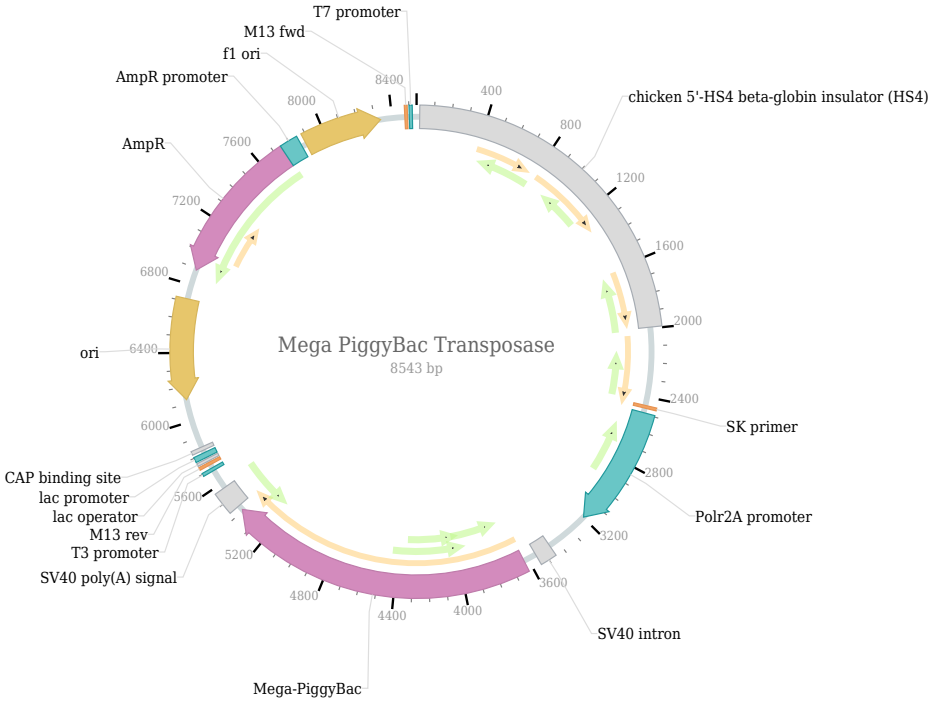
Mega PiggyBac Transposase

Vector ID	V018124
Antibiotic Resistance	Ampicillin
Length	8543 bp
Vector Type	PiggyBac

Product Information

Copy Number	High copy number
Promoter	rPolr2A
Growth Strain(s)	Top10
Growth Temperature	37℃
Comment	Mega-PiggyBac is a hyperactive synthetic variant of the PiggyBac transposase, engineered through fine-tuning the ProGen2 protein language model (pLLM) using over 13,000 bioprospected PiggyBac sequences. Derived from targeted optimization of the laboratory-evolved hyperactive PiggyBac (HyPB), it stands out for its superior transposition efficiency—exhibiting both significantly higher excision activity and nontargeted integration activity compared to HyPB in HEK293T cells. Notably, Mega-PiggyBac (designated as seq3277) demonstrates excellent compatibility with advanced genome-editing systems, such as the FiCAT targeted integration platform, enabling a twofold improvement in site-specific insertion at loci like AAVS1-3, TTR, and PCSK9. Its robust performance extends to critical therapeutic contexts, including functional activity in primary T cells, making it a promising tool for gene therapy and synthetic biology applications that require efficient and precise large DNA fragment integration. This plasmid shares the same backbone as the Super PiggyBac Transposase vector (V012800).

Vector Map



Plasmid Resuspension Protocol

1. Centrifuge at 5,000×g for 5 min.
2. Carefully open the tube and add sterile water to dissolve the DNA: add 20 µl for 5 µg plasmid, and 100 µl for 100 µg plasmid.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin to concentrate the liquid at the bottom. Speed is less than 5000×g.
5. Store the plasmid at -20 ℃.