TGX-1214 (RP-001) - A Nanoemulsion Formulation of a Novel Taxoid for Treating Pancreatic Adenocarcinoma

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CRS 2025 ANNUAL MEETING & EXPOSITION

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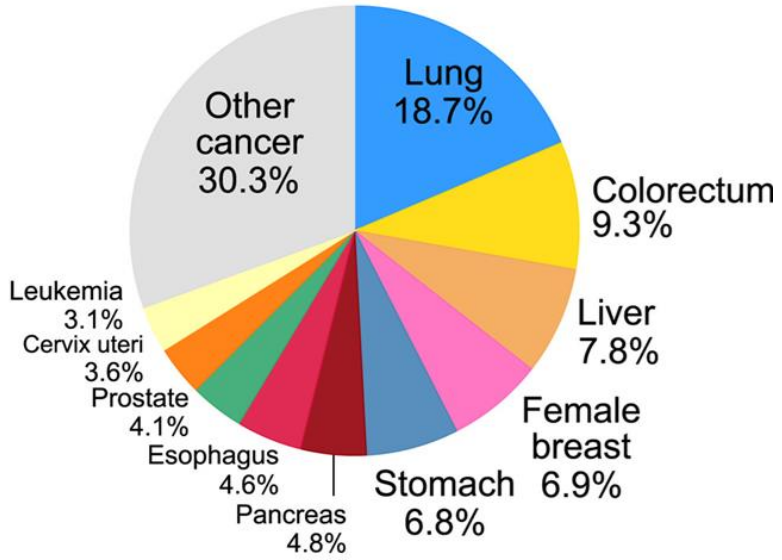
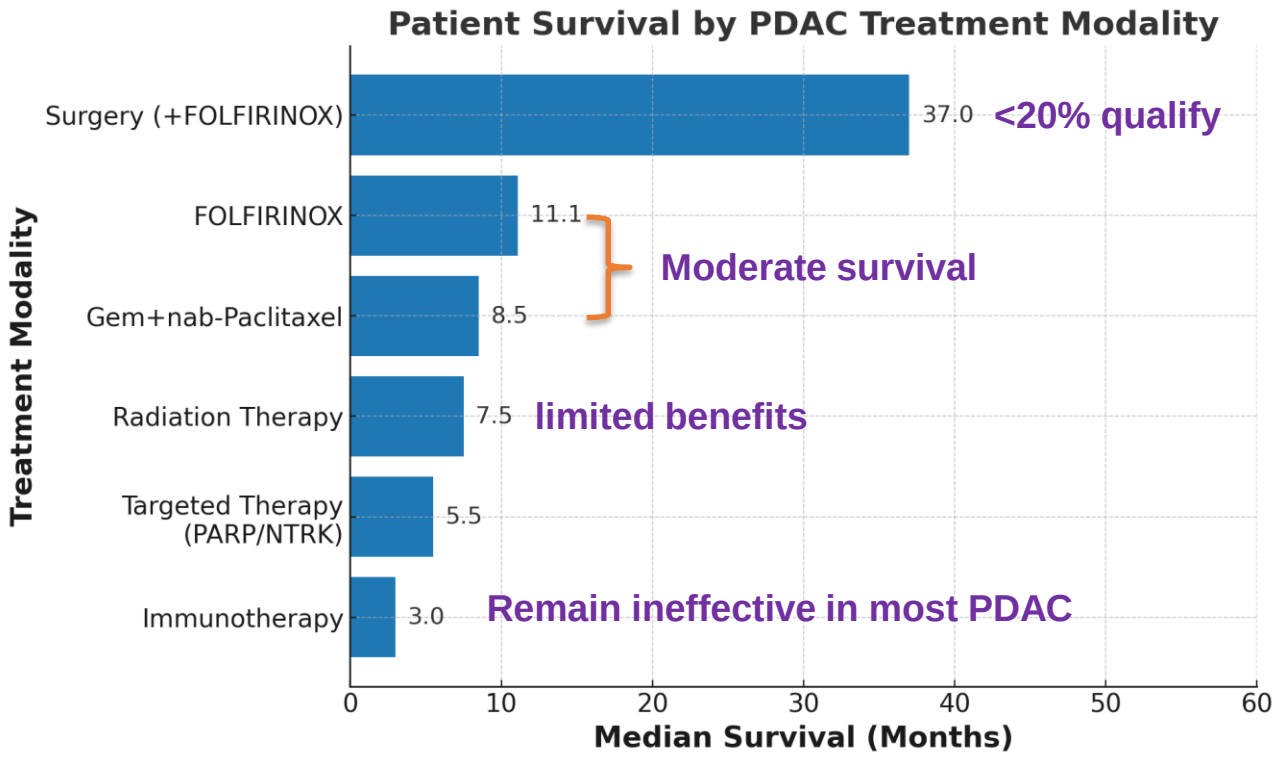
NEXT-GENERATION DELIVERY INNOVATIONS

Pancreatic Cancer

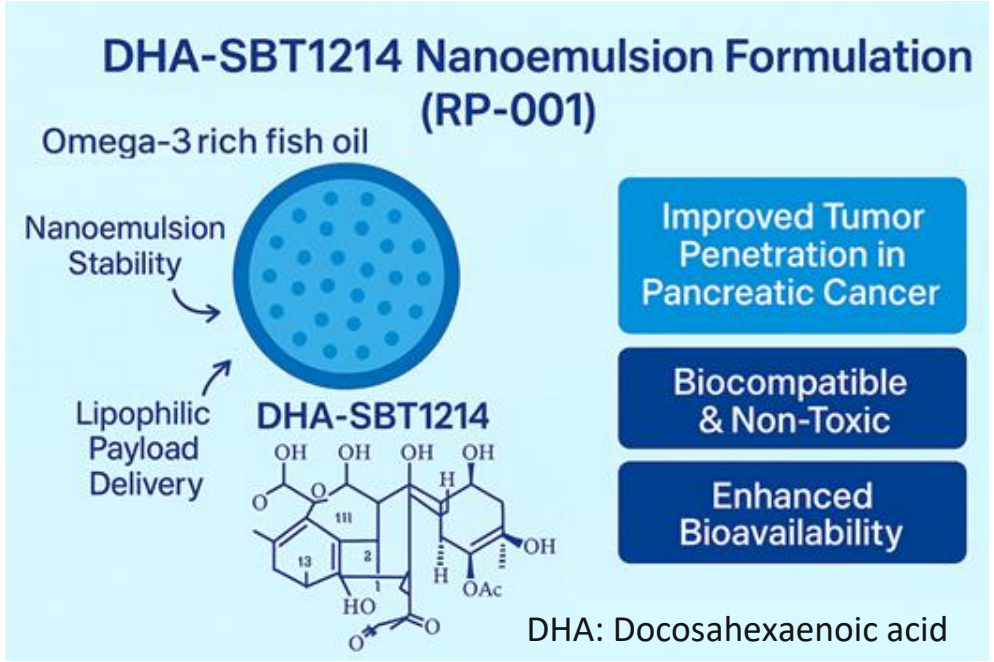
- 5% Global cancer mortality
- Pancreatic Adenocarcinoma (PDAC)
  - 90% of Pancreatic cancer
  - 67,440 new patient in 2025
  - 51,980 deaths reported
- Poor prognosis, 5-year survival <10%



Conventional Therapies: Where We Stand in 2025



Our Approach



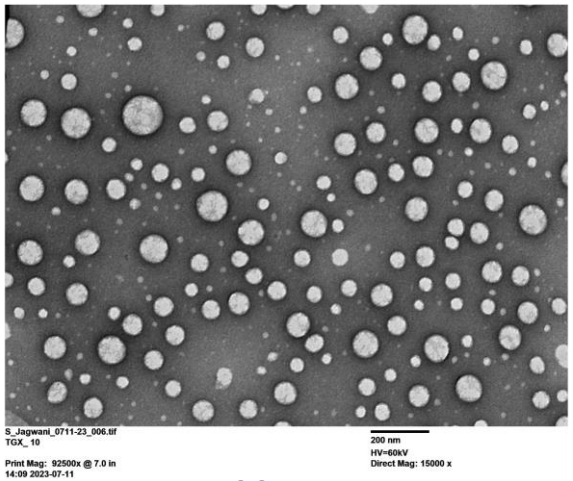
Bridging the Gap Between Conventional Limits and Emerging Innovation

Nanoemulsion Formulation of DHA-SBT1214

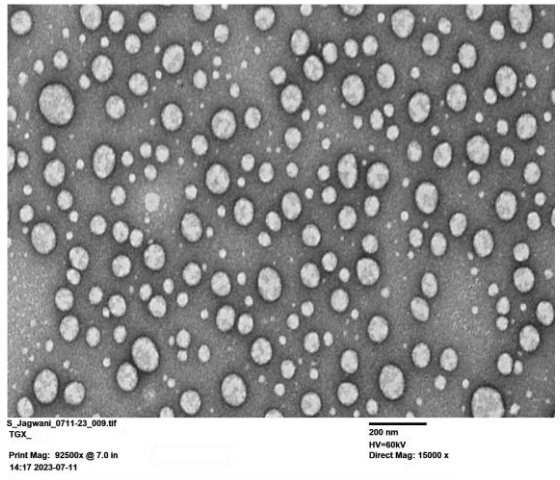
Method

Characterization

Formulations	Size (nm)	Zeta Potential (mV)	PDI
Drug loaded nanoemulsion (RP-001)	197.8 ± 70.7	-30.68 ± 9.3	0.126
Dye loaded nanoemulsion (NE-DiR)	238.0 ± 82.6	-30.2 ± 5.3	0.168

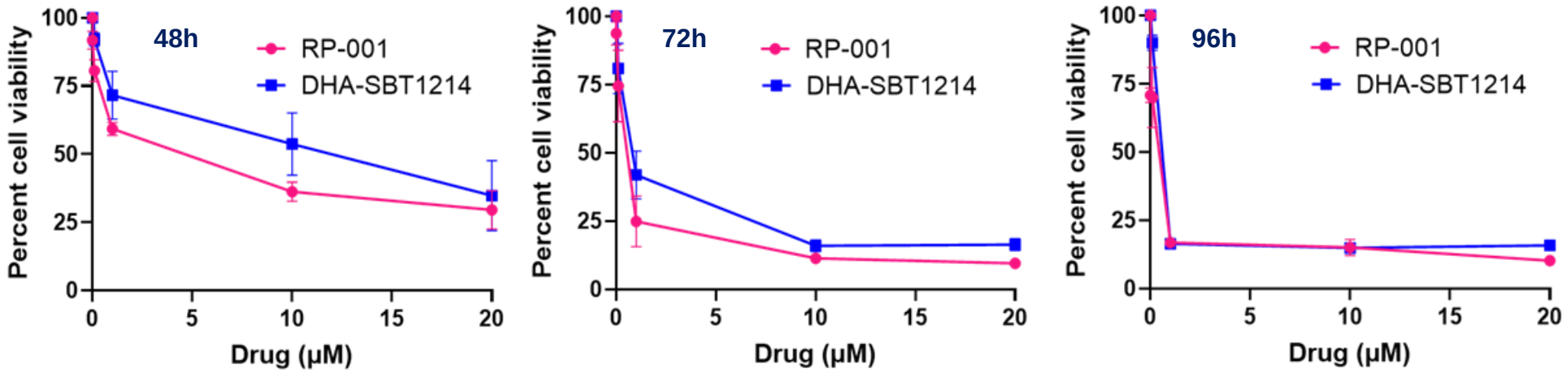


RP-001



NE-DiR

In vitro studies in Panc02 mouse pancreatic cancer cells demonstrated potent cytotoxicity of RP-001

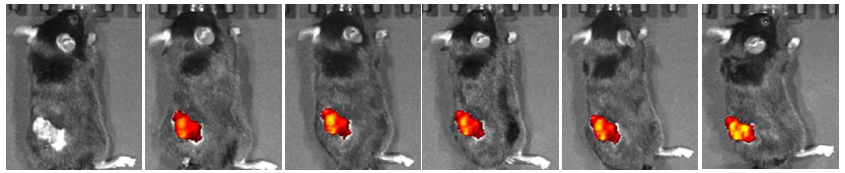


Drug	IC_{50} (μM) 48h	IC_{50} (μM) 72h	IC_{50} (μM) 96h
Drug Nanoemusion (RP-001)	0.71	0.25	0.21
Free drug (DHA -SBT1214)	1.03	0.37	0.27

IVIS Imaging Shows Tumor Localization of Dye-Loaded Nanoemulsion in C57BL/6 Panc02 Subcutaneous Model

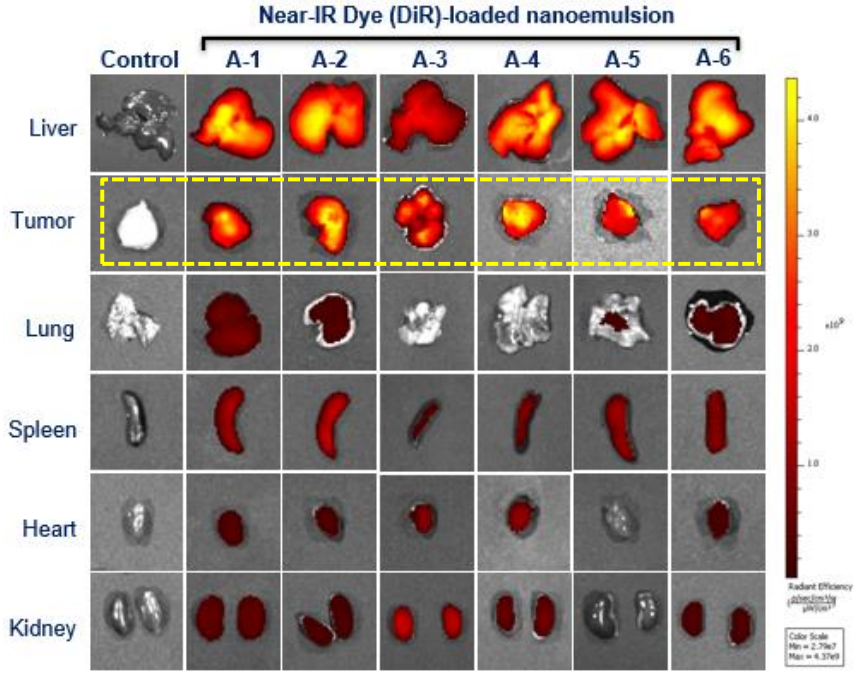
A

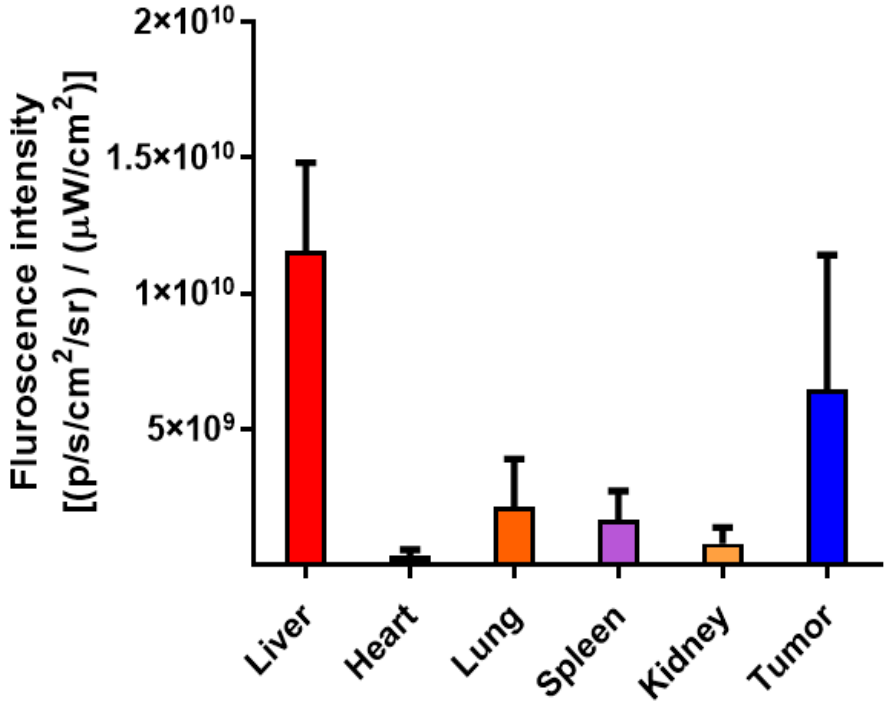
In vivo



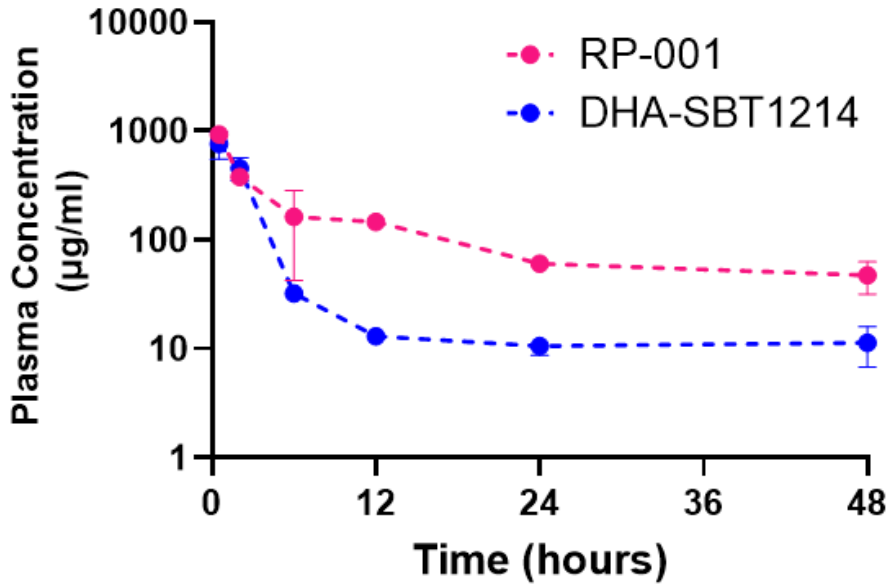
***Ex vivo* (24 h post-injection)**
n = 6

B



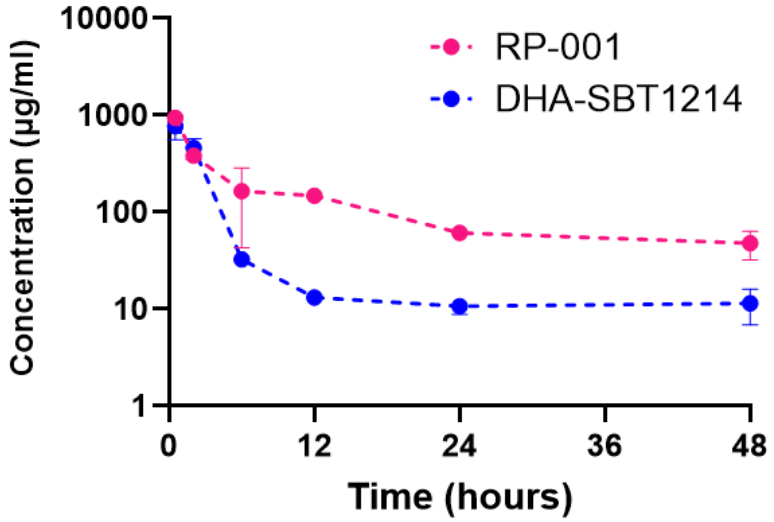


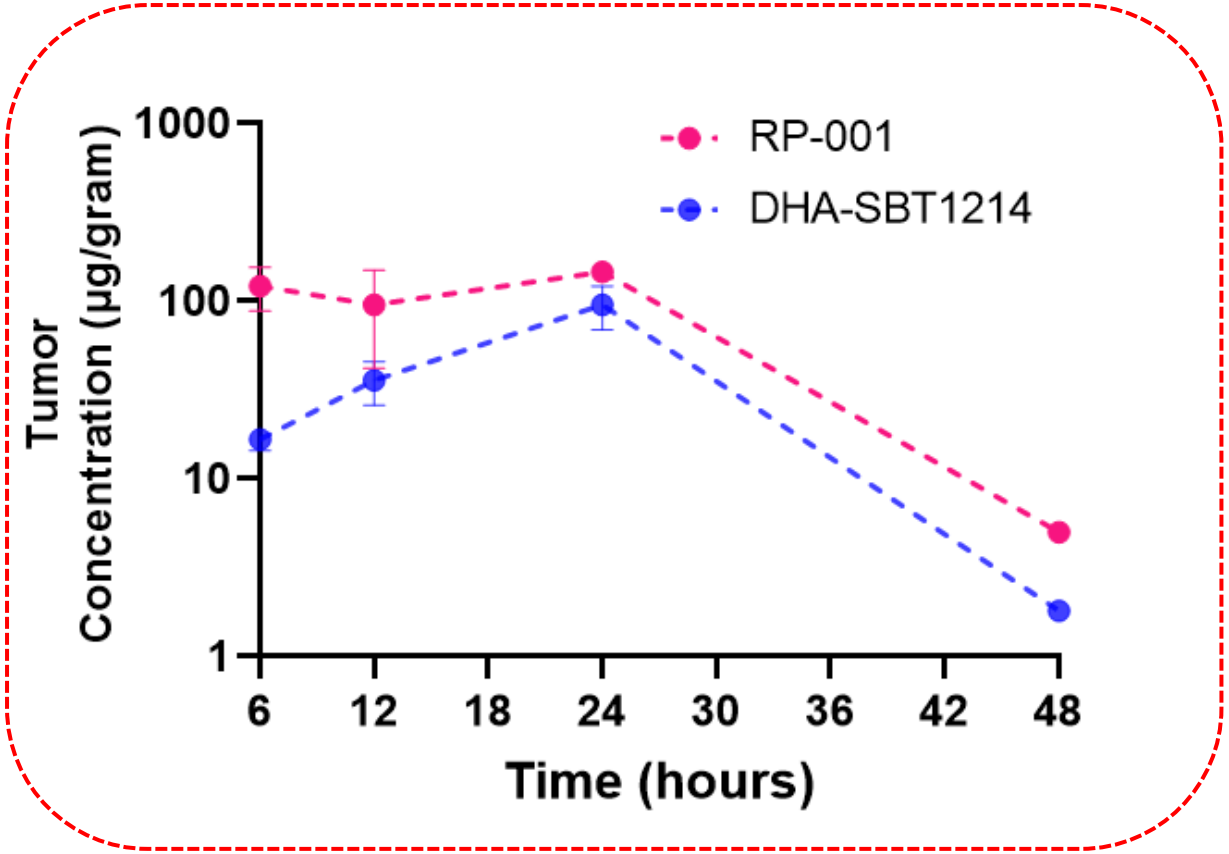
In Vivo Kinetics Reveal Prolonged Circulation and Tumor Accumulation in C57BL/6 Panc02-Induced Subcutaneous Model



Plasma Pharmacokinetic Parameters Following IV administration of 120mg/kg DHA-SBT1214 or RP-001			
	Units	**DHA-SBT1214**	**RP-001**
C_0	µg/ml	862.42	1268.36
C_{max}	µg/ml	763.90	931.36
AUC_{last}	h*µg/ml	3045.77	6231.31
AUC_{INF}	h*µg/ml	3194.63	8066.38
CL	L/h/kg	0.037	0.014
MRT	h	6.33	14.99
Vss	L/kg	0.304	0.419

In Vivo Kinetics Reveal Prolonged Circulation and Tumor Accumulation in C57BL/6 Panc02-Induced Subcutaneous Model





Conclusion

- RP-001 is a novel DHA-conjugated taxoid formulated in an omega-3 rich fish oil nanoemulsion.
- *In vitro* studies showed potent cytotoxicity against pancreatic cancer cell lines.
- *In vivo* IVIS imaging and pharmacokinetic study confirmed prolonged circulation and enhanced tumor accumulation.
- The nanoemulsion platform is scalable and may offer translational potential for hard-to-treat cancers like PDAC.

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