

DC67109 | Fluorescent SM-102 (NBD-SM-102)

Instructions for Use

Fluorescent SM-102 (NBD-SM-102) is a premium, dye-conjugated ionizable cationic lipid designed for advanced nanomedicine and mRNA delivery research. By covalently integrating a bright, green-fluorescent nitrobenzofurazan (NBD) probe into the industry-standard SM-102 skeleton, this high-purity reagent operates as an indispensable visual tracer. It empowers researchers to seamlessly track cellular uptake, monitor tissue biodistribution, and quantify endosomal escape efficiencies via fluorescence microscopy and flow cytometry. Crucially, this NBD-SM-102 derivative preserves the native ionizable property ($pK_a \approx 6.68$) and optimal membrane-fusion dynamics required for lipid nanoparticle (LNP) assembly and transfection, ensuring experimental formulations accurately mimic functional delivery vectors. This reliable reagent is ideal for accelerating lipid-mix optimization, high-throughput screening, and nucleic acid therapeutics development pipeline.

Product information

CAS No.	Not available
Chemical Name	Fluorescent SM-102 (NBD-SM-102)
Formula	C ₄₅ H ₇₉ N ₅ O ₈
M.Wt	828.15
Purity	ELSD-HPLC>95%
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: 828.15 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	12.075 mL	2.415 mL	1.208 mL
25 mg	30.188 mL	6.038 mL	3.019 mL
50 mg	60.376 mL	12.075 mL	6.038 mL
100 mg	120.751 mL	24.150 mL	12.075 mL
250 mg	301.878 mL	60.376 mL	30.188 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

Not available