

TcBuster™ Transposon pUC57 MCS AmpR

Product Description

Gene	N/A; MCS provided
Promoter	N/A
Transposon Insert Size	N/A
Resistance Gene	Ampicillin
Plasmid size	3704 bp
Backbone	pUC57
Concentration	100 µg at 2 mg/mL
Plasmid Map	See product page for Plasmid Map file

Preparation and Storage

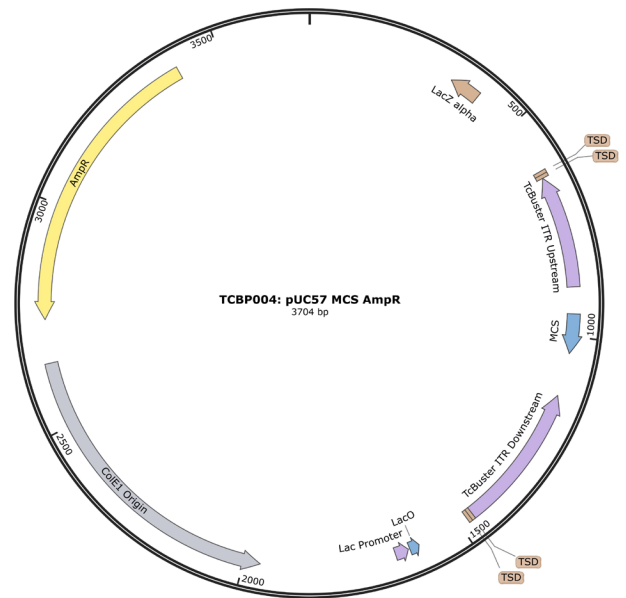
Formulation	Nuclease free water
Shipping	This product ships at ≤ -20 °C. Upon receipt, store it immediately at the recommended temperature
Storage	Store at ≤ -20 °C. Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

Limitations

- For laboratory research use only. Not for use in diagnostic procedures.

Required Reagents and Equipment

- Electroporation platform of user's choice
- TcBuster-M™ Transposase mRNA,
Catalog # [TCB-001.1-100](#) or [TCB-001.1-500](#)

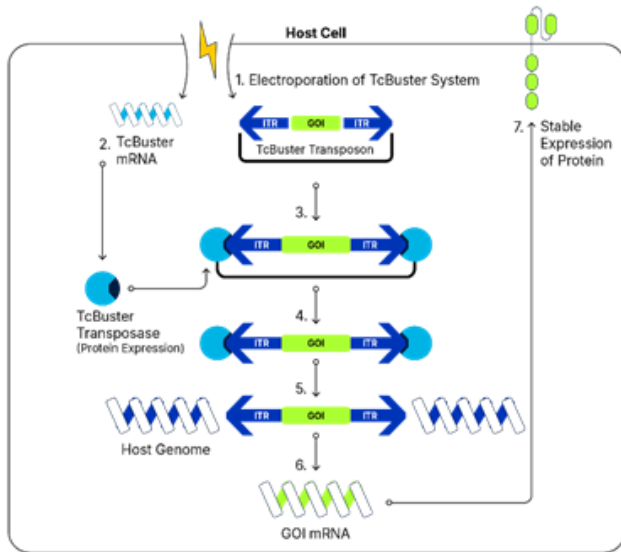


Intended Use

TcBuster Transposon pUC57 MCS AmpR is one part of the TcBuster System and is compatible with TcBuster transposases. Ensure that you have TcBuster-M mRNA (Catalog #: [TCB-001.1-100](#), [TCB-001.1-500](#)) prior to using this product. It is intended for the end user to clone their sequence of interest at the multiple cloning site (MCS). See the product page for more information. It is highly recommended to deliver TcBuster system reagents (transposase mRNA and compatible DNA transposon) with an electroporation platform. The TcBuster system is a versatile genome editing tool and has applications in a wide variety of cell types. Examples include, but are not limited to, the transposition of immune cells (T, NK), induced pluripotent stem cells (iPSCs), and bioproduction cell lines (CHO, HEK, etc.). Broad application will require independent experimental optimization and/or process development. If you have any technical questions about the TcBuster non-viral gene delivery system, contact our scientific support team at techsupport@bio-techne.com for assistance.

FIGURE // 01

The TcBuster™ System Mechanistic Diagram



1. TcBuster system reagents are introduced into the cells via electroporation.
2. TcBuster-M mRNA is translated into TcBuster-M transposase enzyme.
3. TcBuster-M transposase binds to inverted terminal repeats (ITRs) on the TcBuster DNA transposon.
4. TcBuster-M transposase cuts gene(s) of interest (GOI) from transposon.
5. TcBuster-M inserts GOI into the host genome.
6. Inserted GOI is transcribed into mRNA.
7. Translated GOI protein is stably expressed in cells.

Background

The TcBuster system is a non-viral gene delivery system that enables stable gene transfer in most cell types. The TcBuster System belongs to the hAT-family of DNA transposons and is derived from the red flour beetle *Tribolium castaneum* (1). The system consists of the TcBuster-M transposase mRNA, which encodes for a hyperactive version of TcBuster transposase, and DNA transposon encoding multicistronic cargos for gene insertion (2). Figure 1 shows a mechanistic diagram of how the TcBuster system introduces genetic material into cells. MCS is a short region of DNA containing a wide variety of restriction sites for cloning purposes. AmpR is an ampicillin resistance gene, commonly used for antibiotic selection.

Product Specific Notes

Transfer of TcBuster Transposon pUC57 MCS AmpR ("Product") is strictly prohibited. The Product is to be used for research use only, and not for clinical or commercial purposes. The Product is the wholly owned intellectual property of Bio-Techne™ and unauthorized parties do not have the right to make or have made the Product, or any portion thereof. Full details of R&D Systems' Terms and Conditions of sale can be found online at: <https://www.bio-techne.com/terms-and-conditions>.

REFERENCES

1. Woodard, L.E et al. (2012) PLOS One DOI: 10.1371/journal.pone.0042666
2. Skeate, J.G et al (2024) Molecular Therapy DOI: 10.1016/j.ymthe.2024.04.024