ABM Inc. iPSC Minicircle DNA

The minicircle DNA (mc-DNA) is an independent mammalian expression cassette void of any bacterial DNA element required for plasmid production. Because of this, the expression cassette has been shown to have an extended life span with higher and longer expression levels of over 3 weeks in different cells studied (Chen, *et al.*, 2003). In the end, the non-integrating mc-DNA gets degraded and loses the expression of target gene. Thus it is ideal for the application of iPSCs due to its higher efficiency than iPSC proteins and the non-integrating nature as compared to lentiviral vectors.

As mc-DNA is a good choice for iPSC induction, competitors now offer similar products with CMV promoter which is of viral origin and is the target for methylation. The methlylation of CMV promoter is often the reason leading to gene silencing. Thus, mc-DNAs with CMV promoter will significantly compromise efficacy of iPSC induction. The ideal choice for mc-DNA iPSC factors is a xeno-free DNA with promoters of human or mouse origin. Promoters like EF1α should therefore be the choice, which has proven to be the choice of promoter for iPSC applications in lentiviral vectors.

In addition to minicircle DNA with CMV promoter, ABM is the only company that offers minicircle DNA with an EF1α promoter, which is the only truly xeno-free plasmid without any sequence of bacterial or viral origin. The minicircle DNA requires only a simple transfection and transgene expression can be easily monitored with GFP.

iPSC Minicircle DNA map

Ordering Information

Product Name	Catalog No.	Description	Packaging Size
iPSC Minicircle (**Human** – **EF1α** Promoter)	G388	Minicircle DNA – hYamanaka (OSKM)	100µg
	G389	Minicircle DNA – hThomson (OSNL)	100µg
iPSC Minicircle (**Human** – **CMV** Promoter)	G392	Minicircle DNA – hYamanaka (OSKM)	100µg
	G393	Minicircle DNA – hThomson (OSNL)	100µg
iPSC Minicircle (**Mouse** – **EF1α** Promoter)	G390	Minicircle DNA – mYamanaka (OSKM)	100µg
	G391	Minicircle DNA – mThomson (OSNL)	100µg
iPSC Minicircle (**Mouse** – **CMV** Promoter)	G394	Minicircle DNA – mYamanaka (OSKM)	100µg
	G395	Minicircle DNA – mThomson (OSNL)	100µg

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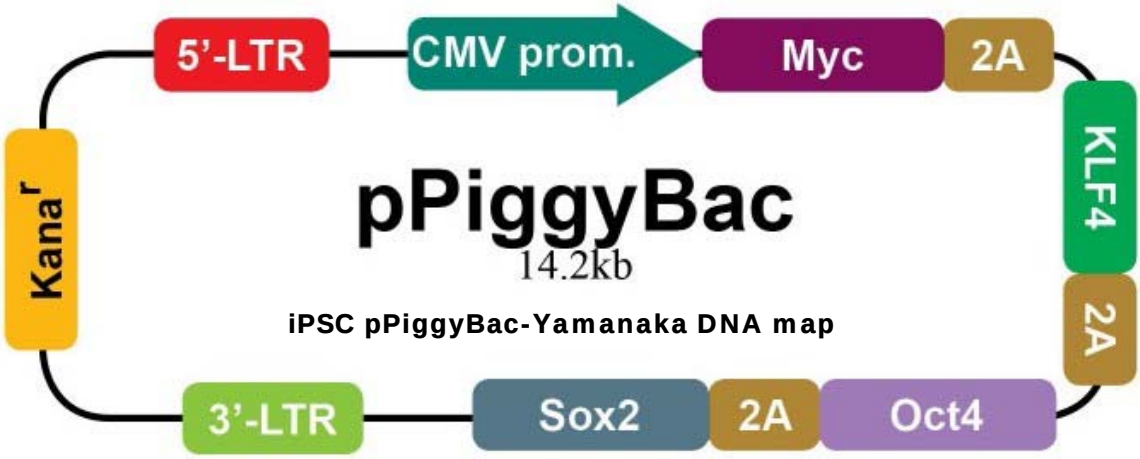
ABM Inc. iPSC Plasmids

Both oriP/EBNA1 (Epstein-Barr nuclear antigen-1)-based episomal vectors and piggyBac transposon-based iPSC factors have been shown to effectively in the generation of vector-free iPSCs. The oriP/EBNA1 method only involves a simple transfection and drug selection, the piggyBac technique requires multiple genetic manipulations of transposons to remove the iPSC factors.

iPSC pOriP/EBNA1 DNA map



iPSC pPiggyBac-Yamanaka DNA map

Ordering Information

Product Name	Catalog No.	Description	Packaging Size
iPSC oriP/EBNA1 Plasmid (**CMV**, **SV40**, **EF1α** & **UbC** promoters)	G500	Plasmid DNA – All 6 genes (OSKMNL)	10µg
iPSC PiggyBac Plasmid (**human** – **CMV** promoter)	G501	Plasmid DNA – hYamanaka (OSKM)	10µg

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