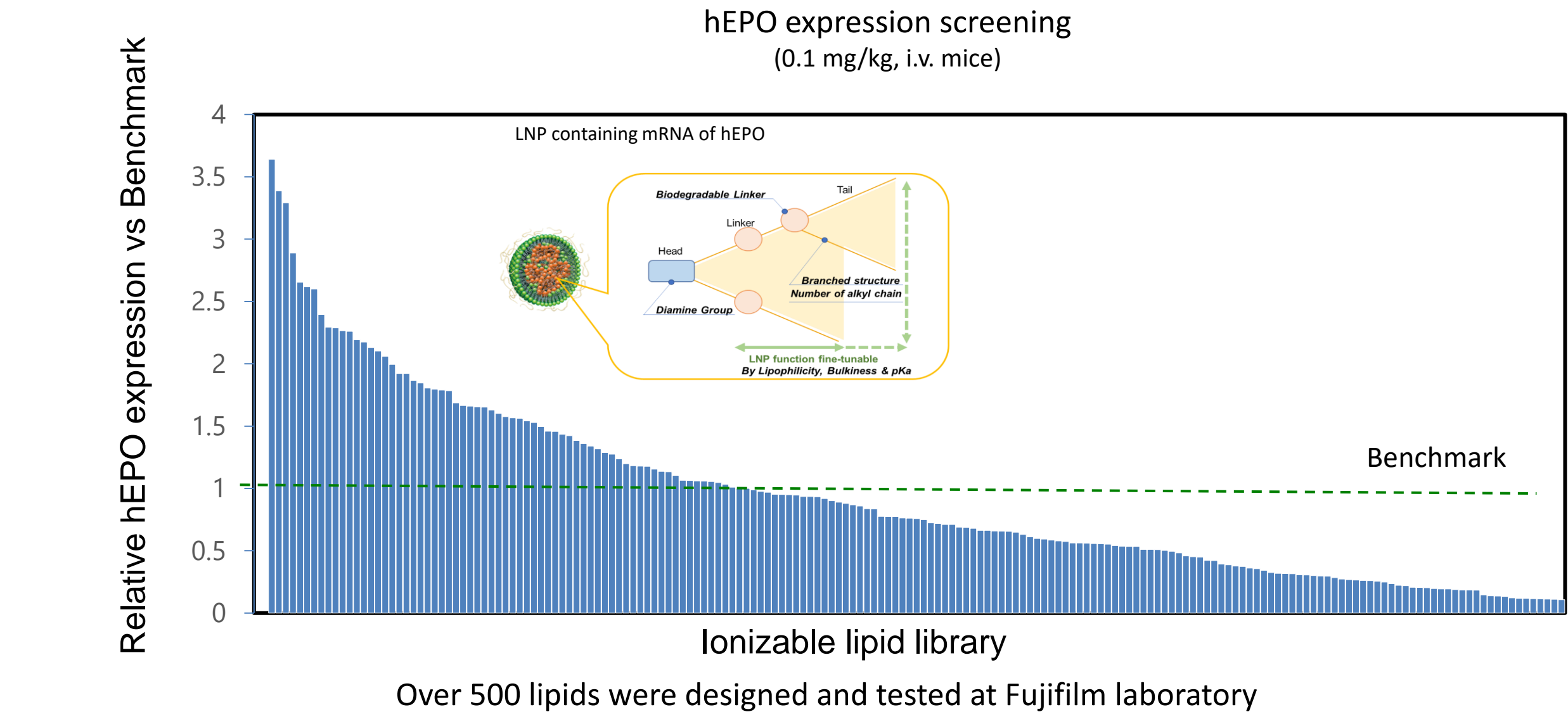


Ionizable lipids library

List of the lipids



Class	Lead Lipid	GMP Mfg.	IP Filed	in vivo			In-house data
				siRNA	mRNA	pDNA	
A	FL-2266	✓	✓	✓	✓	✓	siRNA, im vaccine
	FL-0445	✓	✓	✓	✓	✓	siRNA, im vaccine
B	FL-0207T		✓		✓		iv liver
	FL-1252T		✓		✓		iv liver
	FL-1207T		✓		✓		iv liver
D	FL-1030T		✓		✓		High spleen/liver
E	FL-1009T		✓		✓		ApoE independent

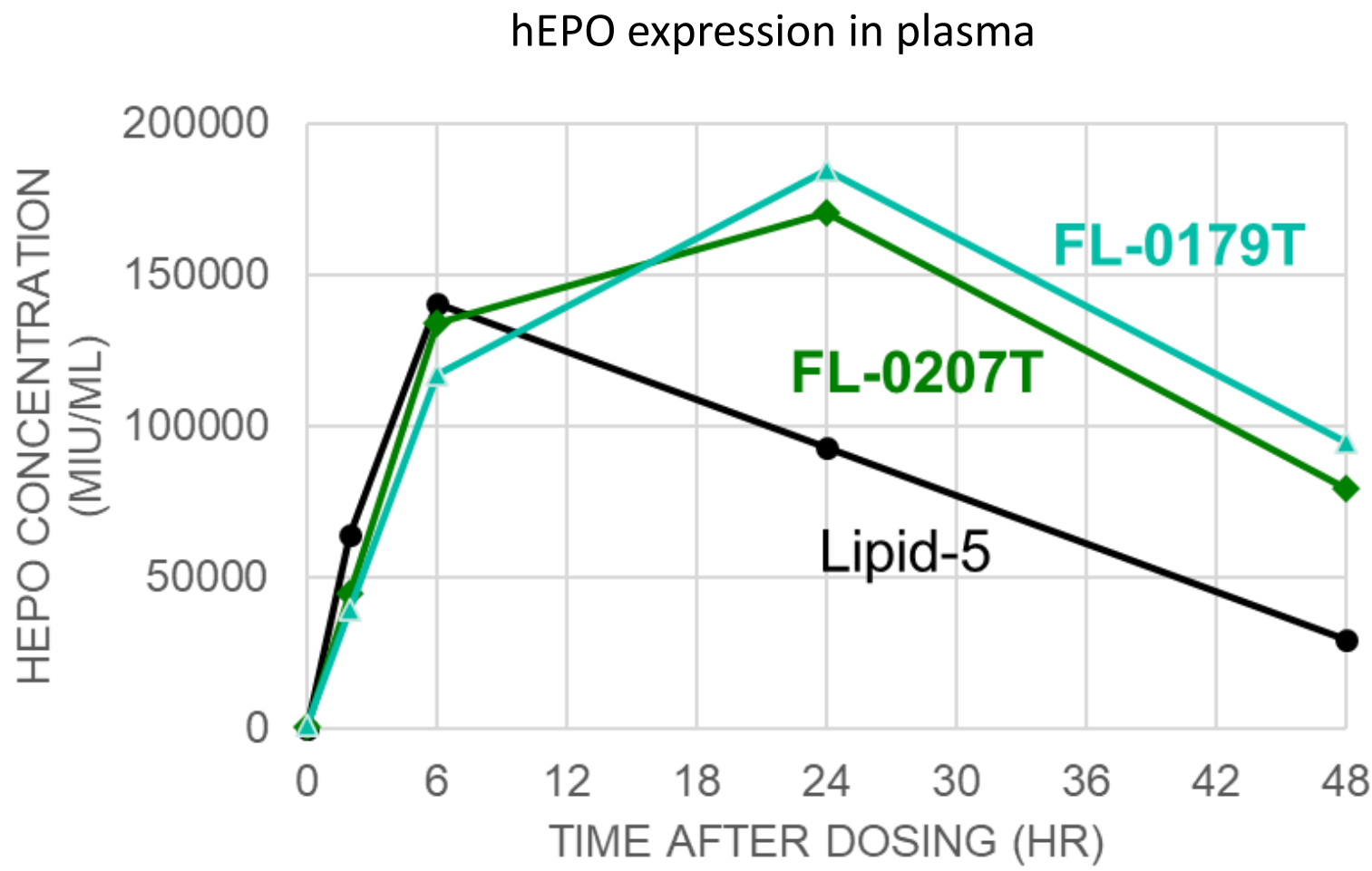
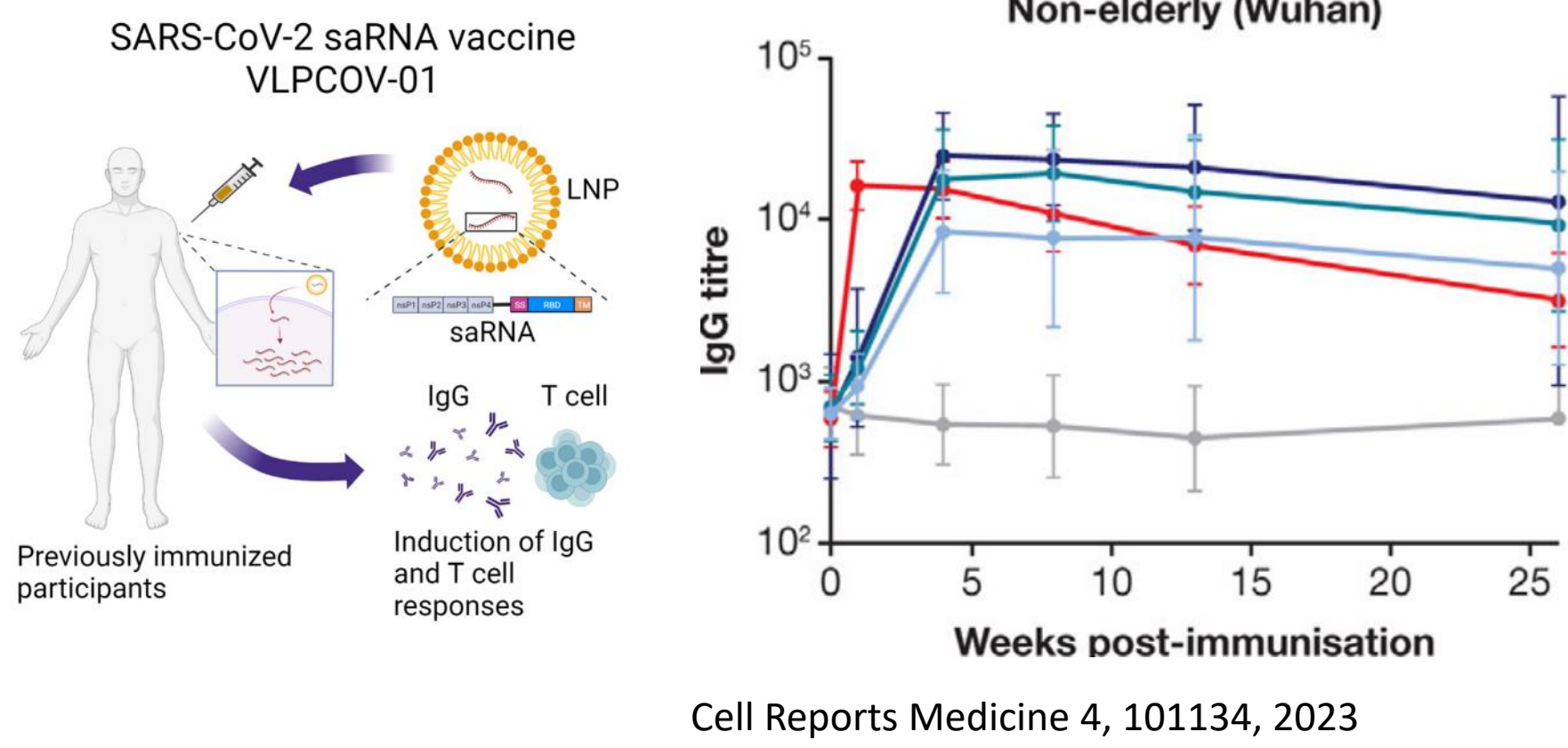
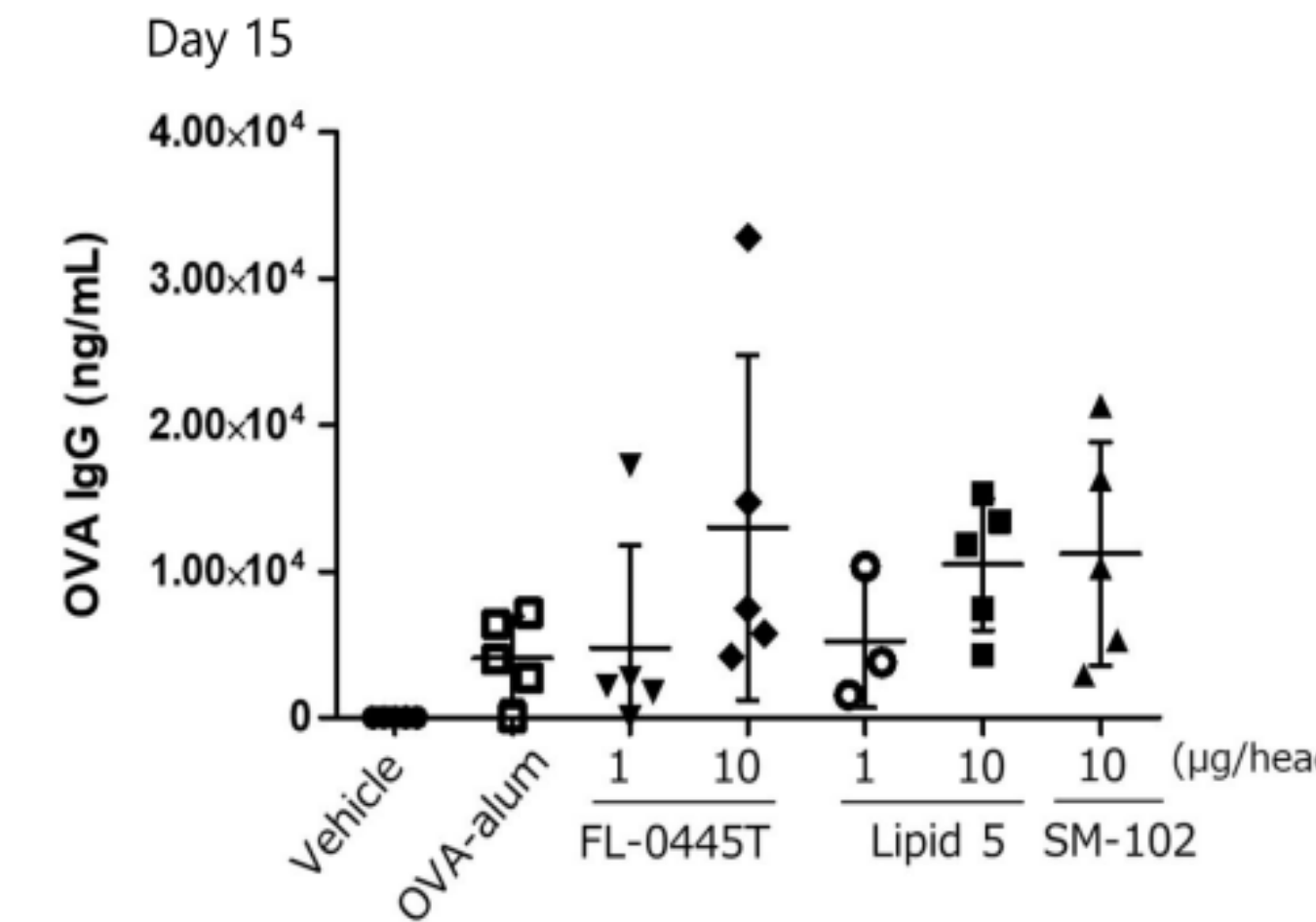
The lipids listed can be shared under MTA for evaluation use

mRNA delivery (IM)

mRNA delivery in NHP (IV)

FL-0445 LNPs containing mRNA of OVA were administered to mice by i.m. injection.

A result of Fujifilm lipid use in clinical trial



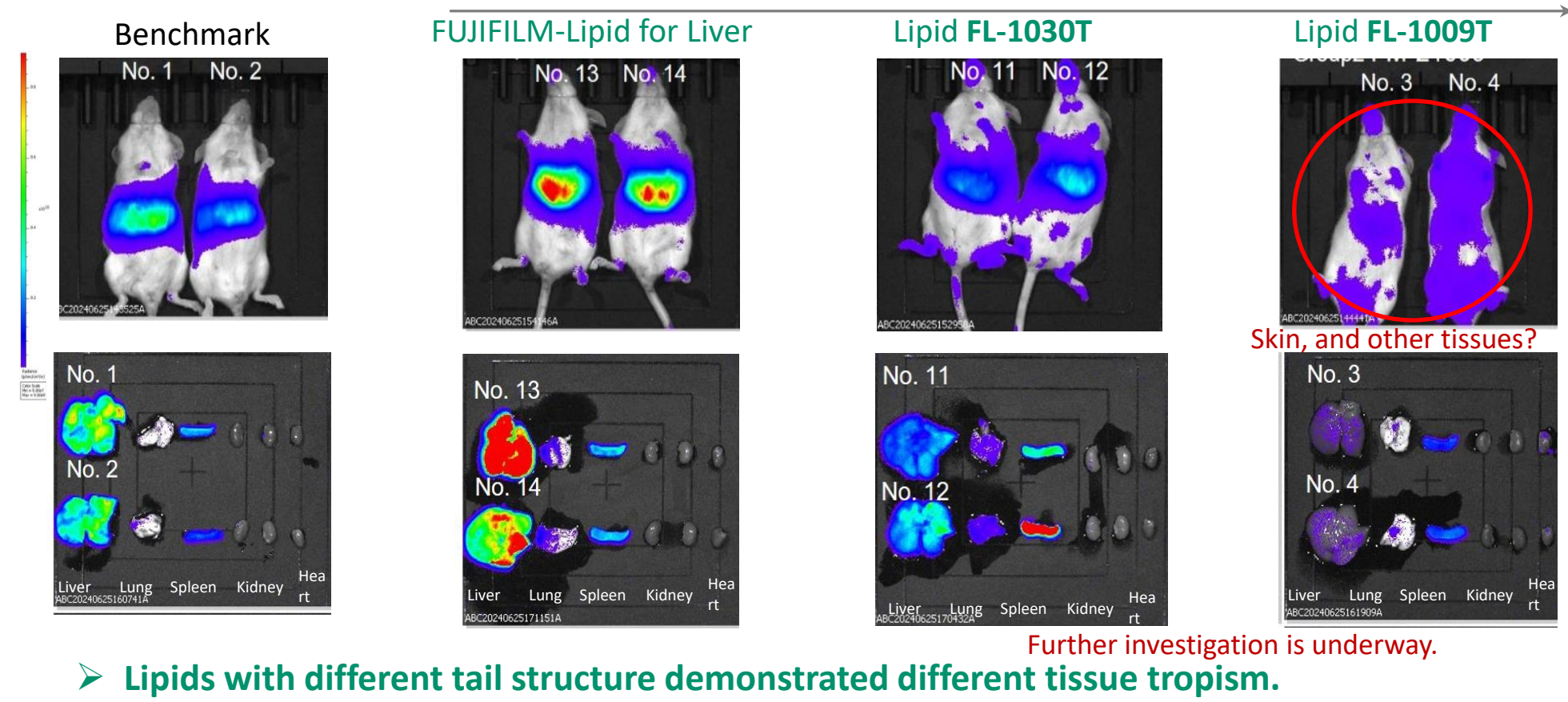
LNPs encapsulating hEPO-mRNA
Experimental animal : Cynomolgus monkey (male, 4y, N=2)
Dose : 0.2 mg/kg (mRNA), 1hr infusion, i.v.

Extrahepatic Delivery

Expression Distribution in Mouse (i.v.)

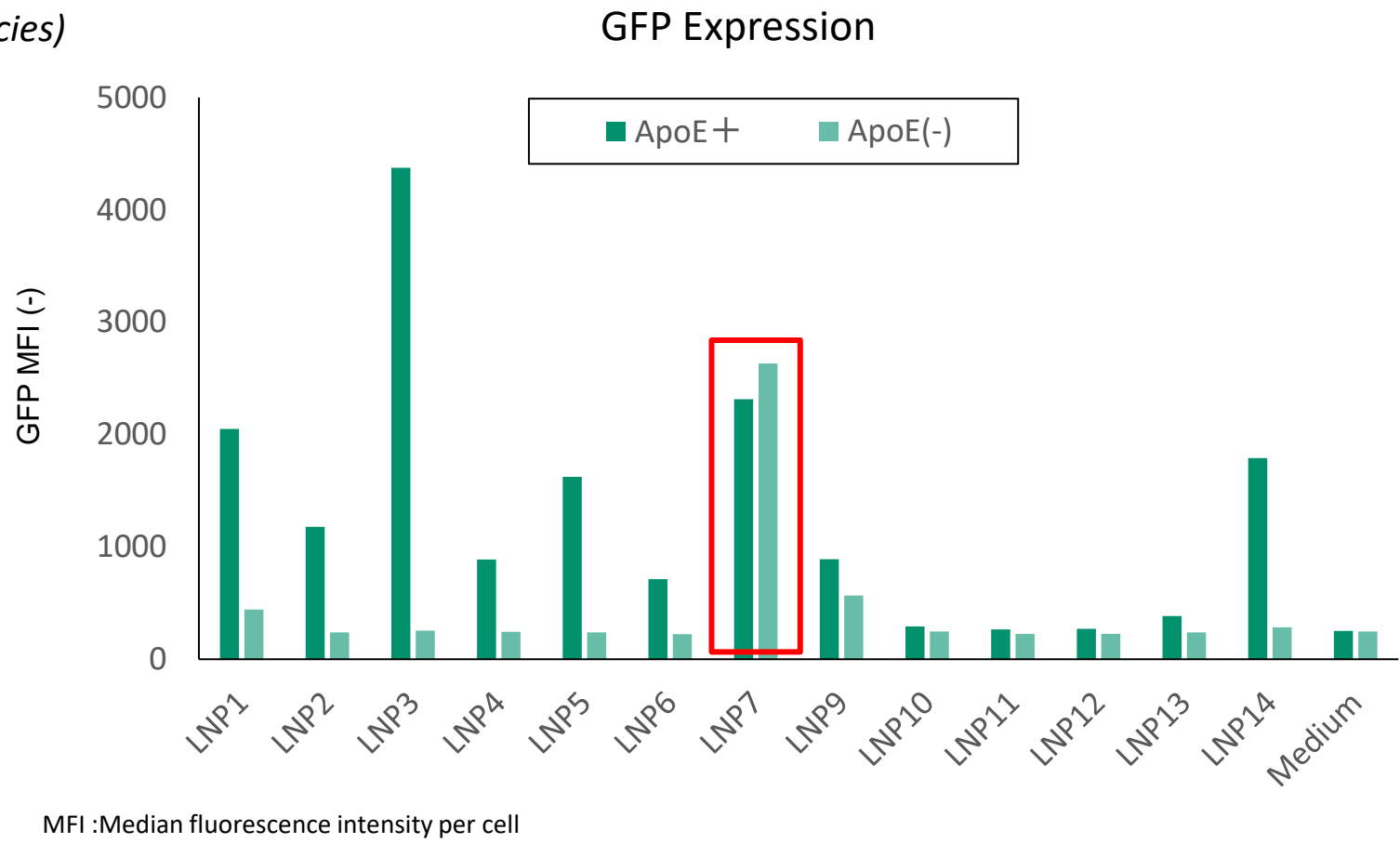
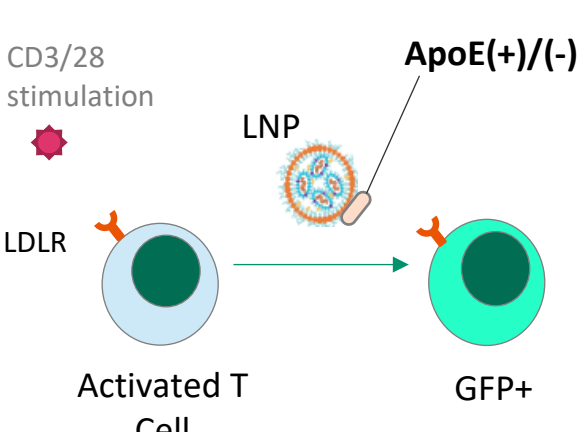


LNPs encapsulating FLuc-mRNA
Experimental animal: ICR mouse (female, 5wk, N=2)
Dose: 0.2 mg/kg (mRNA), i.v. 5hr(In Vivo), 6hr(Ex Vivo)



ApoE non-mediated uptake in ex vivo

GFP-mRNA, LNP1 ~14 (different lipid species)
Ex vivo Activated T Cell transfection
ApoE (+/-)

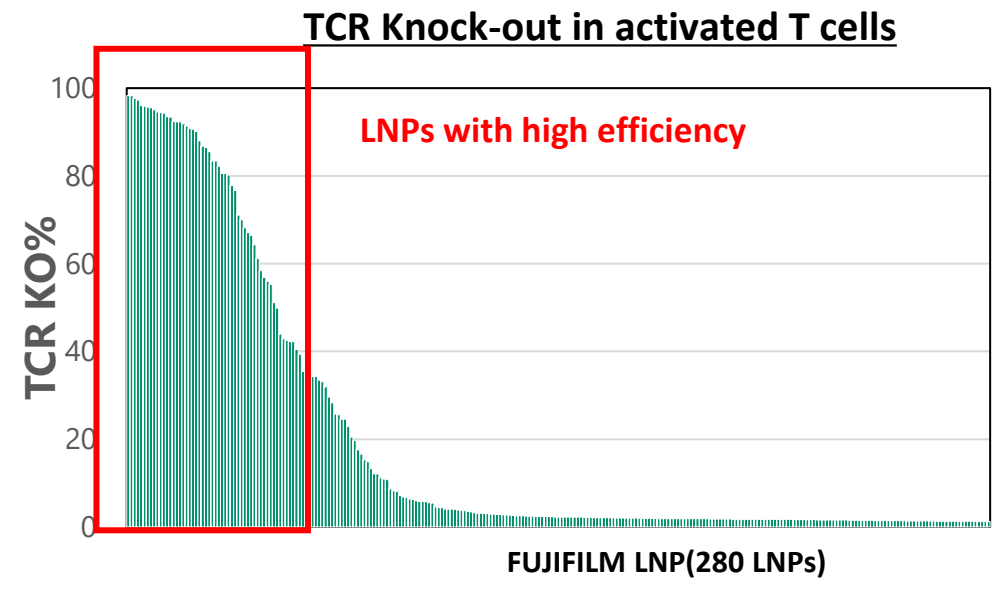
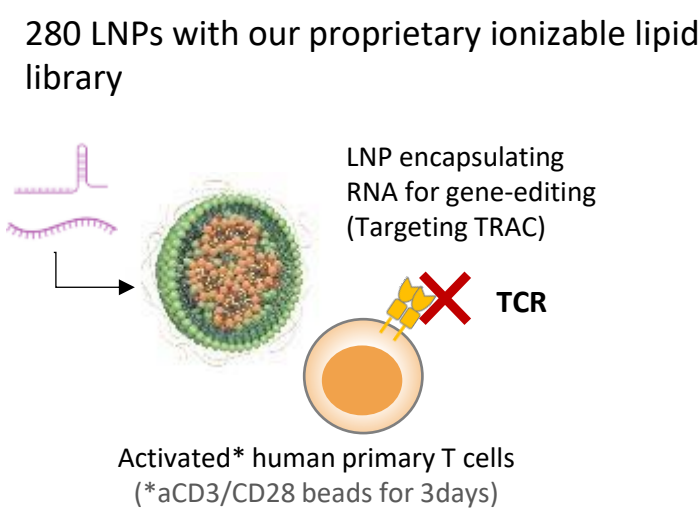
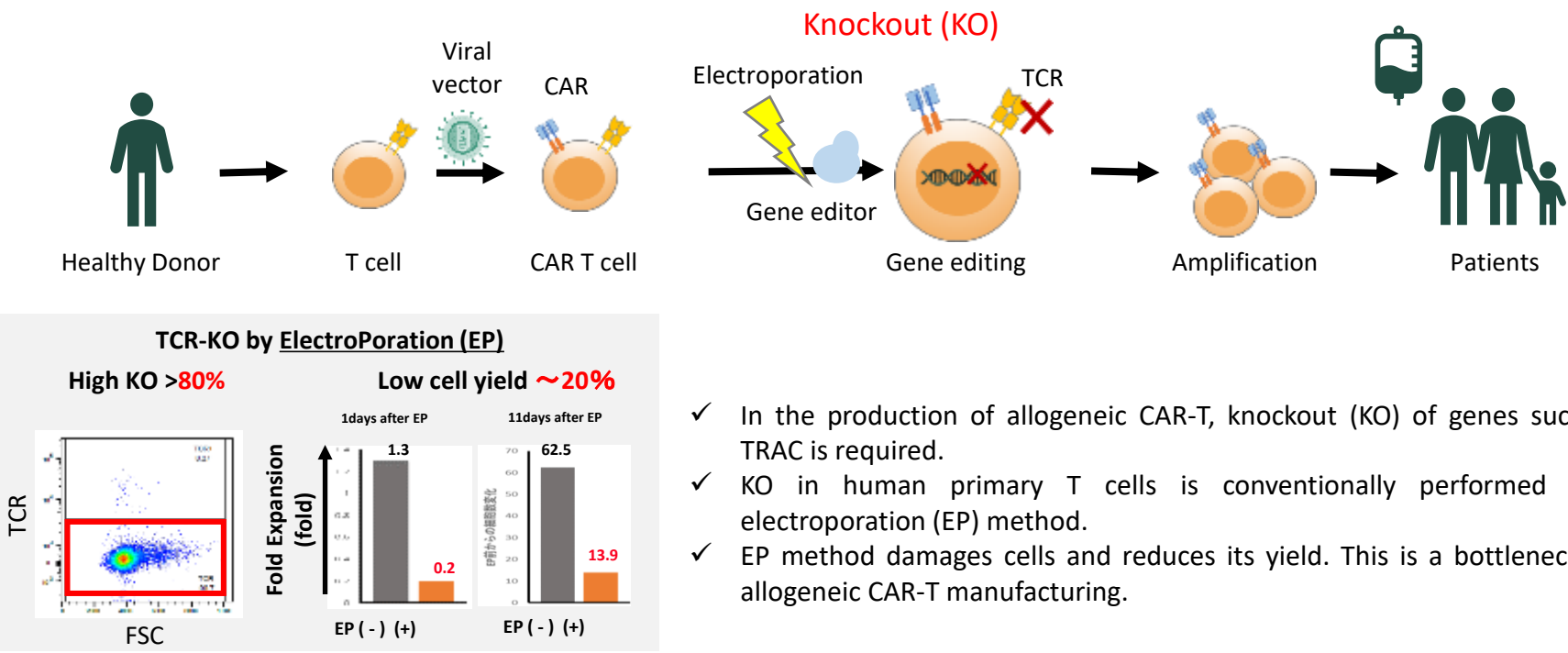


LNP ex vivo use for cell therapies

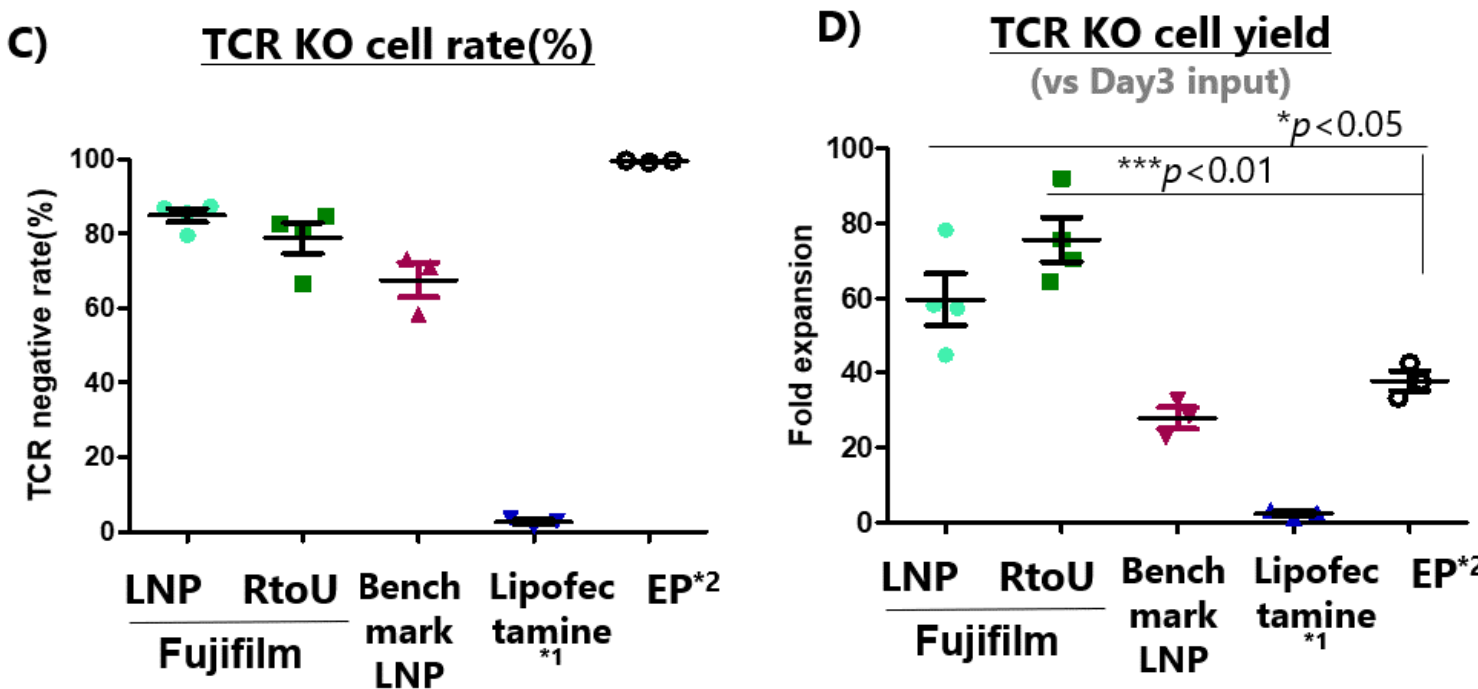
A challenge on allogeneic CAR T cell manufacturing

Screening of LNP with the Lipid Library

Application on gene editing

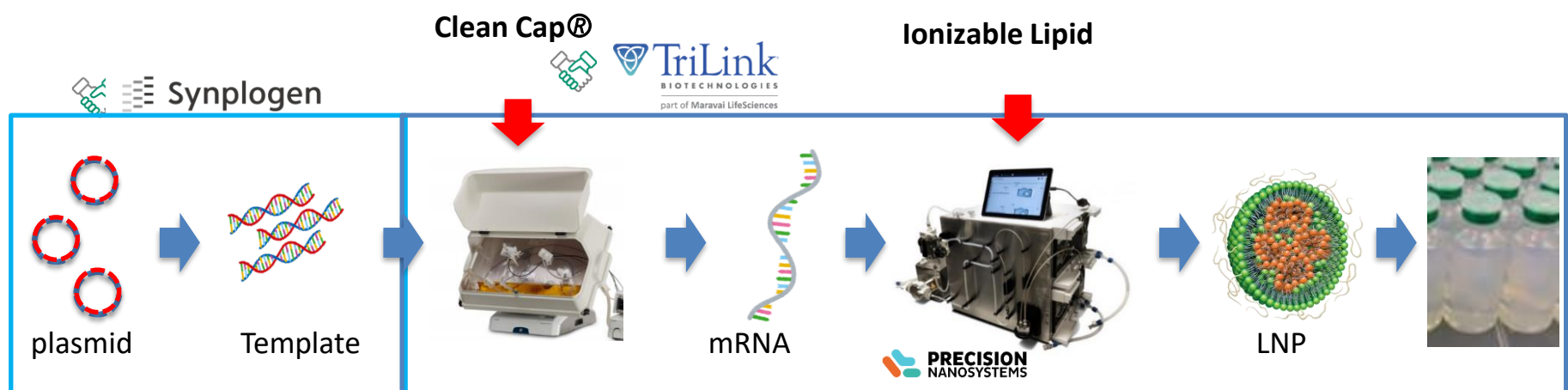


LNP screening in activated T cells.
T cells were transfected RNA 2 ug/million cells with each LNP.
TCR KO rate was examined at 4days after treatment.



CDMO services GMP manufacturing – Facility

One stop shop CDMO services for mRNA/LNP



Seam less scales of the manufacturing



- ✓ mRNA IVT 1g to 50 g/batch
- ✓ LNP / Liposome NxGen™ Microfluidic mixer (0.2 – 100L)
- ✓ KrosFlo® TFF and Mobius Flex Ready® from mL scale to ~100 L
- ✓ Vial filling system with isolator, 3,000 vials/hour
- ✓ Full range analytical services for GMP batch release

