



Altogen Biosystems

11200 Menchaca Rd, Ste 203

Austin, TX 78748 USA

Tel. (702) 349-6103

E-mail: techserv@altogen.com

Web: altogen.com

Liver *In Vivo* Transfection Reagent (cat# 5060, 5061, 5062, 5063) *In Vivo* Transfection Protocol

Cat. No. 5060	Size: 0.5 ml
Cat. No. 5061	Size: 1.5 ml
Cat. No. 5062	Size: 8.0 ml
Cat. No. 5063	Size: 25 ml

Contents and Shipping:

Liver *in vivo* transfection reagent is supplied in liquid form at a concentration of 1.5 mg/ml. Shipped at ambient temperature. Transfection Enhancer reagent is supplied in liquid form at a concentration of 1 mg/ml.

Description:

Liver transfection reagent is a liposome lipid-based formulation optimized for *in vivo* administration with targeted liver delivery. Liver *in vivo* transfection reagent is a proprietary, animal-origin-free formulation with high transfection efficiency of small RNA (siRNA, shRNA, microRNA) and plasmid DNA.

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 tissue and liver tumors via systemic administration.
Efficient siRNA and plasmid DNA delivery via direct intratumoral injection.
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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