



TRiP System™

for AAV, lentiviral vectors and adenovirus



Transgene repression maximises vector production yield and improves product quality

Advantages of TRiP System™

— Efficient:

- ✓ Improves vector yield and particle quality
- ✓ Enables development of viral vectors carrying cytotoxic transgenes
- ✓ Standardises downstream processes

— Broadly applicable:

- ✓ Across key vector platforms including Lentiviral, AAV and Adenoviral based vector systems
- ✓ Can be used in transient transfection and with stable producer cell lines

— Multifunctional:

- ✓ Transgene and promoter independent
- ✓ Works with IRES elements and multicistronic cassettes

Vector yields and quality can be dramatically reduced by expression of the transgene during vector production.

This is because the transgene protein can be cytotoxic, impacting production cells' viability and can also interfere with the assembly of the vector. Additionally, the vector particle can be contaminated by the transgene protein.

This can make purification more challenging, reduces product purity and raises immunogenicity concerns.

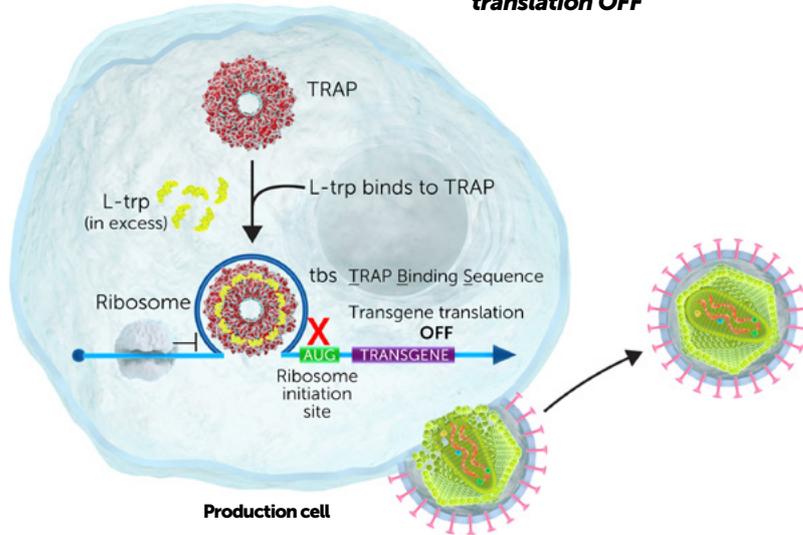
Our TRiP System™ Solution

Our 'Transgene Repression in Vector production' (TRiP) System™ temporarily stops the production of transgene protein during manufacture of vector particles in order to increase vector production. The TRiP System™ can potentially improve vector yield by up to 1000 times, thereby decreasing the cost of goods for manufacturing as well as increasing quality. It also enables the manufacturing of vectors carrying cytotoxic transgenes, or those that inhibit cell growth. The TRiP System™ has no impact on the expression of the transgene in target cells.

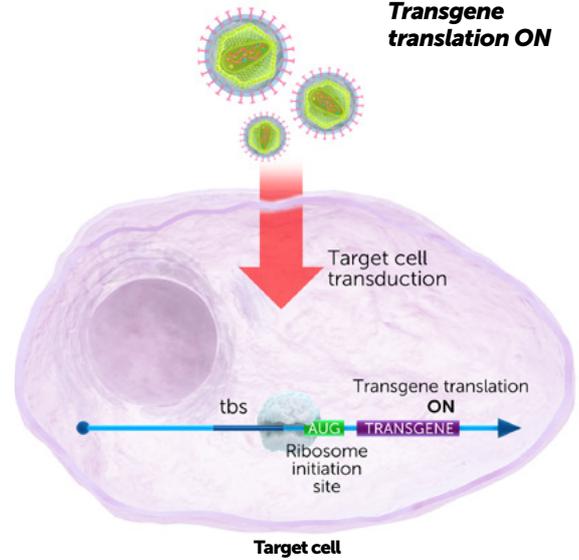
The TRiP System™ works by transfecting a plasmid encoding the bacterial tryptophan RNA-binding attenuation protein (TRAP) in production cells. A TRAP binding sequence (tbs) is inserted upstream of the transgene in the vector genome. In production cells, in excess of L-tryptophan, the TRAP protein binds to the tbs sequence and blocks translation of the transgene mRNA.

How TRiP works:

Transgene translation OFF

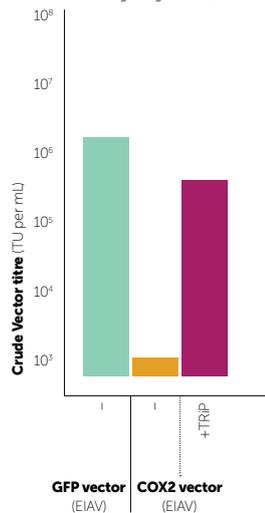


Transgene translation ON

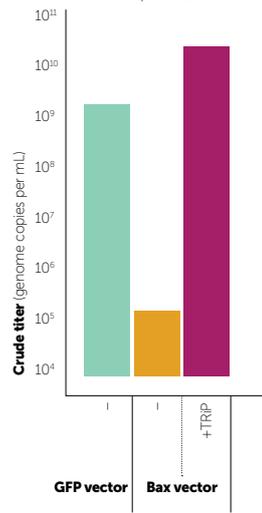


The TRiP System™ enables production of toxic transgenes – returning titre to marker gene levels

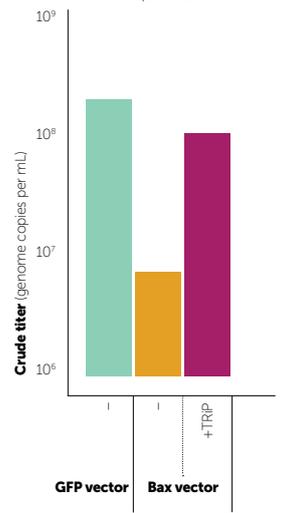
TRiPLenti
DNA integrating Unit/mL



TRiPAдено
Genome copies/mL



TRiPAAV
Genome copies/mL



Licensing Terms

Licences to use TRiP for all key vector platforms are available

Intellectual Property

WO 2015/092440 (filed in CN, EP, IN, JP, KR and US) and extensive know-how

Publications

Maunder et al. (2017) Nat Communications 8:14834

Farley (2018) Cell Gene Therapy Insights 2018; 4(10), 983-994

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