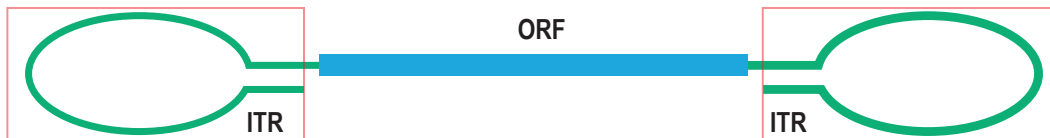


Enjoy Superior AAV Plasmid Expression with GenScript's New and Improved AAV ITR Guarantee Technology

What are ITRs?

- Inverted terminal repeat (ITR): key element of an Adeno-associated virus (AAV) plasmid that is essential for the integrity of AAV transfer plasmid.
- Each AAV plasmid has 2 ITR sequences (145 bases each) at each end flanking the transgene, forming a palindromic hairpin structure that is high in GC content and unstable.
- This results in partial loss during plasmid propagation, with complete loss of ITR sequences abolishing AAV packaging, greatly reducing AAV vector production to suboptimum levels.



GenScript's Solution

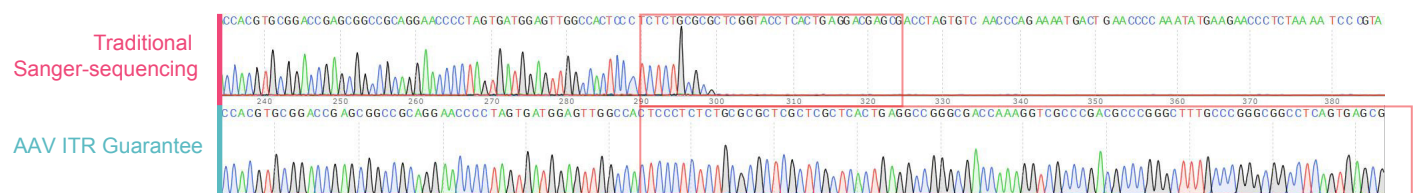
Traditional solutions to prevent ITR loss are imperfect and does not promise conserved ITR integrity. To overcome this issue, GenScript developed a Sanger-dependent ITR specific guarantee kit that can sequence through the whole ITRs to determine its integrity with good signal.

Why AAV ITR Guarantee?

GenScript's proprietary AAV ITR Guarantee technology



Regular sanger sequencing typically fails to sequence through ITR due to its high GC content, resulting in termination of sequencing reaction and subsequent incomplete sequencing. **GenScript's proprietary AAV ITR Guarantee technology can easily read through ITR with clean peaks.**

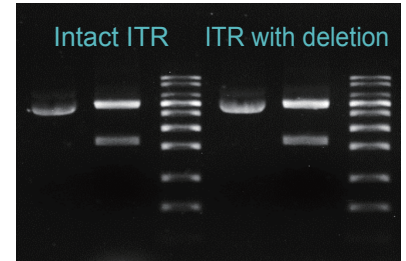


Small digestion does not always tell the truth

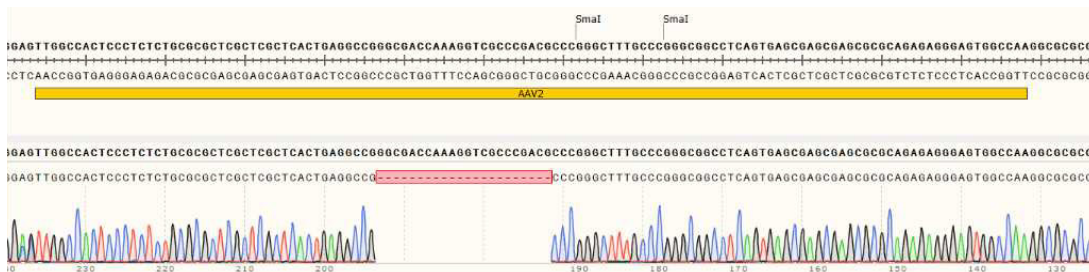


Restriction analysis using enzymes like *SmaI* can be used as a rapid screen to detect ITR loss during cloning experiments. However, traditional *SmaI* digestion does not always detect deletion in ITRs as small deletions within ITRs that don't affect recognition sequences can't be detected with these enzymes. Highlighting a significant need for stringent ITR sequencing.

Expected digestion band size	Band size on agarose gel	Mutations detected by AAV ITR Guarantee
2.6 kb double band	2.6 kb double band	15 bp deletions
5.2 kb + 1.1 kb	5.2 kb + 1.1 kb	240 bp insertion
4.5 kb + 2.8 kb	4.5 kb + 2.8 kb	point mutation, 21 bp deletion
4.9 kb + 2.2 kb	4.9 kb + 2.2 kb	22 bp deletion
4.7 kb + 2.0 kb	4.7 kb + 2.0 kb	3 bp mutation, 22 bp deletion



Agarose gel does not show deletion in ITR

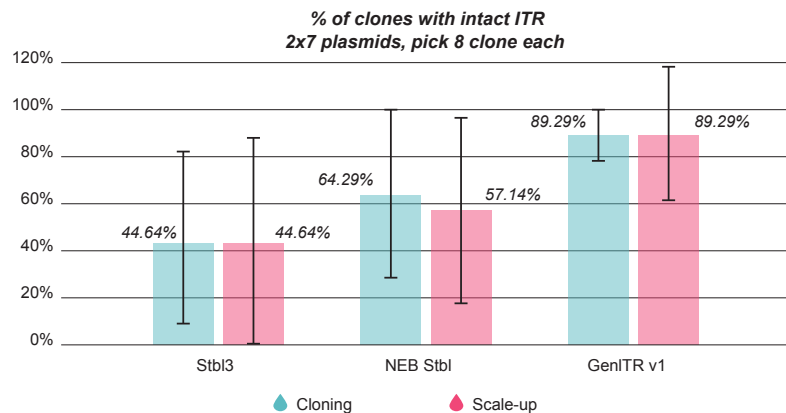


GenScript's proprietary strain out-performs commercial strains



Recombination-deficient commercial strains like NEBStbl, JC8111, SURE2, Stbl3, XL10-Gold are frequently used for AAV construct amplifications, but are not always effective.

GenScript has developed a proprietary strain, GenITRv1, that has demonstrated improved ITR integrity.



Interested in the new service? Speak to a Ph.D. level specialist today!



Email us at
gene@genscript.com



Give us a call at
1-877-436-7274 (Toll-Free) 1-732-885-9188