PRODUCT INFORMATION

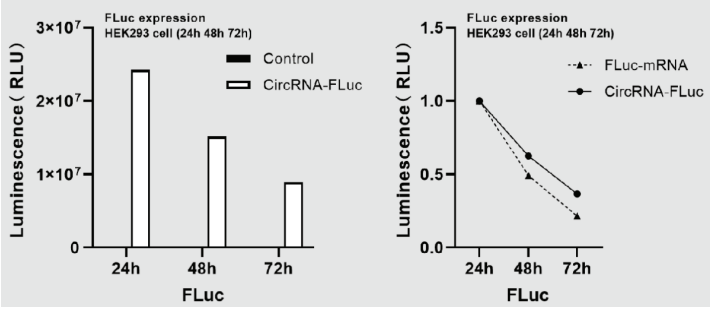
Firefly Luciferase circRNA

Item No. 45064

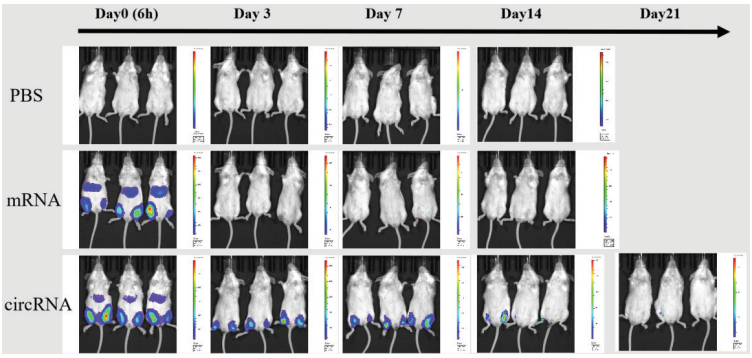
Overview and Properties

Synonyms: FLuc Circular RNA
Storage: -80°C (as supplied)
Stability: ≥1 year
Supplied as: A liquid
Concentration: 1 mg/ml
Em. Max: 560 nm

Images



50 ng circRNA-FLuc was transfected into 2 x 10^5 HEK293 cells with Lipo3000. HEK293 cells were collected and split 24, 48, and 72 hours later. Fluorescein substrate was added to detect luminescence intensity. The reduction rate of circRNA-FLuc expression was lower than that of linear FLuc mRNA.



In vivo imaging at different time points after FLuc mRNA-LNPs or FLuc circRNA-LNPs were injected (IM) in mice.

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Description

Firefly luciferase (FLuc) circular RNA (circRNA) 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] Exogenous circRNAs have increased stability and can produce sustained protein expression compared to mRNA.[2] Firefly luciferase circRNA has been used as a reporter for the delivery of circRNA *via* lipid nanoparticles (LNPs).[3]

References

1. Baldwin, T.O. Firefly luciferase: The structure is known, but the mystery remains. *Structure* **4(3),** 223-228 (1996).
2. Wesselhoeft, R.A., Kowalski, P.S., and Anderson, D.G. Engineering circular RNA for potent and stable translation in eukaryotic cells. *Nat. Commun.* **9(1),** 2629 (2018).
3. Alshehry, Y., Liu, X., Zhang, Y., *et al.* Investigation of the impact of lipid nanoparticle compositions on the delivery and T cell response of circRNA vaccine. *J. Control Release* **381,** 113617 (2025).

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