Cat # SL100501 Store 4 °C

PepJet™ DNA In Vivo Transfection Reagent

----- A Protocol for In Vivo Transfection

- ☐ 100 µl
- ☐ 500 µl
- ☐ 1000 µl

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This product is for laboratory research ONLY and not for diagnostic use

PepJet™ DNA In Vivo Tranfection Reagent is a novel cationic peptide based DNA delivery tool. This 28 amino-acids long peptide is accidentlly identified as a strong vector in delivering DNA *In Vivo*. With help of protein alignment and simulation software, the peptide was synthesized, refined, screened and validated by simulating a virus protein. A shield peptide was also linked to the backbone to prevent In Vivo environment interferences, leading to high *In Vivo* transfection efficiency. PepJet™ was confirmed to give best renilla luciferase expression in lung, liver, spleen and kidney.

Reagent Required NOT Supplied with PepJet™ DNA *In Vivo* Transfection Reagent:

A sterile isotonic 10% glucose (w/v) solution (in water).

Note: Formation of small and stable PepJet™/DNA complexes is only possible in the absence of high salt concentrations. Ionic solutions such as PBS or cell culture media are thus prohibited. A sterile isotonic 10% glucose (w/v) solution is strongly recommended to dilute PepJet™ and DNA in order to obtain a final concentration of 5% glucose.

Brief Procedures for In Vivo Transfecting Mice:

The following protocol is given for intravenous injection via the mice tail vein of 50 µg of DNA condensed with PepJet™ and a final total volume of injection of 400 µl. To prevent precipitation of PepJet™ / DNA complexes, the final concentration of DNA in the total volume should not exceed 0.5 µg/µl.

- Dilute 50 µg of DNA into 100 µl of 10% glucose water solution and adjust the volume to 200 µl with pure sterile water in order to obtain a final concentration of 5% glucose. Vortex gently and spin down briefly.

  Note: The amount of DNA as well as the injection volume should be adapted to the size of the animal and to the route of administration. Keep the optimal ratio of PepJet™ (µL) :DNA (µg) as 2:1 and adjust PepJet ™ reagent volume per DNA amount. Suggested amounts of DNA to be injected for a mouse are given in **Table 1**.

- Dilute 100 µl of PepJet™ in 100 µl of glucose 10% solution to obtain a final concentration of 5% glucose. Vortex gently and spin down briefly.
- Add the 200 µl PepJet™ solution to the 200 µl DNA solution immediately all at once

  Note: do not mix the solution in the reverse order.
- Vortex-mix the solution immediately and spin down briefly just to ensure that no liquid remains on the sides of the tube.
- Incubate for 10 minutes at room temperature.

  Note: Never keep the PepJet™/DNA complex at room temperature longer than 15 minutes.
- Inject animals immediately.
- Monitor transgene expression after the desired time period. Robust gene delivery and expression may require 12-48 h, depending on the mode of injection and the organ targeted.

Table 1. Suggested amounts of DNA according to the route of injection in mouse

Animal	Injection Site	DNA Amount Suggested	Injection Volume Suggested
Adult mouse	Tail vein	50 µg	200 ~ 400 µl
	Retroorbital	60 µg	200 µl
	Portal vein	100 µg	500 µl
	Intraperitoneal	100 µg	600 µl
	Brain ventricle	1 µg	5 µl
	Heart	50 µg	200 µl
	Lung instillation	50 µg	400 ~ 600 µl
	Subcutaneous tumor	20 µg	100 µl

Storage: PepJet™ DAN In Vitro Transfection Reagent is stable for up to 12 months at +4 °C. This item shipped at ambient temperature