivery, suitable for any application. Our Lenti-X expression systems are superb combinations of reagents that produce the highest titers of any commercially available system (Figure 2), while the VSV-G pseudotyped viruses can be used to safely transduce virtually any cell type.

References

1. High-Efficiency Lentiviral Packaging (2007) *Clontechiques XXII*(4):1–2.
2. Pear, W. S. *et al.* (1993) *Proc. Natl. Acad. Sci. USA* **90**(18):8392–8396.
3. Lentiviral Delivery Vectors for cDNA and shRNA Expression (2008) *Clontechiques XXIII*(4):9–10.
4. Transfection Reagent for High-Titer Lentivirus (2007) *Clontechiques XXII*(4):8.

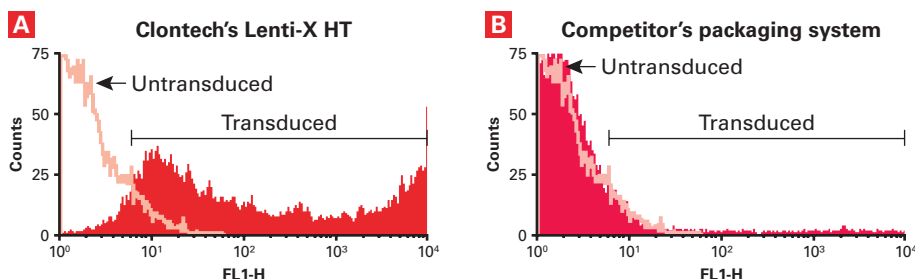


Figure 2. High infectivity of supernatants produced by the Lenti-X HT Packaging System. The Lenti-X HT Packaging System (**Panel A**) and a competitor's packaging system (**Panel B**) were each used with Lenti-X 293T cells to generate lentiviral vectors for ZsGreen1 expression. Whereas 10 μ l of the Lenti-X HT supernatant transduced the vast majority of a HeLa cell culture, 10 μ l of the competitor's supernatant transduced only a small percentage of cells. Transduced cells were quantitated by flow cytometry.