

DC82115 | BAMP-TK-12

Instructions for Use

BAMP-TK-12 is a ROS-responsive ionizable lipid designed for tumor-cell mRNA delivery. It features a bis(aminopropyl)piperazine-derived ionizable headgroup and four C12 tails connected through cleavable thioketal linkers. In the reported study, BAMP-TK-12 achieved RFP expression in up to 95% of HeLa cells, comparable to Lipofectamine 3000, with lower cytotoxicity under the tested conditions. ROS-triggered linker cleavage supported intracellular mRNA release in high-ROS tumor cells. When formulated with DUF5 mRNA, the LNP suppressed tumor growth in HCT-116 and A549 xenograft models, supporting its use as a promising preclinical research lipid for stimulus-responsive mRNA delivery.

Product information

CAS No.	Not available
Chemical Name	BAMP-TK-12
Formula	C76H150O9N4S6
M.Wt	1,456.41
Purity	>98%
Storage	Original product: up to 1 year under the storage conditions stated on the vial, kept tightly sealed. Stock solutions: aliquots at -20°C, generally up to one month.
Shipping condition	Ships from Shanghai. Pure lipid is stable during ice-pack transport.

Formulation & study context

Literature values apply to the cited study only. Administration routes describe research, not clinical instructions.

A complete product-specific formulation has not been verified. No standard ratio is substituted.

N/P ratio	Not reported in the verified record
Cargo	Not available in the verified record
Administration route	Not available in the verified record
Animal model	Not available in the verified record
Formulation process	Not available in the verified record

N/P is a nitrogen-to-phosphate molar ratio. Lipid:cargo mass ratio is a different quantity and must not be used as N/P.

Stock-solution preparation table

Calculated using product-page MW: 1456.41 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	6.866 mL	1.373 mL	0.687 mL
25 mg	17.165 mL	3.433 mL	1.717 mL
50 mg	34.331 mL	6.866 mL	3.433 mL
100 mg	68.662 mL	13.732 mL	6.866 mL
250 mg	171.655 mL	34.331 mL	17.165 mL

Volume (mL) = mass (mg) × 1000 / [MW (g/mol) × concentration (mM)]. Mathematical conversions only; not measured solubility. Confirm solvent compatibility and the exact material before preparation.

Handling & storage

Provided that storage conditions are as stated on the product vial and the vial is kept tightly sealed, the product can be stored for up to 1 year.

Wherever possible, prepare and use solutions on the same day. If stock solutions must be prepared in advance, store them as aliquots in tightly sealed vials at -20°C. Generally, these will be usable for up to one month.

Before use, and prior to opening the vial, allow the product to equilibrate to room temperature for at least 1 hour.

References

Weiqi Cai, Tianli Luo, Xianghan Chen, Lanqun Mao, and Ming Wang. "A Combinatorial Library of Biodegradable Lipid Nanoparticles Preferentially Deliver mRNA into Tumor Cells to Block Mutant RAS Signaling." *Advanced Functional Materials* 2022, 32, 2204947.