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LIPID-based *In Vivo* Transfection Reagent (cat# 5010, 5011, 5012, 5013) *In Vivo* Transfection Protocol

Cat. No. 5010	Size: 0.5 ml
Cat. No. 5011	Size: 1.5 ml
Cat. No. 5012	Size: 8.0 ml
Cat. No. 5013	Size: 25 ml

Contents and Shipping:

LIPID-based *in vivo* transfection reagent is supplied in liquid form at a concentration of 2 mg/ml. Transfection Enhancer reagent is supplied in liquid form at a concentration of 1 mg/ml. Shipped at ambient temperature.

Description:

LIPID transfection reagent is a cationic lipid liposome-based formulation optimized for *in vivo* delivery of small RNA (siRNA, shRNA, microRNA) and plasmid DNA. LIPID *in vivo* transfection reagent is a proprietary, animal-origin-free formulation.

Storage:

Store reagent at 4°C upon receipt. If stored properly, reagent is stable for 6 months.

Product Qualification:

Reagents are tested for functional activity, absence of nuclease contamination and microbial contamination.

Reagent Properties:

Lipid conjugated complexes are stable in serum for at least 16 hours.

Efficient delivery to the liver, pancreas, kidney, and certain tumor types via systemic administration.

Efficient siRNA and plasmid DNA delivery via direct subcutaneous tumor injection (various tumor types).

Minimal toxicity.

Recommended Modes of Administration:

Tail vein systemic intravenous (i.v.) injection.

Direct intratumoral (i.t.) injection.

Intraperitoneal (i.p.) injection.

Intended Use:

For research use only. Not intended for any diagnostic or therapeutic use.

SDS:

SDS documents are available online at altogen.com

General Guidelines:

Handle animals and conduct experiments according to national regulations and approvals by the local IACUC and ethics committee. Please note that mouse tail vein injection may require skills, experience, and associated equipment (e.g. restraining device). All persons handling animals should be properly trained.

Guidelines for Small RNA (siRNA, shRNA, microRNA) Administration:

Prepare siRNA stock solution in DNase- and RNase-free water.

Recommended dose of siRNA (per injection):

100-150 µg siRNA with chemical modification (resistant to nuclease degradation *in vivo*), or
300-400 µg standard, non-modified siRNA, or
40-50 µg of plasmid DNA

Recommended Protocol for Systemic (iv) Administration (for 1 injection):

1. Dilute 50 µg of plasmid DNA and/or 150 µg of siRNA in 115 µl RNase-/DNase-free water. Vortex gently.
2. Add 115 µl of diluted DNA (and/or siRNA) to the sterile tube containing 25 µl Transfection Reagent.
3. Incubate for 15-20 minutes at room temperature.
4. Add 10 µl of Transfection Enhancer Reagent. Vortex gently.
5. Incubate for 1-2 minutes at room temperature.
6. Add required amount of sterile solution of 5% glucose (w/v):

Animal body weight	Transfection reagent per injection	Final injection volume (ml)
10-20 g	25 µl	0.2
20-50 g	35 µl	0.3
50-100 g	50 µl	0.4
100-150 g	100 µl	0.5
150-300 g	150 µl	0.6

7. Inject animals. Please note that delivery efficiency can be significantly increased by performing secondary injection (within 12-24 hours after first injection).
8. Assay for target gene expression. Maximum mRNA expression effect is typically observed 12-36 hours after injection, while maximum effect on protein level is achieved 36-72 hours post-injection.

Certificate of Analysis:

Transfection reagent was tested *in vivo* and passed QC. Transfection reagent was tested for absence of nuclease contamination and microbial contamination. Rev. May 1, 2025.

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