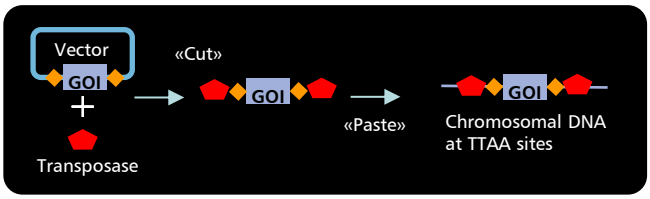
PIGGYBAC

Targeted Generation of Transgenic Animals

Single-copy transgenic rodents with the piggyBac approach.

Background

The piggyBac transposon is a mobile genetic element that efficiently transposes between vectors and chromosomes via a "cut and paste" mechanism. The powerful activity of the piggyBac transposon system enables transgenes to be easily mobilized into target genomes. This technology generates single-copy insertions and is the method of choice for generating BAC-based transgenic animals.



The piggyBac transposase (●)recognizes specific inverted terminal repeat sequences (◆) located on both ends of the transposon vector and efficiently tranfers the contents (GOI, Gene Of Interest) from the original sites into TTAA chromosomal sites.

Advantages over other Transgenic Approaches

- piggyBac transgenics represent **single-copy transgenic mice** without the vector backbone, avoiding cross-interference seen in multiple-copy transgenes, and gene silencing initiated from vector backbone signals.
- This copy is untruncated since **only the full copy of the GOI is inserted**.
- Transgene Transmission to the next generation is **very efficient**.
- Transgenic efficiency with piggyBAC is around **2-fold higher than conventional BAC pronuclear injections**.

Price and Time Lines

Service	Duration	Deliverables	List Price
piggyBac Generation	2 months	modified BAC	12'000 €
BAC Injections	2-3 months	Verified Founders	16'000 €