

# PRODUCT INFORMATION



## Firefly Luciferase mRNA (Cap-1; m1Ψ)

Item No. 43677

### Overview and Properties

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<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	≥6 months
<b>Supplied in:</b>	1 mM Sodium citrate, pH 6.4
<b>Protein</b>	
<b>Concentration:</b>	1 mg/ml
<b>Em. Max:</b>	~560 nm

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Description

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Firefly luciferase mRNA (Cap-1; m1Ψ) encodes luciferase, a protein originally isolated from the firefly *P. pyralis*, that catalyzes the ATP-dependent oxidation of the molecule luciferin resulting in chemiluminescence at a wavelength of approximately 560 nm.<sup>1,2</sup> It is capped using a co-transcriptional capping method, resulting in the naturally occurring Cap-1 structure with high capping efficiency. Firefly luciferase mRNA is also polyadenylated and modified with N<sup>1</sup>-methylpseudouridine (m1Ψ) to reduce the host cell immune response and enhance mRNA stability. Encapsulation of firefly luciferase mRNA (Cap-1; m1Ψ) in lipid nanoparticles (LNPs) can be used for mRNA delivery and expression of luciferase.

### References

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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).

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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CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM