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(54) Title: **PIGGYBAC AS A TOOL FOR GENETIC MANIPULATION AND ANALYSIS IN VERTEBRATES**

(57) Abstract: The present invention relates to transgenic vertebrate, including mammalian, cells, whose genomes comprise one or more elements of the *piggyBac* family transposon system. Transgenic non-human vertebrates, including transgenic non-human mammals, whose genomes comprise one or more elements of the *piggyBac* family transposon system, are also provided. Methods of making and using the cells and animals of the invention, including applications in the medical, veterinary, and agricultural fields, are additionally provided. The present invention also relates to kits useful for practicing such methods.



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