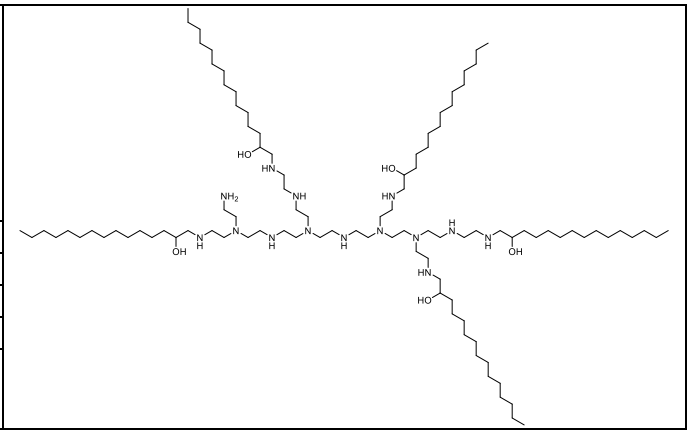
Product data sheet

MedKoo Cat#: 556071 Name: 7C1 polymer CAS#: Unknown Chemical Formula: Exact Mass: Molecular Weight: Elemental Analysis:	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

7C1 polymer is a novel ionazable lipid first reported by James E. Dahlman and Carmen Barnes et al. 7C1 polymer was made by the reaction of low-molecular-weight polyamine with lipid. 7C1 polymer can be positively charged, which efficiently binds siRNA to form nanoparticle. 7C1 polymer can deliver siRNA to endothelial cells with high efficiency, thereby facilitating the simultaneous silencing of multiple endothelial genes in vivo. Unlike lipid or lipid-like nanoparticles, this formulation does not significantly reduce gene expression in hepatocytes or immune cells even at the dosage necessary for endothelial gene silencing. These nanoparticles mediate the most durable non-liver silencing reported so far and facilitate the delivery of siRNAs that modify endothelial function in mouse models of vascular permeability, emphysema, primary tumour growth and metastasis.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	Infinity mL	Infinity mL	Infinity mL
5 mM	Infinity mL	Infinity mL	Infinity mL
10 mM	Infinity mL	Infinity mL	Infinity mL
50 mM	Infinity mL	Infinity mL	Infinity mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

TBD

In vivo study

1. Khan OF, Kowalski PS, Doloff JC, Tsosie JK, Bakthavatchalu V, Winn CB, Haupt J, Jamiel M, Langer R, Anderson DG. Endothelial siRNA delivery in nonhuman primates using ionizable low-molecular weight polymeric nanoparticles. Sci Adv. 2018 Jun 27;4(6):eaar8409. doi: 10.1126/sciadv.aar8409. PMID: 29963629; PMCID: PMC6021147.

7. Bioactivity

Biological target:

7C1 is a low-molecular weight, ionizable polymer that forms nanoparticles.

Product data sheet

In vitro activity

TBD

In vivo activity

To test the ability of 7C1 nanoparticles to achieve effective gene silencing in the endothelium, Tie2 was selected as the target gene because of its putative endothelial cell specificity. After confirming sequence homology of the Tie2 siRNA target site in mouse and nonhuman primate, the efficacy of the Tie2 siRNA formulated in 7C1 nanoparticles was first analyzed in a dose-response study in mice. he particle sizes measured by dynamic light scattering of the Tie2 and Luc control 7C1 siRNA nanoparticles were 86.8 ± 2.6 nm and 109.6 ± 2.6 nm, respectively.

Reference: Sci Adv. 2018 Jun 27;4(6):eaar8409. https://pubmed.ncbi.nlm.nih.gov/29963629/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.