

PRODUCT INFORMATION



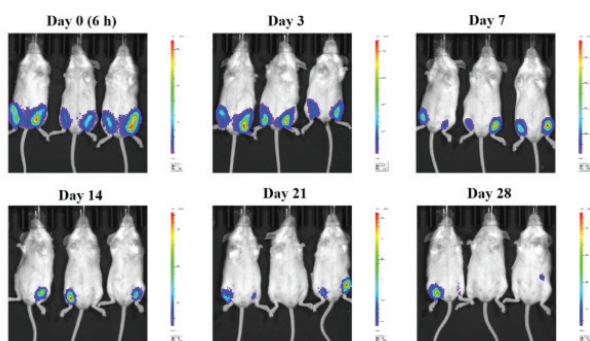
Firefly Luciferase saRNA (Cap-1)

Item No. 45066

Overview and Properties

Synonyms:	FLuc Self-amplifying RNA
Storage:	-80°C (as supplied)
Stability:	≥1 year
Supplied in:	A liquid
Storage buffer:	RNase-free water
Concentration:	1 mg/ml
Ex./Em. Max:	560 nm

Image



In vivo imaging at different time points after FLuc saRNA-LNPs were injected (i.m.) in mice.

Description

Firefly luciferase (FLuc) self-amplifying RNA (saRNA) (Cap-1) encodes firefly luciferase, a protein originally isolated from the firefly *P. pyralis*, that catalyzes the ATP-dependent oxidation of the molecule luciferin (D-luciferin; Item Nos. 25836 | 14682 | 14681) resulting in chemiluminescence at a wavelength of approximately 560 nm.^{1,2} It is capped with the Cap-1 structure to increase translation efficiency. FLuc saRNA (Cap-1) is based on the self-replicating Venezuelan equine encephalitis virus (VEEV), which results in stable expression of FLuc. It can be used as a control for the delivery and translation efficiency of RNA. Encapsulation of FLuc saRNA in lipid nanoparticles (LNPs) has been used for saRNA delivery and expression of FLuc in animal models.³

References

1. Baldwin, T.O. Firefly luciferase: The structure is known, but the mystery remains. *Structure* **4**(3), 223-228 (1996).
2. Zhang, G., Gurtu, V. and Kain, S.R. An enhanced green fluorescent protein allows sensitive detection of gene transfer in mammalian cells. *Biochem. Biophys. Res. Commun.* **227**(3), 707-711 (1996).
3. Sun, Z., Liu, Y., Zhang, H., et al. A novel alphavirus-based saRNA platform for enhanced vaccination efficacy and organ-specific targeting. *Vaccine* **72**, 128055 (2026).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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