

DC67522 | AZD Lipid 17

Instructions for Use

Lipid 17 is a novel, highly potent ionizable lipid designed for mRNA delivery within lipid nanoparticles (LNPs) developed by AstraZeneca. Its structure features a secondary amine head group attached to a cyclic ether moiety (specifically, the 2-oxaspiro[3.3]heptan-6-amine head group). It possesses an asymmetric tail architecture: one tail is derived from heptadecan-9-ol (a branched C17 secondary alcohol), while the other tail is a modified nonyl chain (C9) with a key ethyl branch at the 3-position. The linker connecting the head group to the tails has a length equivalent to $n=3$ (three methylene units) as defined in the study. This specific combination of the secondary amine cyclic ether head group, asymmetric tails, and the ethyl branch at the 3-position of the nonyl chain proved critical for its exceptional performance. When formulated into LNPs and administered intravenously in mice, Lipid 17 demonstrated a remarkable 6-fold increase in functional protein (eGFP) expression in the liver compared to the benchmark lipid MC3, with high statistical significance ($P < 0.0001$). This makes Lipid 17 one of the most active lipids identified in the study and a promising candidate for liver-targeted mRNA therapeutics.

Product information

CAS No.	Not available
Chemical Name	AZD Lipid 17
Formula	C51H97NO5
M.Wt	804.34
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: 804.34 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	12.433 mL	2.487 mL	1.243 mL
25 mg	31.081 mL	6.216 mL	3.108 mL
50 mg	62.163 mL	12.433 mL	6.216 mL
100 mg	124.326 mL	24.865 mL	12.433 mL
250 mg	310.814 mL	62.163 mL	31.081 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