

DC67983 | XH-07

Instructions for Use

XH-07 is an innovative ionizable cationic lipid that forms the backbone of the JCXH-211 lipid nanoparticle (LNP) delivery system. This complex is engineered to encapsulate and deliver self-replicating RNA (srRNA) encoding interleukin-12 (IL-12), a potent immunostimulatory cytokine. The LNP formulation featuring XH-07 exhibits optimal physicochemical properties, such as a mean particle size of approximately 82.12 nm with low polydispersity, and a near-neutral zeta potential around -3.181 mV, which facilitates stable circulation and efficient cellular uptake upon intravenous administration. Upon delivery, the srRNA leverages the host cell's machinery to produce sustained levels of IL-12p70, as demonstrated in B16F10 tumor-bearing mice, where a single dose led to peak cytokine production in sera and tumors. This induced IL-12 expression activates T cells and NK cells, generating a robust antitumor response. In murine models of melanoma and breast cancer, JCXH-211 monotherapy resulted in significant tumor regression and complete responses in some subjects, and it synergized with anti-PD-1 therapy to enhance efficacy. Importantly, the safety profile was acceptable, with transient liver enzyme elevations in mice that normalized quickly, and no significant adverse events in cynomolgus monkeys after repeated dosing, as evidenced by stable clinical observations and pathology tests. Thus, XH-07 is pivotal for enabling the safe and effective delivery of IL-12 encoding RNA, positioning JCXH-211 as a promising cancer immunotherapy.

Product information

CAS No.	Not available
Chemical Name	XH-07
Formula	C55H99O8N
M.Wt	902.40
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: 902.4 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	11.082 mL	2.216 mL	1.108 mL
25 mg	27.704 mL	5.541 mL	2.770 mL
50 mg	55.408 mL	11.082 mL	5.541 mL
100 mg	110.816 mL	22.163 mL	11.082 mL
250 mg	277.039 mL	55.408 mL	27.704 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