



Unleashing the power of biologics to address difficult-to-treat targets

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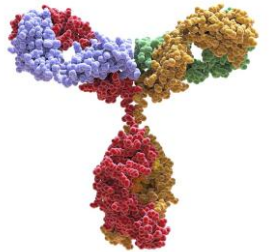
Forward-Looking Statements

This presentation contains forward-looking statements made pursuant to safe harbor provisions that involve risks, uncertainties and assumptions that could cause Libera Bio's actual results to differ materially from anticipated results and expectations expressed in these forward-looking statements. Libera Bio has in some cases identified forward-looking statements by using words such as "anticipates," "believes," "hopes," "estimates," "looks," "expects," "plans," "intends," "goal," "potential," "may," "suggest," and similar expressions. Among other factors that could cause actual results to differ materially from those expressed in forward-looking statements are Libera Bio's need for, and the availability of, substantial capital in the future to fund its operations and research and development; and the fact that Libera Bio's products may not successfully complete pre-clinical or clinical testing or be granted regulatory approval to be sold and marketed in Europe, the United Kingdom, the United States or elsewhere. You should not place undue reliance on any forward-looking statements. Libera Bio undertakes no obligation to release publicly the results of any revisions to any such forward-looking statements that may be made to reflect events or circumstances after the date of this document or to reflect the occurrence of unanticipated events, except as required by applicable law or regulation.

3 Introduction

Objective

- Leverage a diversity of active agents (mAbs, mRNA, PROTACs, BIOTACs...) to **address difficult-to-treat targets**
 - For example, intracellular targets represent ~3/4 of all therapeutic targets and antibodies cannot enter cells by themselves



Capabilities





















- Our MPN Nanocapsules can deliver
 - antibodies to **intracellular targets** (~¾ therapeutic targets are inside cells)
 - to specific cells (**targeting** a protein on their surface such as in cancer cells) and not only to the liver / spleen / lung (like LNPs)
 - over extended periods of **several days** (and more from a subcutaneous implant)
 - through the BBB
 - with **high diffusivity** (liver, brain)
 - **without using toxic components or heat** in their manufacturing, at low COGS

Priorities

- High unmet needs. The active agent exists (e.g., biosimilar, PROTAC) or may be designed with classic tools (e.g., mAb, mRNA), the main issue being one of **precision delivery**.

4 Priority programs

Our pipeline features a selection of highly promising and valuable assets

Target	Condition	API	Discovery	Proof of Concept	Lead optimization	CMC & Regulatory Preclinical	Phase 1/2a
mRNA for Klotho supplementation	Metabolic syndrome				€0.5mn	Paid by partner	
subcutaneous mAb delivery	Cancer	Undisclosed			Q3 2025		
	Other	Undisclosed			€0.5mn		
STAT3 mAb	Cancer				€1.0mn		
	Inflammation				Human, veterinary		
biosimilar mAb	Liver fibrosis	biosimilar					



Work done



In progress



Series A.1 (€2.0mn / \$2.2mn)



Series A.2 (€4.0mn / \$4.4mn)



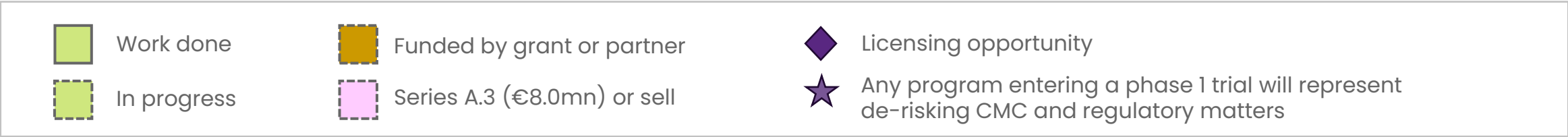
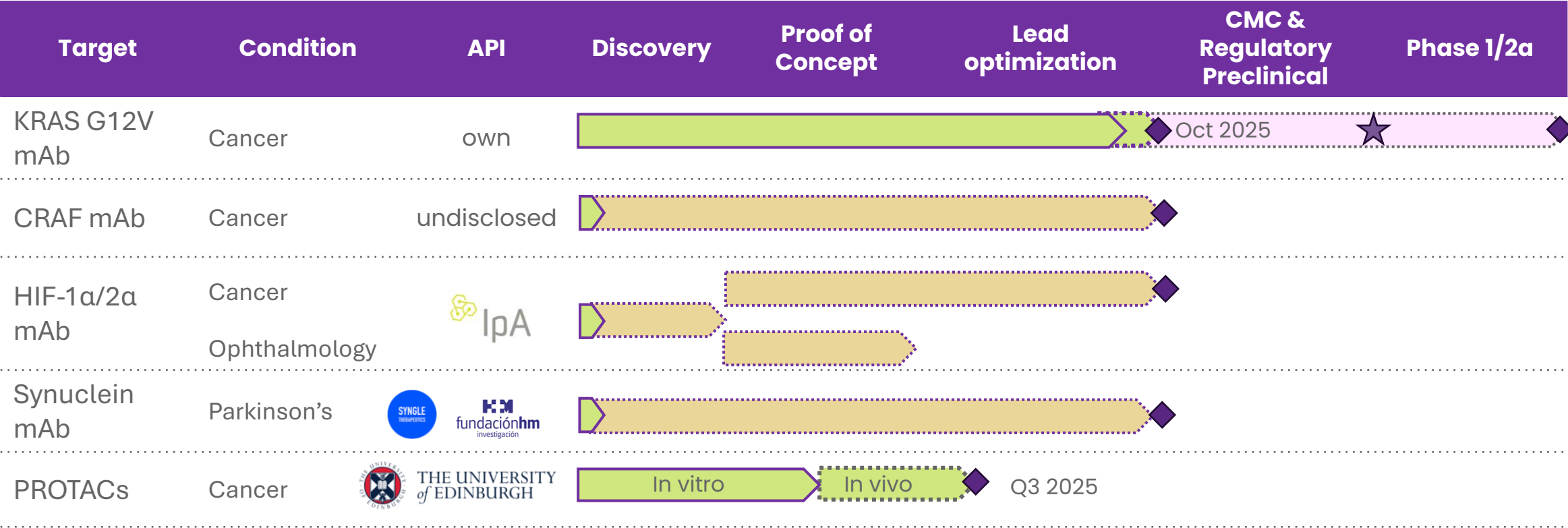
Licensing opportunity



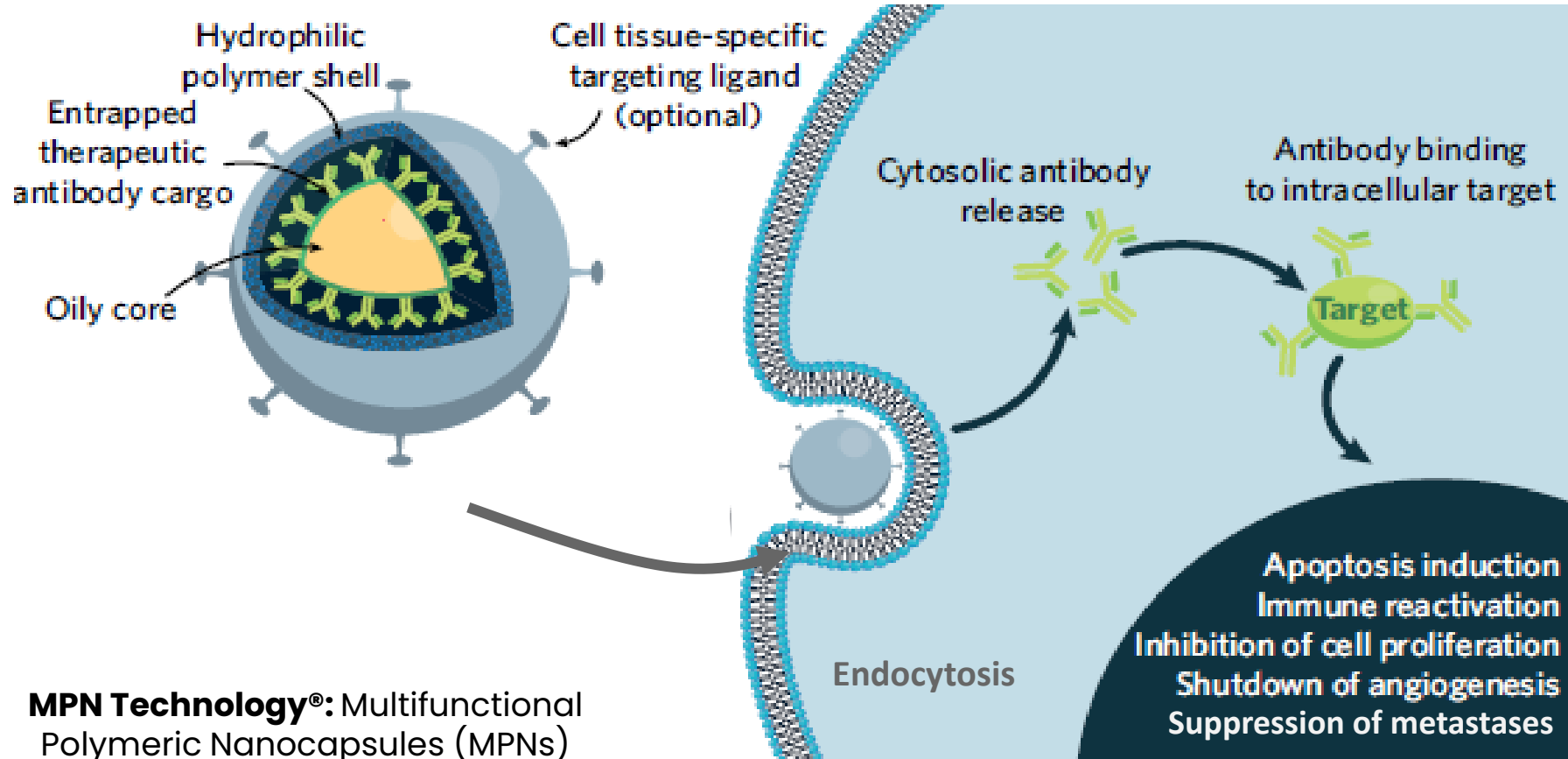
Any program entering a phase 1 trial will represent de-risking CMC and regulatory matters

5 Other own and partnered programs

These programs may be funded by grants or co-developed with a partner

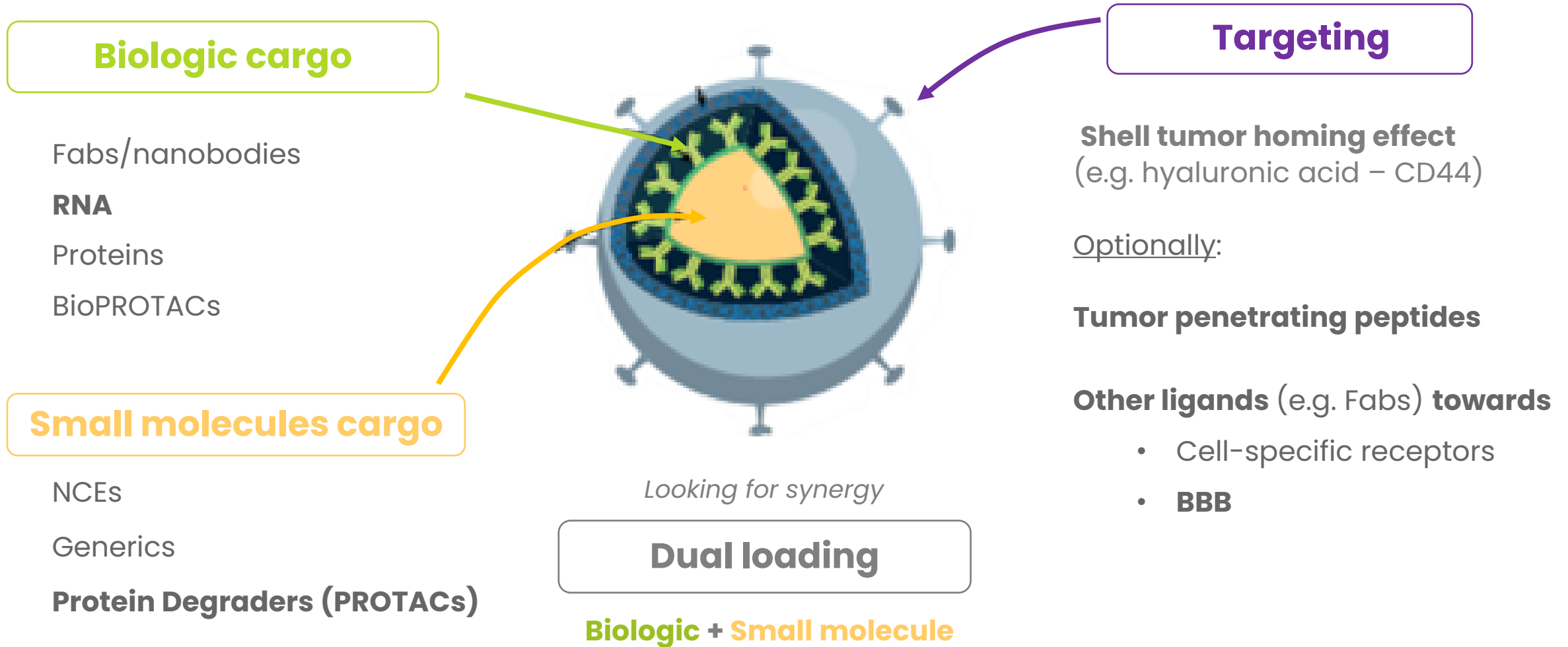


6 The MPN Technology® is a potential solution to unlock the therapeutic value of Intracellular Antibody Delivery



Source: Nature, March 2022

7 The MPN technology is flexible to address a range of “difficult-to-treat” situations

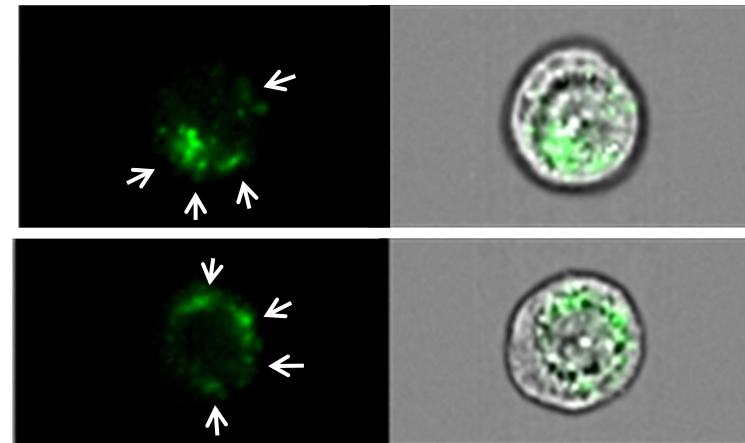
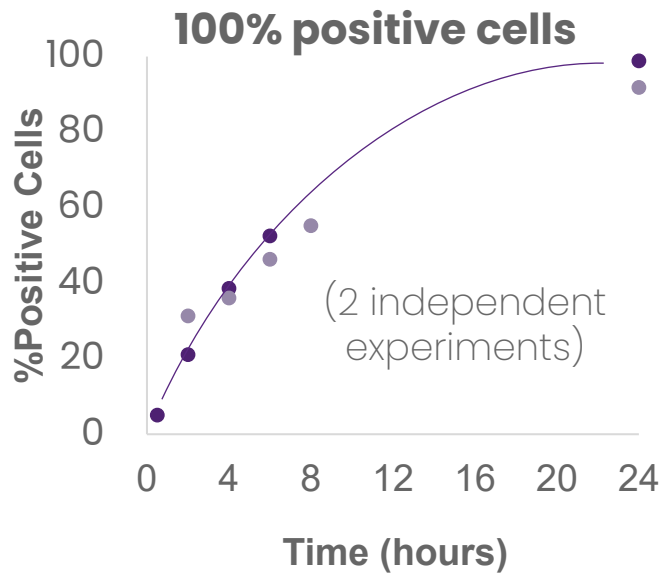


8 Illustration of mAb Internalization & Target Engagement

Our non-clinical data shows stability in storage, stability in plasma, very low protein corona, excellent biodistribution to tumors and lymph nodes, internalization of the payload, high affinity for the target.

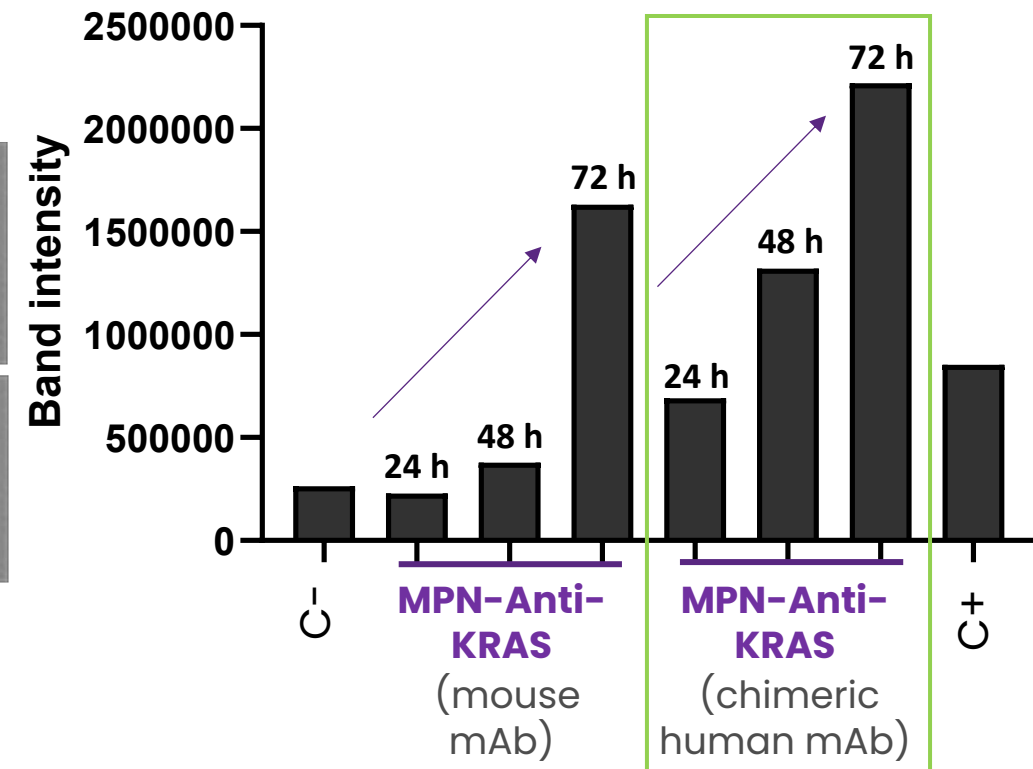
Internalization

IMAGESTREAM™ *in vivo* cell microscopy



Anti-KRAS mAb localization in the inner side of plasma membrane (action site); 8h time point

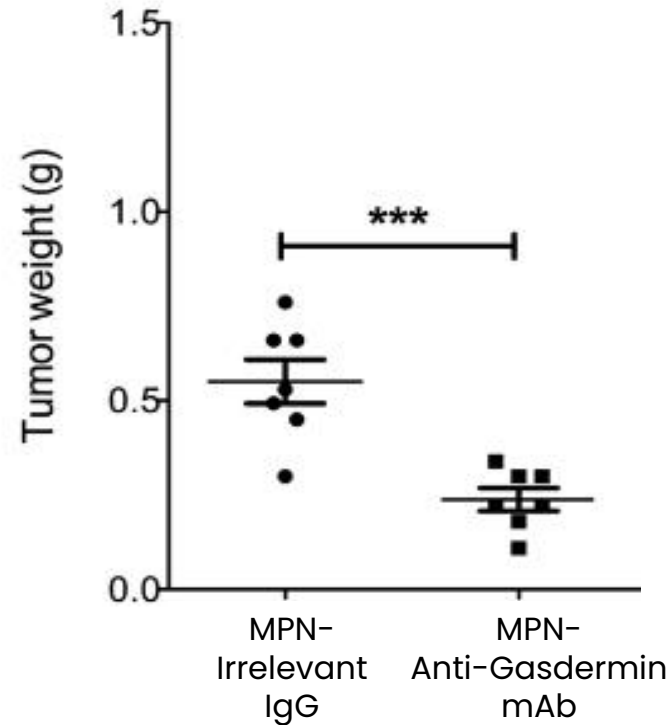
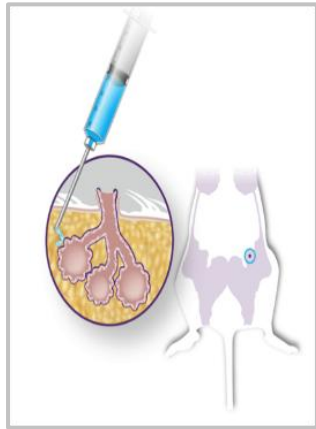
Target Engagement



Dose: 50 nM Anti-KRAS mAb; C- (cell media); C+ (cell lysate + 5 µg free Anti-KRAS mAb)

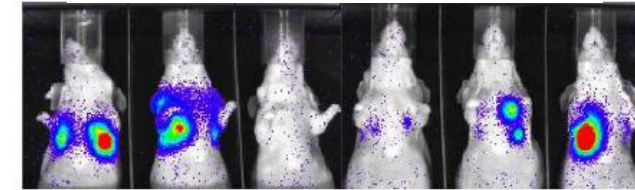
9 MPN is the first nanotechnology proven successful *in vivo* for the Intracellular Delivery of Antibodies

Effect on primary breast **tumor growth**



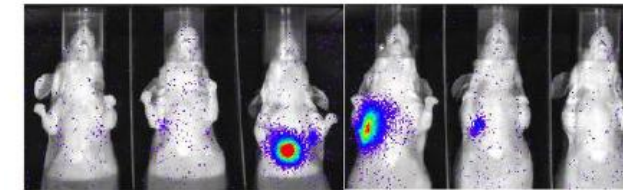
Effect on **metastatic spreading** to the lungs

MPN-Irrelevant IgG



4 individuals with metastases

MPN-Anti-Gasdermin mAb



2 individuals with metastases

POC 1: orthotopic mammary fat pad tumor model, HCC1954 cells

POC 2: orthotopic mammary model, MDA-MB-231-HER2 cells

Target: Gasdermin B

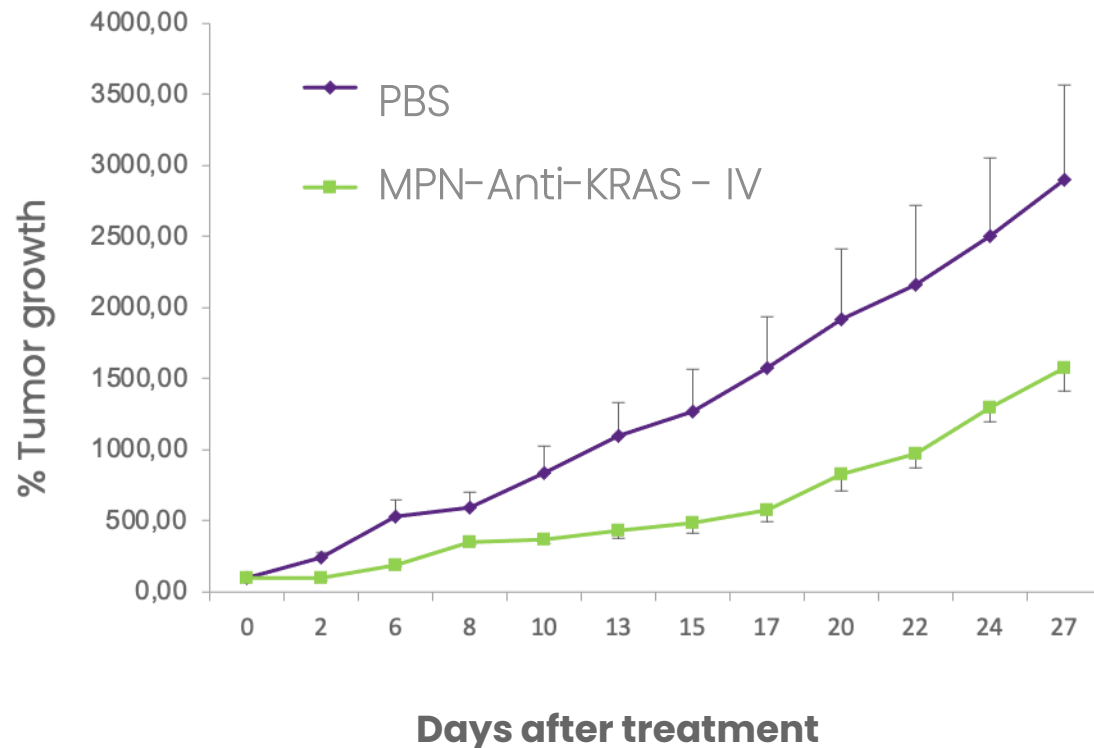
Published in Clinical Cancer Research, Molina Crespo A et al.. August 2019

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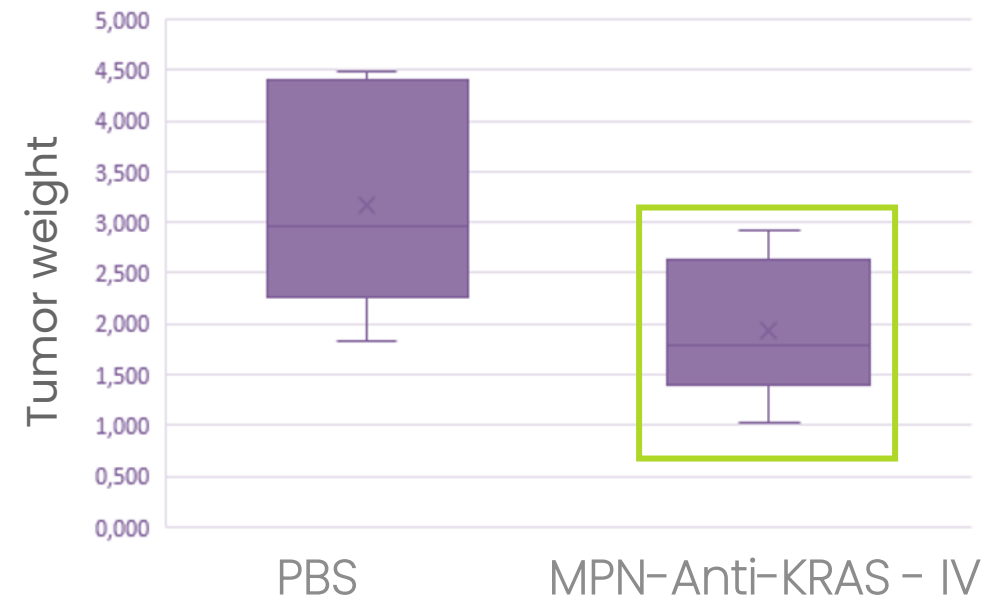
10 Intracellular mAbs: efficacy POC studies

Preclinical models of our KRAS mAb in monotherapy show evidence of efficacy (biomarkers, tumor size, tumor biopsies) in pancreatic, colorectal, lung and other models

LUNG CANCER S.C ALLOGRAFT MODEL



COLORECTAL CANCER ORTHOTOPIC MODEL

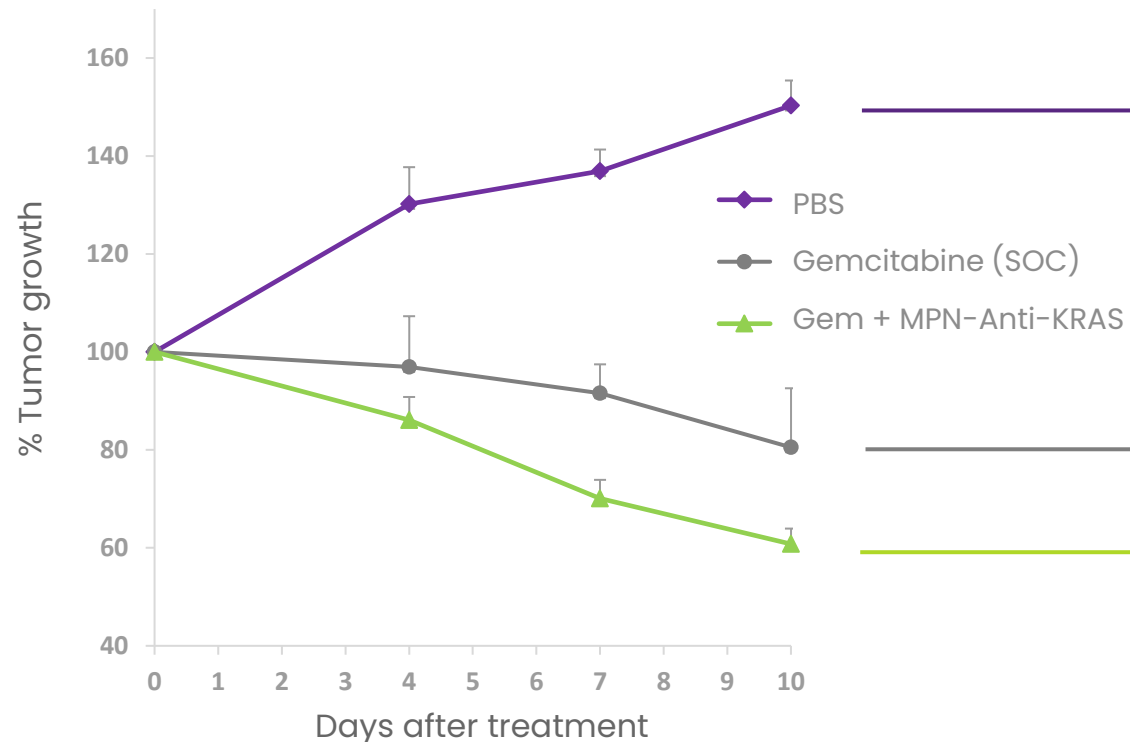


Necrosis →

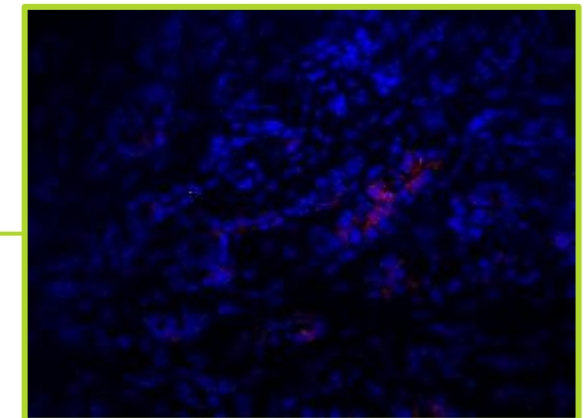
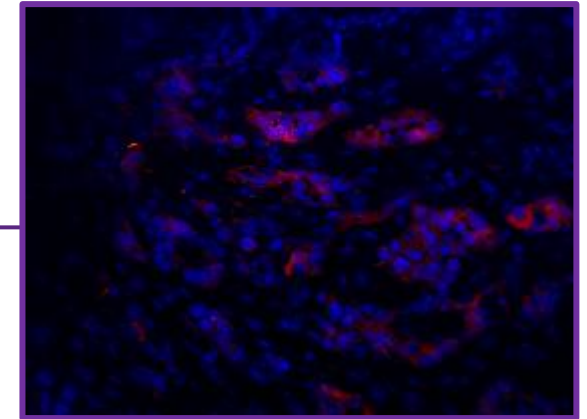


11 Efficacy POC studies (KRAS+, combination)

In this difficult Pancreatic S.C. Xenograft Model, the MPN-anti-KRAS in combination shows superiority to the Standard of Care (gemcitabine alone)



pERK divided by 3
(immunofluorescence)



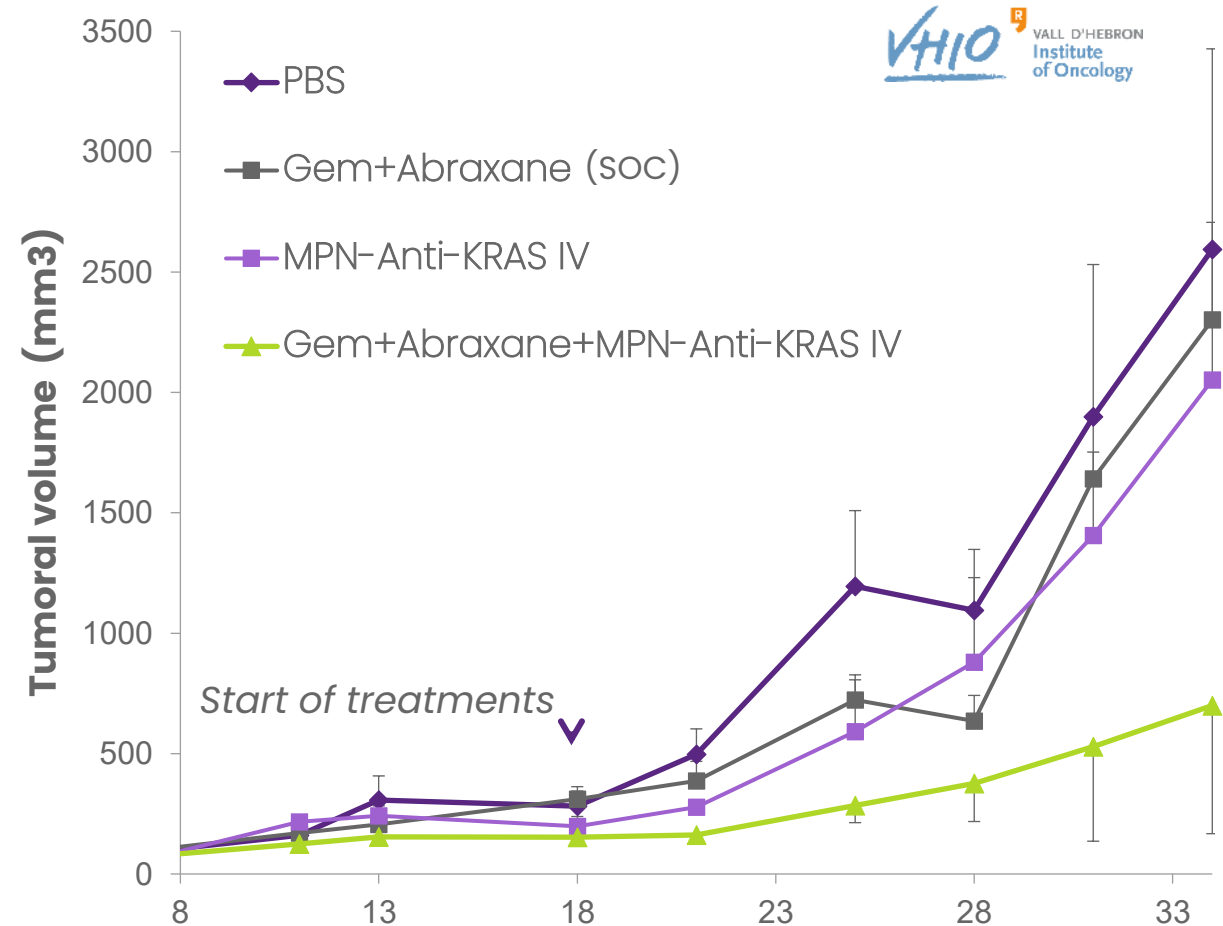
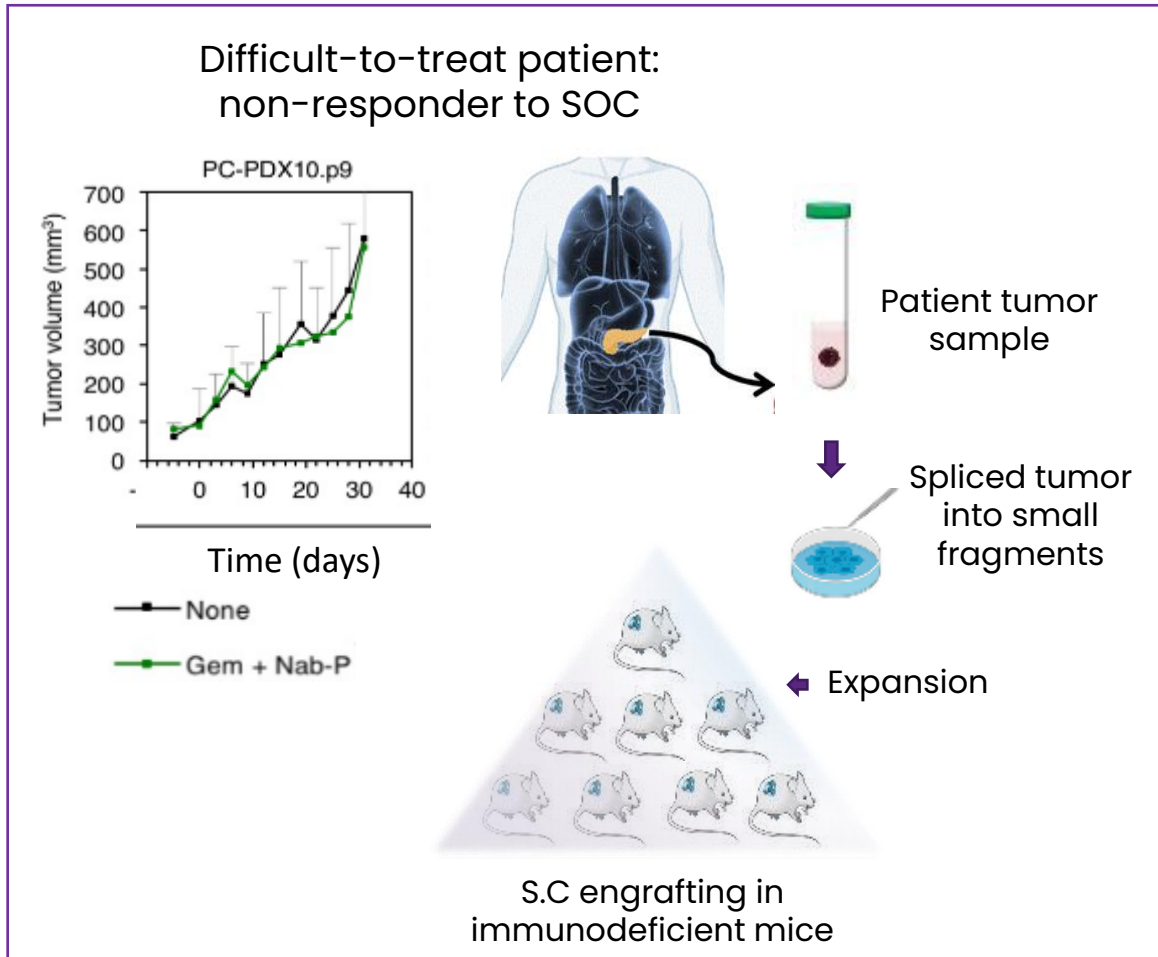
Average ± SEM Gemcitabine IP (1 time/week, 2 doses) and MPN-mAb IV (2 times/week, 4 doses)



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12 Efficacy POC studies (KRAS mAb plus SOC)

In this very difficult Patient-Derived Pancreatic Xenograft Model, the Standard of Care (gemcitabine + Abraxane®) shows quasi no efficacy. In combination with our MPN-anti-KRAS the response is a strong control of the tumor size.



13 Example of targeting and diffusivity: hepatic fibrosis mAb

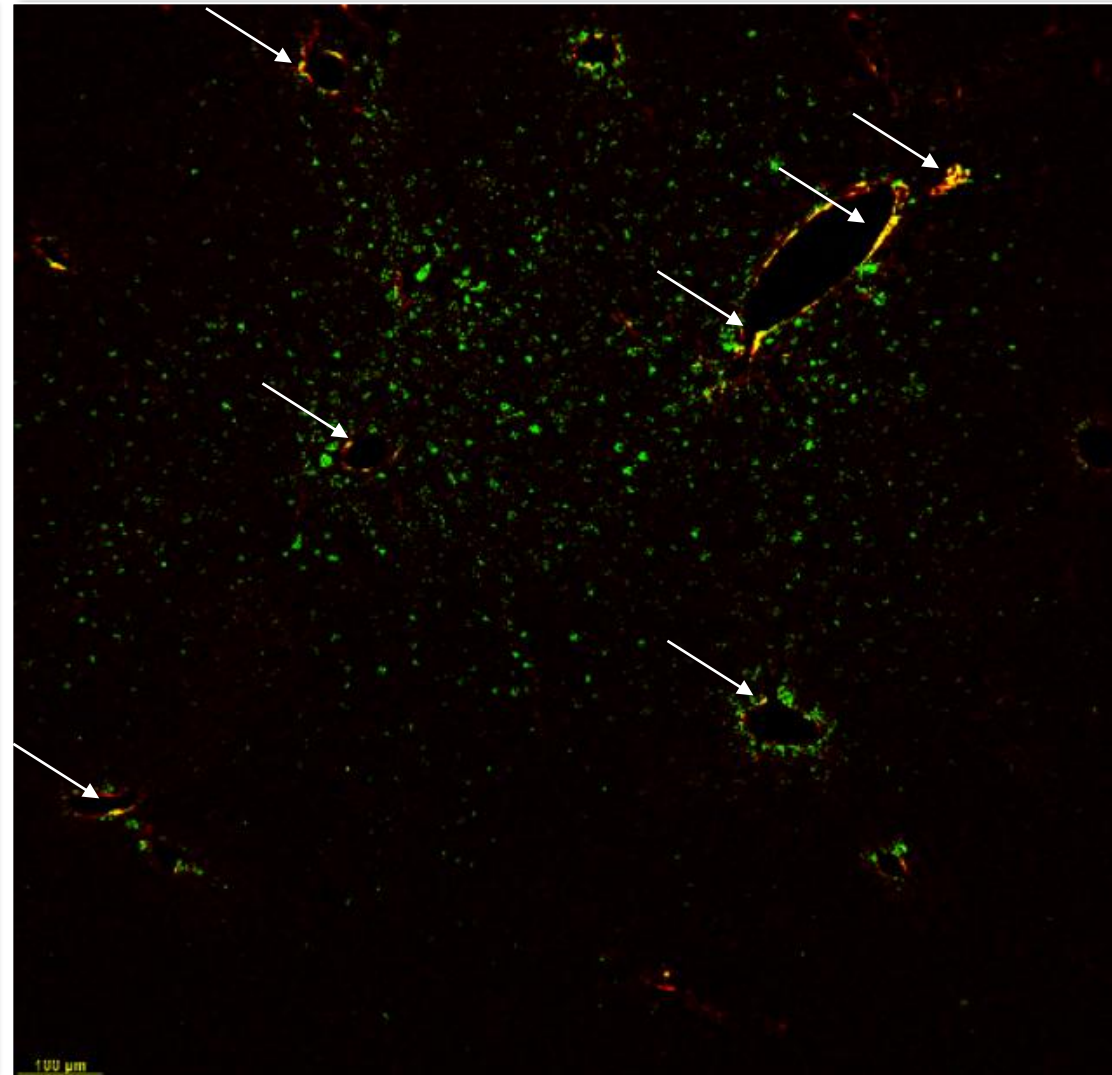
MPNs obtain an Effective Co-localization of mAbs with stellate cells target

MPN-mAb
(green)

Stellate cells TARGET
(red)

Colocalization
mAb-TARGET
(yellow)

indicated by arrows



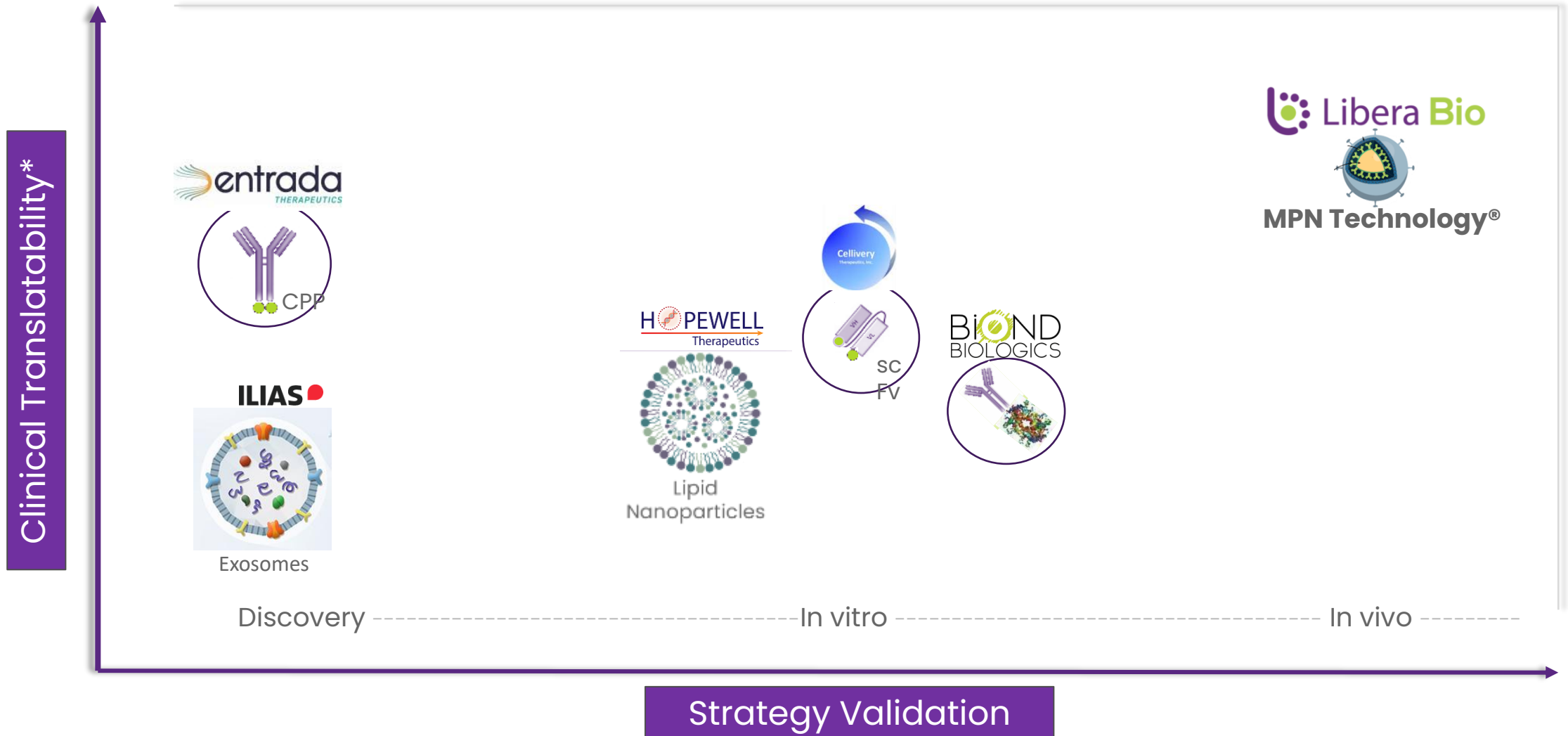
CiMUS
Center for Research
in Molecular Medicine and
Chronic Diseases

Liver images;
Immunofluorescence;
**8 days after IV
administration**
(single dose: 10 mg mAb/kg);
healthy animals

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14

Active Competition is in Early Stage in the Intracellular Antibody Delivery Space



*Safety concerns (mAb modification and/or toxic complexing agents); Limited payload; Deficient diffusivity and biodistribution; CMC complexity

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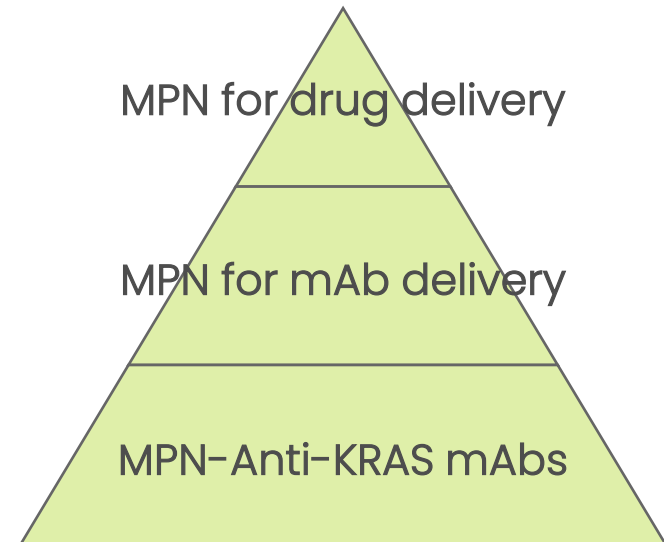
15 Our patent portfolio is comprised of 3 families of nested patents

Libera Bio holds exclusive licenses to USC patents and intends to create new IP as it expands MPN platform applications and develops new therapeutic candidates

12 patents issued worldwide

14 pending applications worldwide

Patent claims cover:



Including

- Pharmaceutical use of MPN to treat cancer and other diseases
- Combination therapies
- Methods for MPN manufacturing



16 Prof. MJ Alonso, built her nanomedicine expertise in the MIT Langer Lab. Our team, built in 2018, is supported by renown oncology and technology KOLs.



Prof. Maria J. Alonso Ph.D | CSO



Worldwide leader in drug delivery with 30-year experience in formulation of biological drugs

- 300 research papers, >31,000 cites, H Index 93
- Member US Nat'l Academy of Medicine
- Past President of the Controlled Release Society
- Pharmacology Top 10
- Most Influential Researcher Power List
- Inventor of 23 patent families. 3 start-up ventures.



Olivier Jarry, MS, MBA | CEO



Executive with Novartis, Bayer and Bristol-Myers Squibb

- CEO, President, CCO of small companies from preclinical stage to commercialization stage
- Experience in large pharma in business development, M&A, alliances, product launch (oncology and other areas, on 4 continents)
- Investment banking training. Contacts at approx. 1500 investors. Fundraising: >\$100mn



Desirée Teixeira, Ph.D | COO



20+ years scientific management experience in academic and private sectors

- Numerous translational and industry collaborative projects in Nanomedicine
- Inventor of several patents
- Experience in Technology Transfer, IP strategy, Regulatory matters, laboratory management

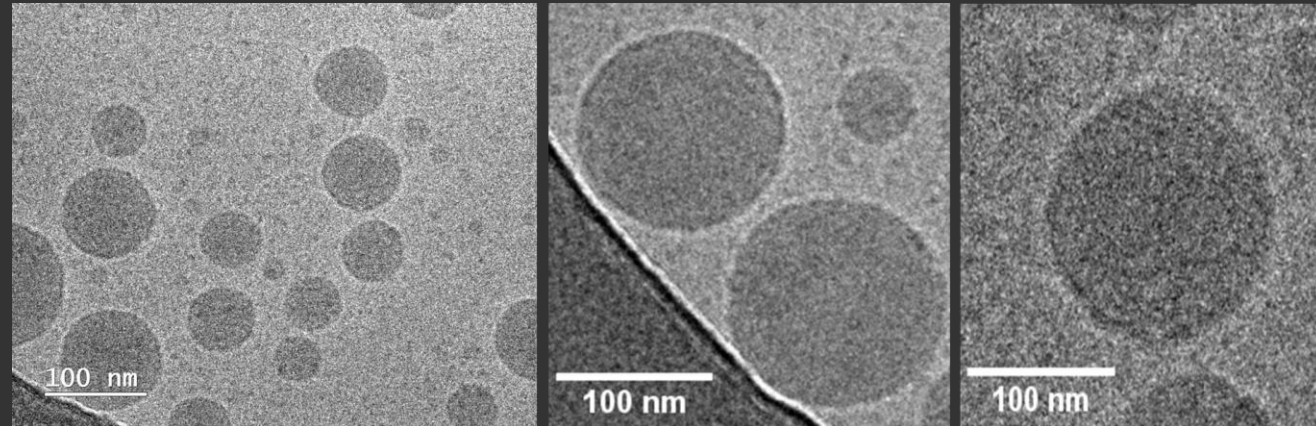
Appendices

18 Cryo-TEM Analysis (with negative staining)

Negative staining technique additionally confirmed:

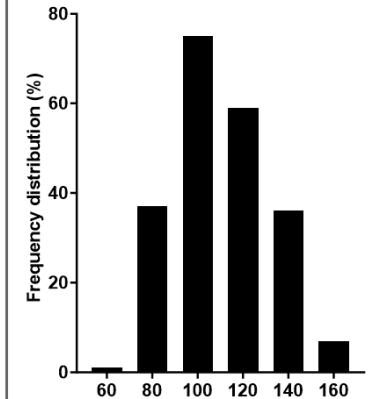
- A higher electro-density in mAb-loaded MPNs, compatible with an **efficient mAb association**

MPN blank

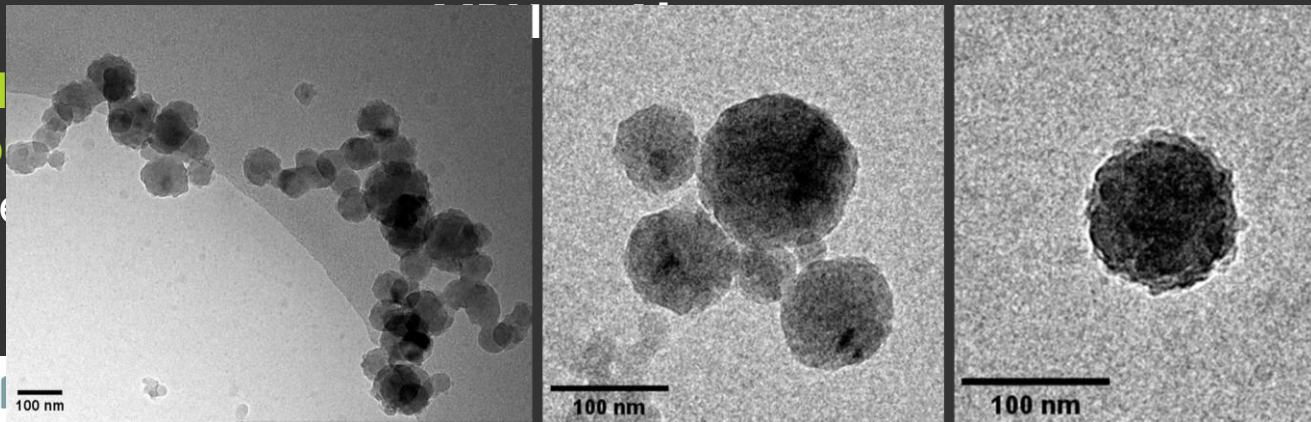


Size distribution

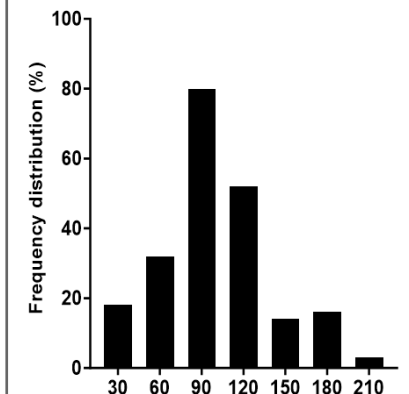
MPN blank



- A **similar distribution** obtained by NTA

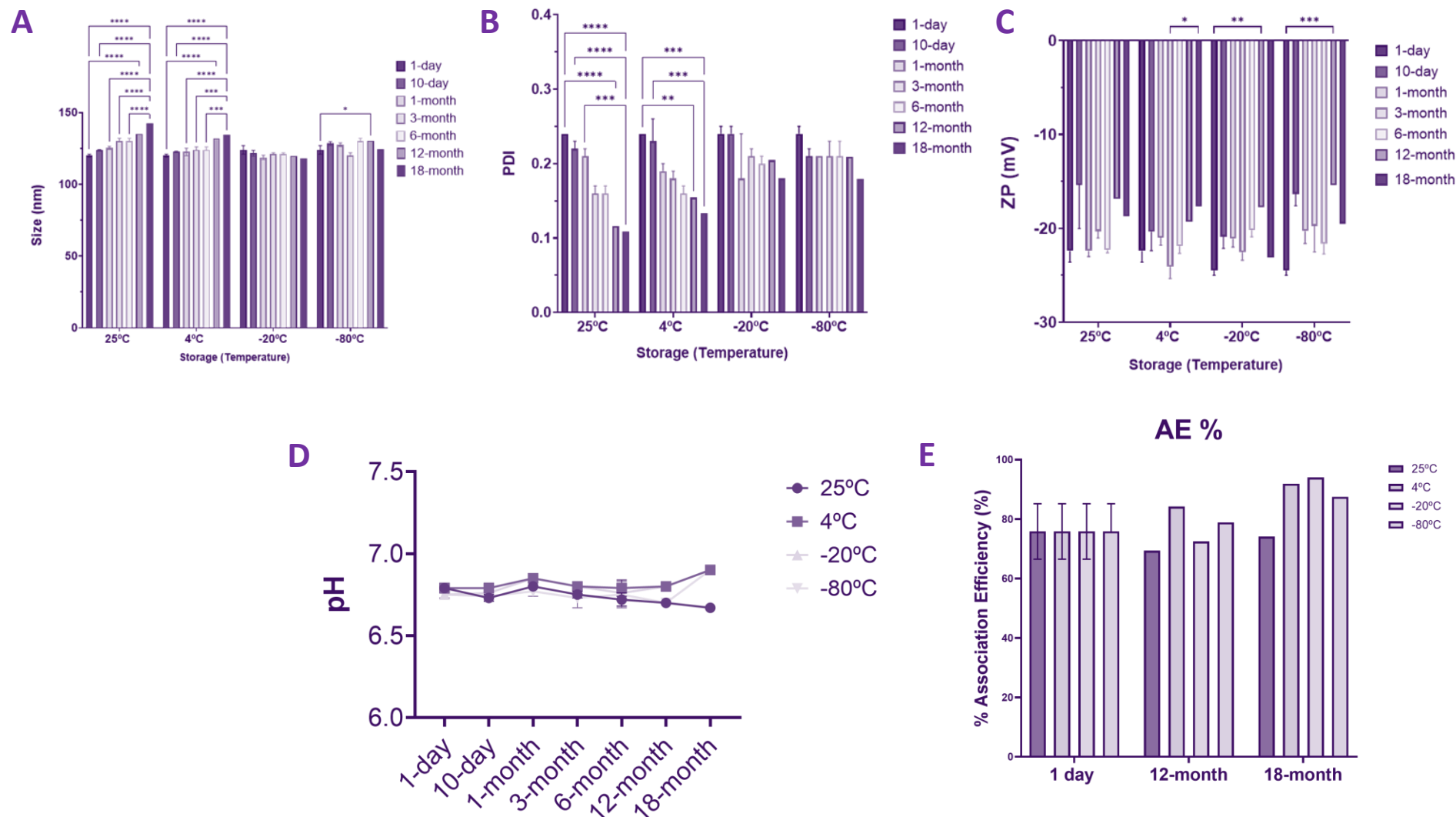


MPN-mAb



MPN-mAb: Stability under Storage

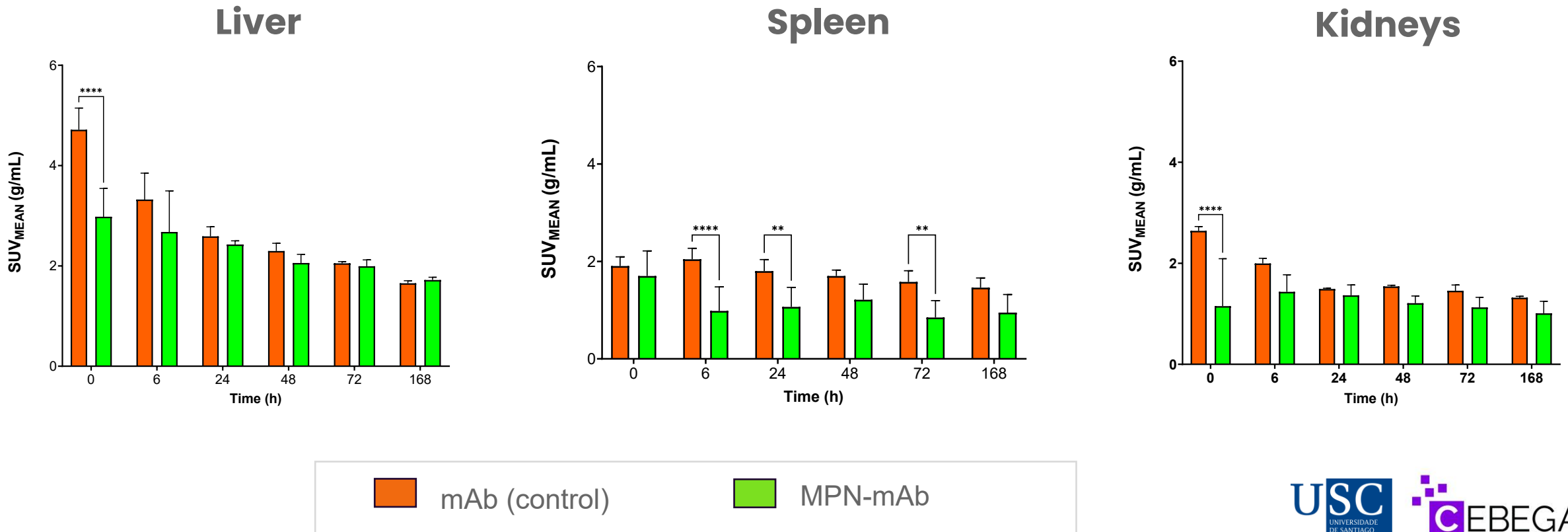
MPN-mAb formulations **are stable under storage either in suspension or frozen:** lyophilization is feasible but unnecessary at least for early clinical trials



Stability analysis of the formulation G03_A2.0_001 scale 500 mL evaluating (A) Size, (B) PDI (C) ZP (superficial charge), (D) pH and (E) mAb association efficiency (AE%) at different time points: 1 day, 10 days, 1 month, 3 months, 6 months, 12 months and 18 months. Formulations were stored at temperatures 25°C, 4°C, -20°C and -80°C. Statistical analysis: Two-Way ANOVA post-hoc Tukey (* $p > 0.05$; ** $p < 0.01$; *** $p < 0.0001$). Data expressed as Mean \pm SD.

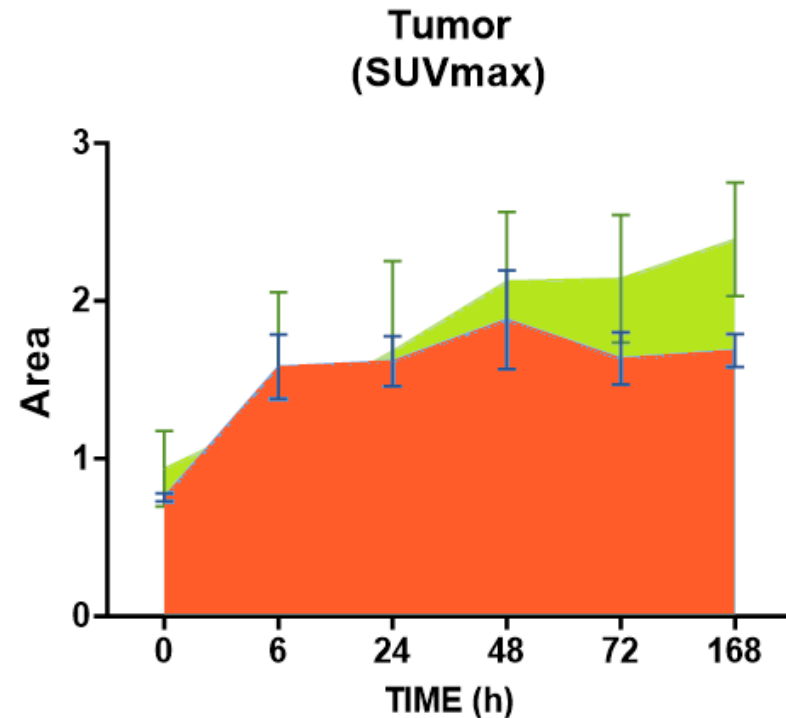
G03_A2.0_001
(Scale 500 mL)
Lot. 20230727

Overall, MPN-mAb elicited a similar uptake of mAbs by kidneys and liver, and lower by spleen as compared to free mAb

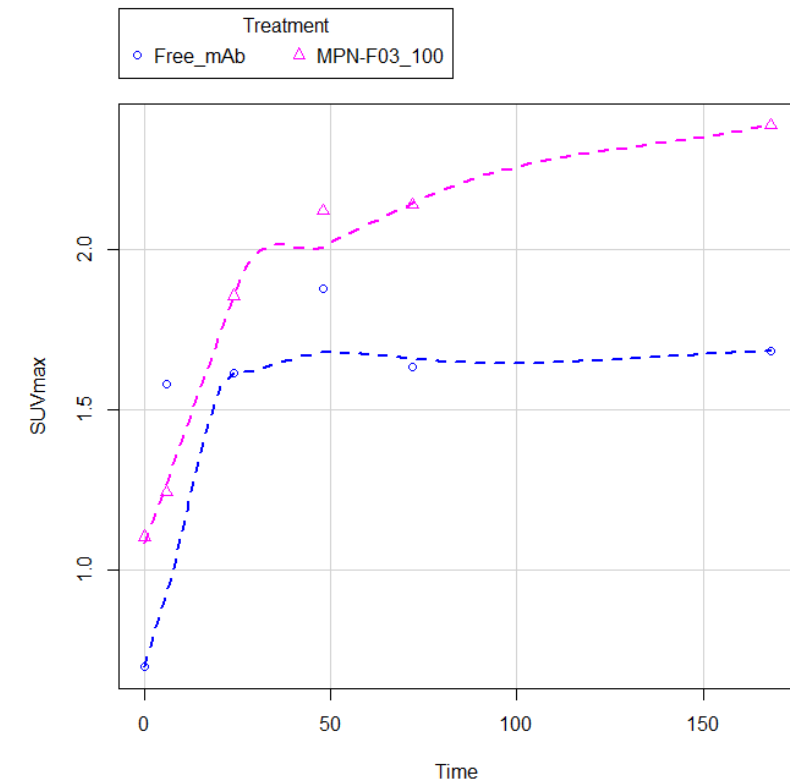


Statistical analysis: Two-Way ANOVA post-hoc Bonferroni ($p < 0.05$; ** $p < 0.01$; **** $p < 0.001$). Data expressed as Mean \pm SD ($n = 3$ or 4)

MPN-mAb provided an increasingly higher biodistribution of mAbs to the tumor during at least 7 days



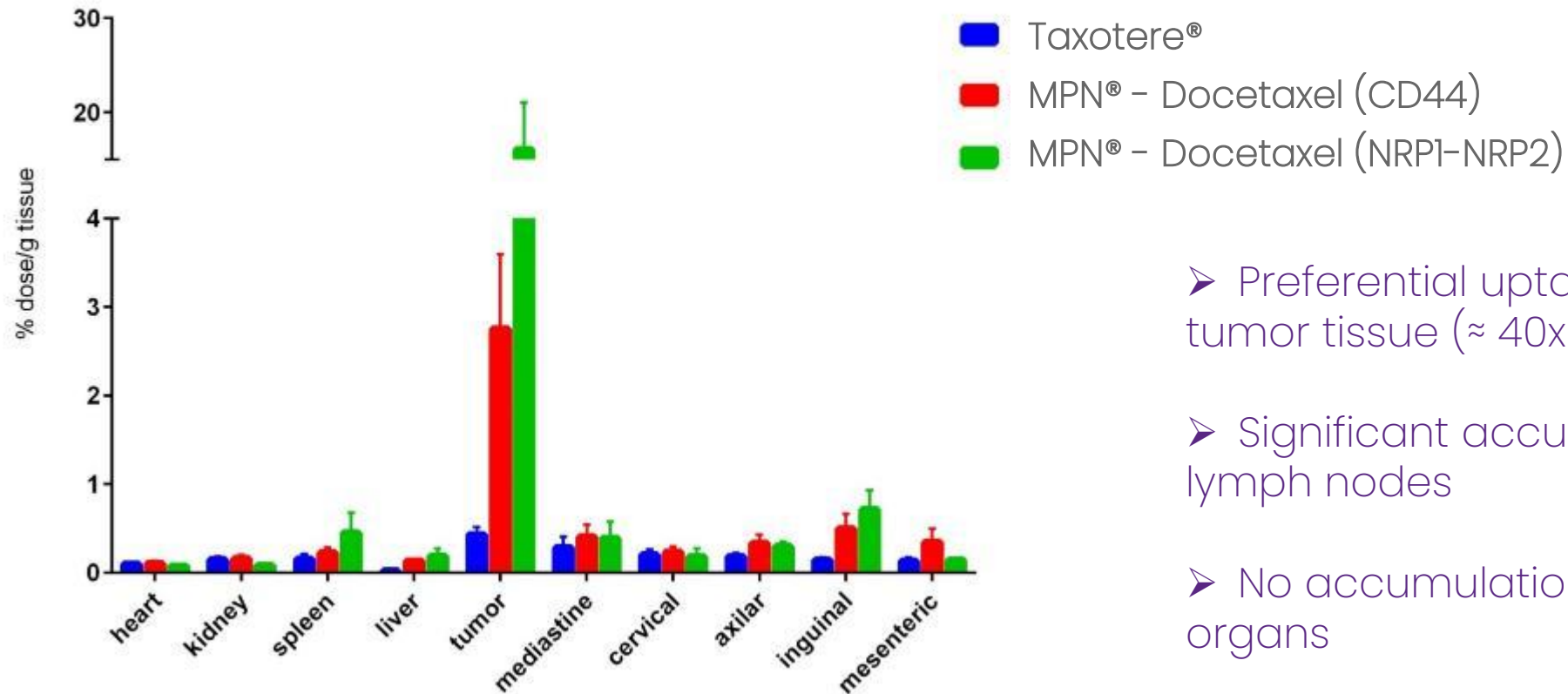
■ mAb (control) ■ MPN-mAb



AUC: free mAb (279.05) vs encapsulated (351.34)

22 MPN-Docetaxel: Biodistribution

Best-In-Class Biodistribution Profile



➤ Preferential uptake by tumor tissue ($\approx 40\times$ vs. Taxotere®)

➤ Significant accumulation in lymph nodes

➤ No accumulation in vital organs

Clinically relevant metastatic orthotopic lung cancer model

Dose: 10 mg/kg

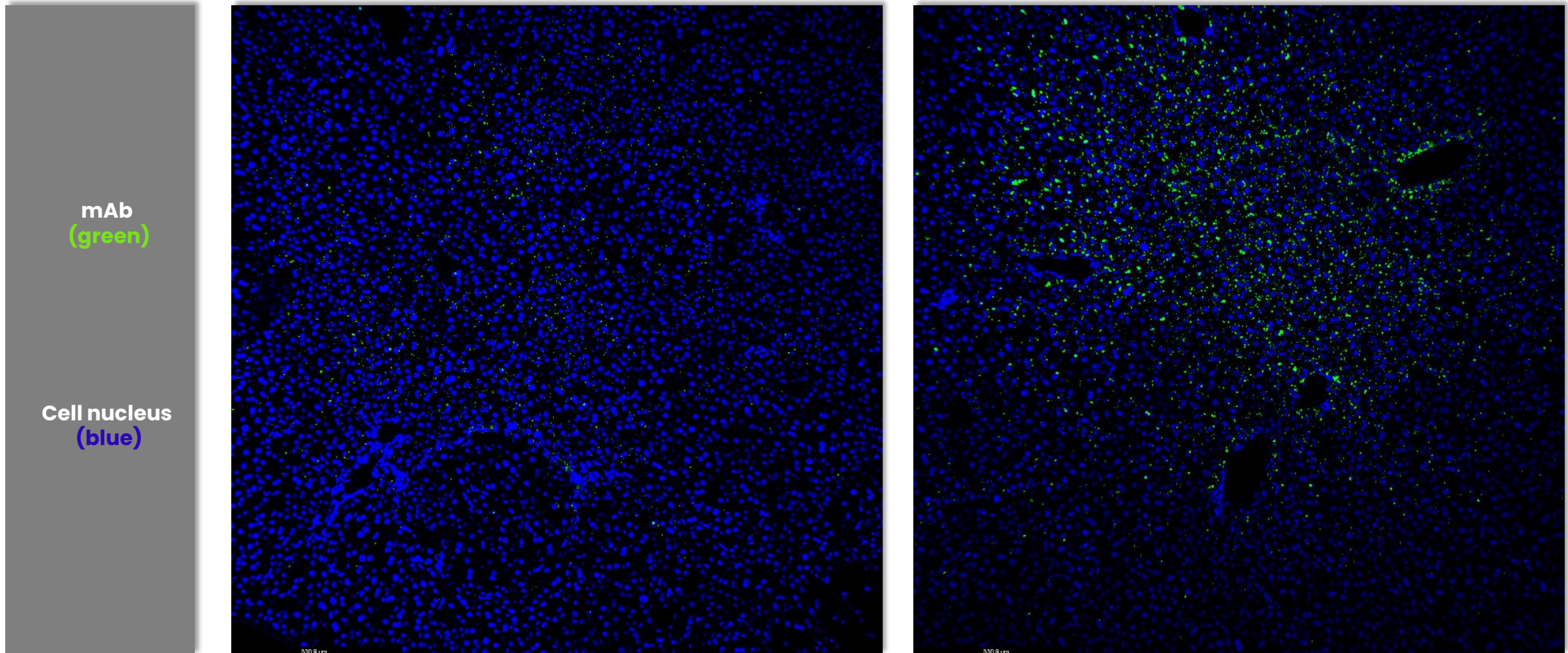
23

Example of diffusivity: hepatic fibrosis mAb

MPNs elicits much superior mAb biodistribution and homogenous diffusivity into the liver

mAb

MPN-mAb



Liver images; Immunofluorescence; **8 days after IV administration** (single dose: 10 mg mAb/kg); healthy animals

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24 MPNs offer multiple differentiated advantages

Optimal Biodistribution

- ✓ **Good Stability in Plasma**
 - Minimal Protein Corona
 - Extended blood circulation
- ✓ **No massive accumulation in liver and spleen**
- ✓ **Higher biodistribution of mAbs to tumor**
- ✓ **Better diffusivity of mAbs in tumor and different organs** (e.g. brain, liver)

Clinical Translatability

- ✓ **Efficacy at regular doses** (5-10 mg mAb/kg)
- ✓ **Safety**
 - FDA/EMA approved GMP ingredients
 - Safe at doses up to 50 mg mAb/kg
 - Non immunogenic
- ✓ **Feasible Human/Vet Dosing**
 - Suitable mAb concentration range

Simple CMC

- ✓ **Scalable & Sustainable Manufacturing**
 - Scaled to 4 liters
 - No solvents, heating or high energy
 - Low COGs
 - 100% intact mAb recovery
- ✓ **High Stability in Storage**
 - > 18 months (ongoing)
 - Lyophilisable

MPNs: Multifunctional Polymeric Nanocapsules

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25 Example of license terms

Term Sheet signed 27 August 2024 with [undisclosed]

Development Milestone	Payment (per Product)
Annual Technology Access Fee (TAF for development phase, post initial SOW and before starting additional R&D work with or without Libera Bio)	€ 200,000/year
First patient dosed in Phase I or IND/IMPD Submission, whichever comes earlier	€ 800,000
First patient dosed in Phase II	€ 1,000,000
First patient dosed in Phase III	€ 2,000,000
First Marketing Approval granted	€ 3,000,000

Commercialization Milestone	Payment (per Product)
Annual Technology Access Fee (commercialization phase, replaces TAF development phase after the first Market Authorization is obtained)	€ 400,000/year
Sales-based Milestones:	
Upon reaching Net Sales of \$100 Million	€ 2,500,000
Upon reaching Net Sales of \$250Million	€ 5,000,000
Upon reaching Net Sales of \$500 Million	€ 10,000,000

Commercialization Royalty	%
Royalty Fee on Net Sales (MPN-Klotho-mRNA version)	5%
Royalty Fee on Net Sales (MPN-Klotho-protein version)	8%