

PRODUCT INFORMATION



LipidLaunch™ SM-102 LNP (naked mole-rat cGAS)

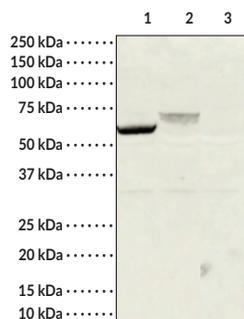
Item No. 44929

Overview and Properties

Storage: -80°C (as supplied)
Stability: ≥9 months
Supplied in: TBS, pH 7.5, with 10% sucrose

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

Images



Lane 1: Human cGAS cell lysate (20 µg)
Lane 2: Naked mole-rat cGAS cell lysate (20 µg)
Lane 3: Non-transfected cell lysate control (20 µg)

Western blot of A549 cells transfected with 250 ng/ml of LipidLaunch™ SM-102 LNP (naked mole-rat cGAS). Western blot analysis was performed on 20 µg of cell lysates using Cayman's His-Tag Recombinant Monoclonal Antibody - HRP Conjugated (Item No. 35511).

LNP Characterization Parameters	
Size	75-150 nm
Polydispersity index (PDI)	<0.25
Encapsulation efficiency (%EE)	>85%
mRNA concentration	Batch specific
mRNA/vial	5 µg

Description

LipidLaunch™ SM-102 LNP (naked mole-rat cGAS) is a solution containing lipid nanoparticles (LNPs) composed of the ionizable cationic aminolipid SM-102 (Item No. 33474), cholesterol (Item No. 9003100), 1,2-distearoyl-*sn*-glycero-3-PC (1,2-DSPC; Item No. 15100), and the lipid excipient DMG-PEG(2000) (Item No. 33945) at a molar ratio of 50:38.5:10:1.5 and encapsulating mRNA encoding His-tagged naked mole-rat cyclic GMP-AMP (cGAMP) synthase (cGAS), a nucleotidyltransferase involved in the innate immune response.^{1,2} It is intended for overexpression of His-tagged naked mole-rat cGAS *in vitro* and can be used in a variety of model cell lines. Administration of a recombinant adeno-associated viral (AAV) vector encoding naked mole-rat cGAS increases lifespan in *Drosophila* and decreases frailty index and hair greying in mice.³

Suggested *in vitro* use: Thaw LNPs on ice with occasional gentle swirling (*do not vortex*). Using a gentle pipetting technique, dilute 1:100-1:500 in complete cell culture media (with serum) and add to subconfluent cells. Expression of His-tagged naked mole-rat cGAS may be detected between six and 48 hours after transfection. Optimal conditions are highly dependent on cell type.

References

1. Sun, L., Wu, J., Du, F., *et al.* Cyclic GMP-AMP synthase is a cytosolic DNA sensor that activates the type I interferon pathway. *Science* **339**(6121), 786-791 (2013).
2. Wu, J., Sun, L., Chen, X., *et al.* Cyclic GMP-AMP is an endogenous second messenger in innate immune signaling by cytosolic DNA. *Science* **339**(6121), 826-830 (2013).
3. Chen, Y., Chen, Z., Wang, H., *et al.* A cGAS-mediated mechanism in naked mole-rats potentiates DNA repair and delays aging. *Science* **390**(6769), eadp5056 (2025).

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.

WARRANTY AND LIMITATION OF REMEDY
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