Custom Built Biology for Patients

JPMorgan Global Healthcare Conference
January 2021

Molecular Partners AG, Switzerland
(SIX: MOLN)

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Pioneering DARPin® Solutions

We translate the unique properties of the **DARPin® drug class** into patient value

We build a **broad pipeline** of DARPin® therapeutics to address unmet medical need

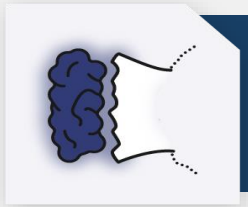
We aim to transform the lives of people with *serious diseases* by delivering truly innovative solutions

our purpose

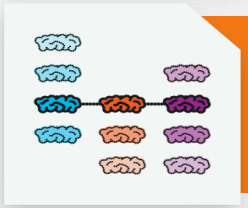
A global team united around a common purpose of making a positive impact in patients' lives

Innate Advantages Combined With Proprietary Approaches

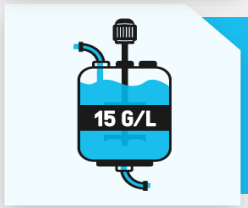
Unique DARPin® Features



Ideal binding properties
- Perfect fit
- High affinity
- Super specificity



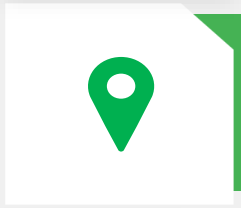
Turn-key multi-specifics
- Small size
- Uni-domain activity
- Up to 7 binders
- Open combinatorial space



Manufacturing & Storage
- High-yield microbial expression
- High stability

DARPin® Benefit

Tailored Grip
- Match disease requirements

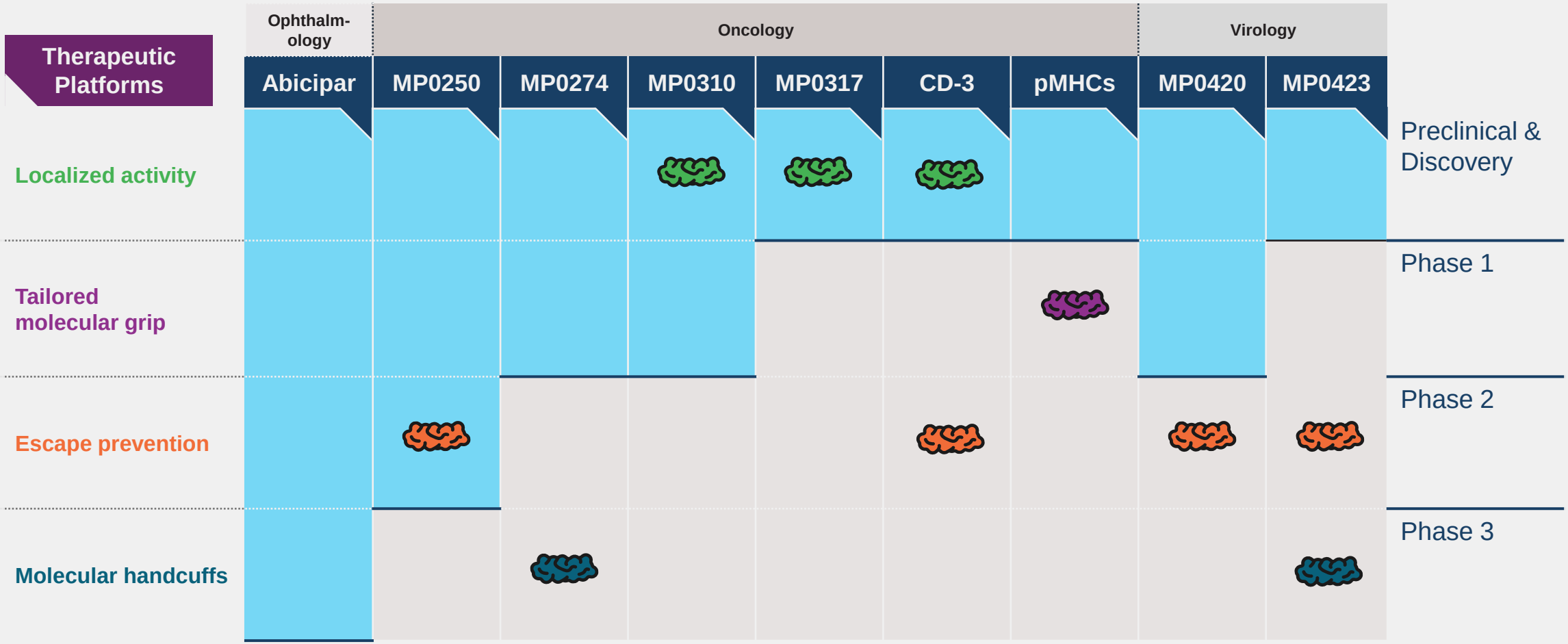


Localized Activity
- Local and temporal control of activity

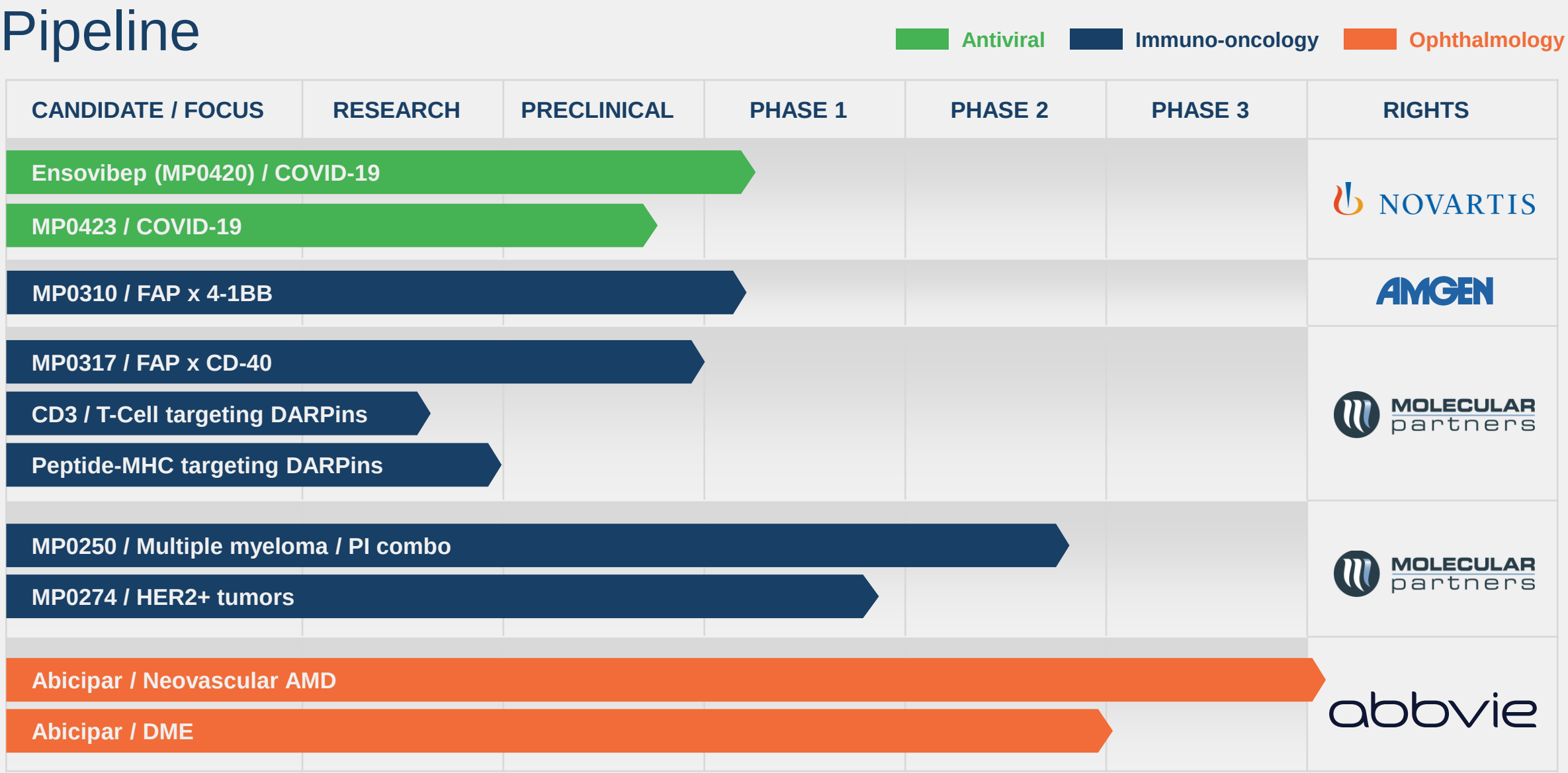
Molecular Handcuff
- Full shut-down by conformational freeze

Multi-blocker to prevent escape
- Overcome escape pathways oncology / ID

A Portfolio Strategy Delivering Growth And Innovation



Pipeline


Antiviral
Immuno-oncology
Ophthalmology
CANDIDATE / FOCUS
RESEARCH
PRECLINICAL
PHASE 1
PHASE 2
PHASE 3
RIGHTS
Ensovibep (MP0420) / COVID-19
MP0423 / COVID-19
NOVARTIS
MP0310 / FAP x 4-1BB
AMGEN
MP0317 / FAP x CD-40
CD3 / T-Cell targeting DARPins
Peptide-MHC targeting DARPins
MOLECULAR partners
MP0250 / Multiple myeloma / PI combo
MP0274 / HER2+ tumors
MOLECULAR partners
Abicipar / Neovascular AMD
Abicipar / DME
abbvie

Synergistic Partnerships Built on a Versatile Drug Class

Ophthalmology

Therapeutic Area Deal

- Partnership for abicipar, two positive Phase 3 studies.
- Received $150m to date; $360m in potential milestones and teens royalty still possible
- CRL (June 2020): AbbVie evaluating next steps with agency

abbvie

Oncology

Product Combination Deal

- Partnership with Amgen to combine AMG 506 / MP0310 with BiTE® molecules
- Phase 1 conducted by MP and Amgen to develop for combination studies
- ~$500m in milestones and mid teen royalties

AMGEN®

Virology

Capability Deal

- Leverage production, global development and distribution of Sandoz Novartis for MP0420
- ~$165m milestone payment upon commercialization licensure
- 22% royalty on sales

NOVARTIS

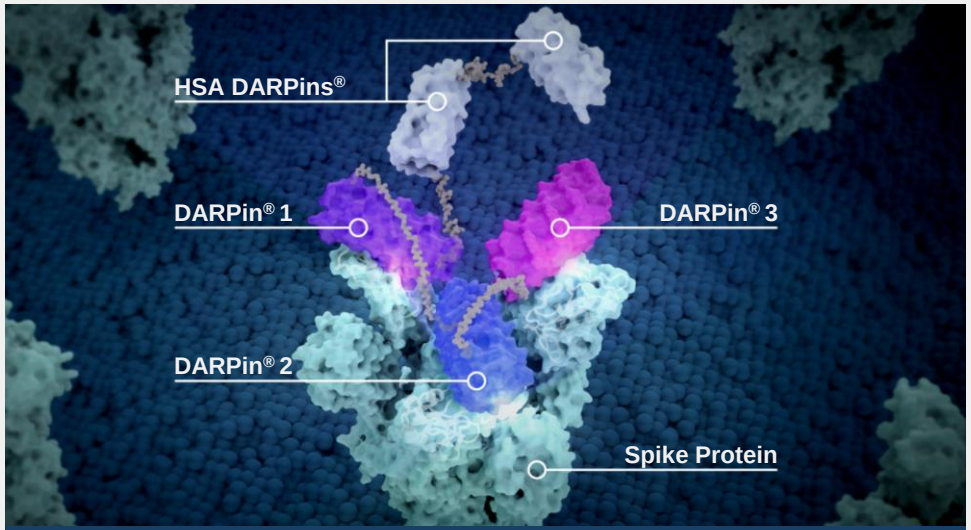
Over ~$1B in potential milestone across multiple programs

Clinical Program: Anti-COVID19

Our COVID-19 Program: Two Outstanding Candidates

MP0420 (ensovibep)– best-in-class

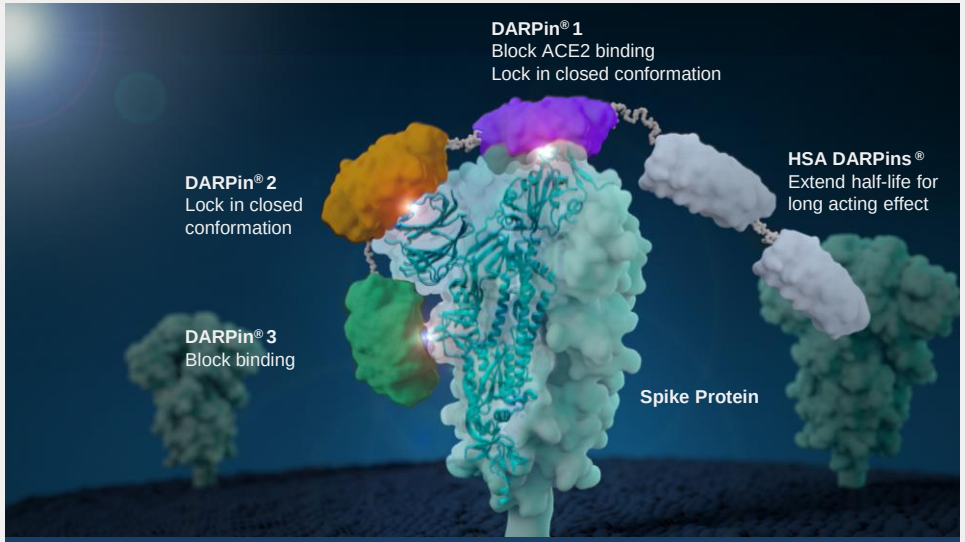
- Tri-specific DARPin® antiviral targeting the RBD for highest potency & to prevent viral escape
- Long half-life (HSA DARPins) – single injection
- Low costs and high numbers of doses available
- Potential for bolus / s.c. injection – simple application



Immediate solution for hospitalized and ambulatory settings

MP0423 – first-in-class

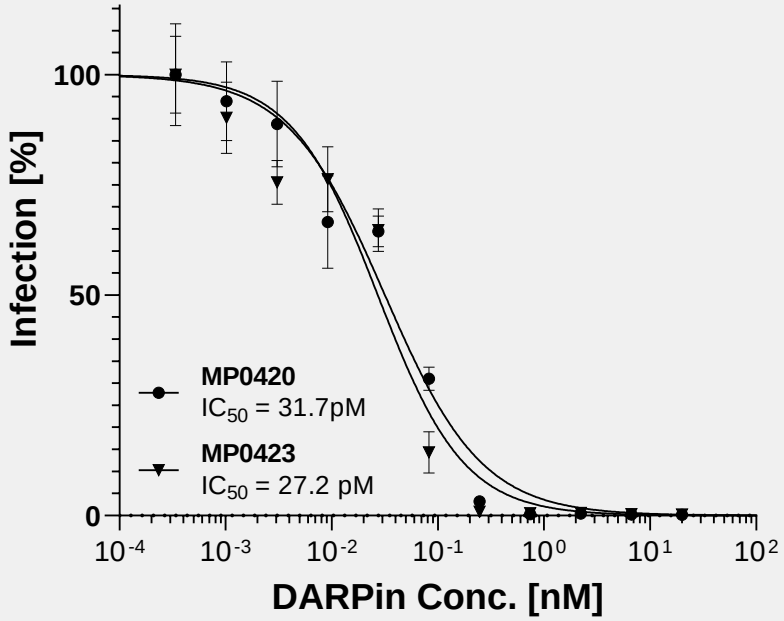
- 3 DARPins blocking different domains of the viral spike
- High activity even if RBD mutates heavily and escapes all vaccines and therapeutic antibodies
- All other benefits of MP0420



Ideal solution for stock-piling and global insurance policy for viral RBD drift

High Potency Inhibition Translates To *In Vivo* Prophylactic And Therapeutic Properties

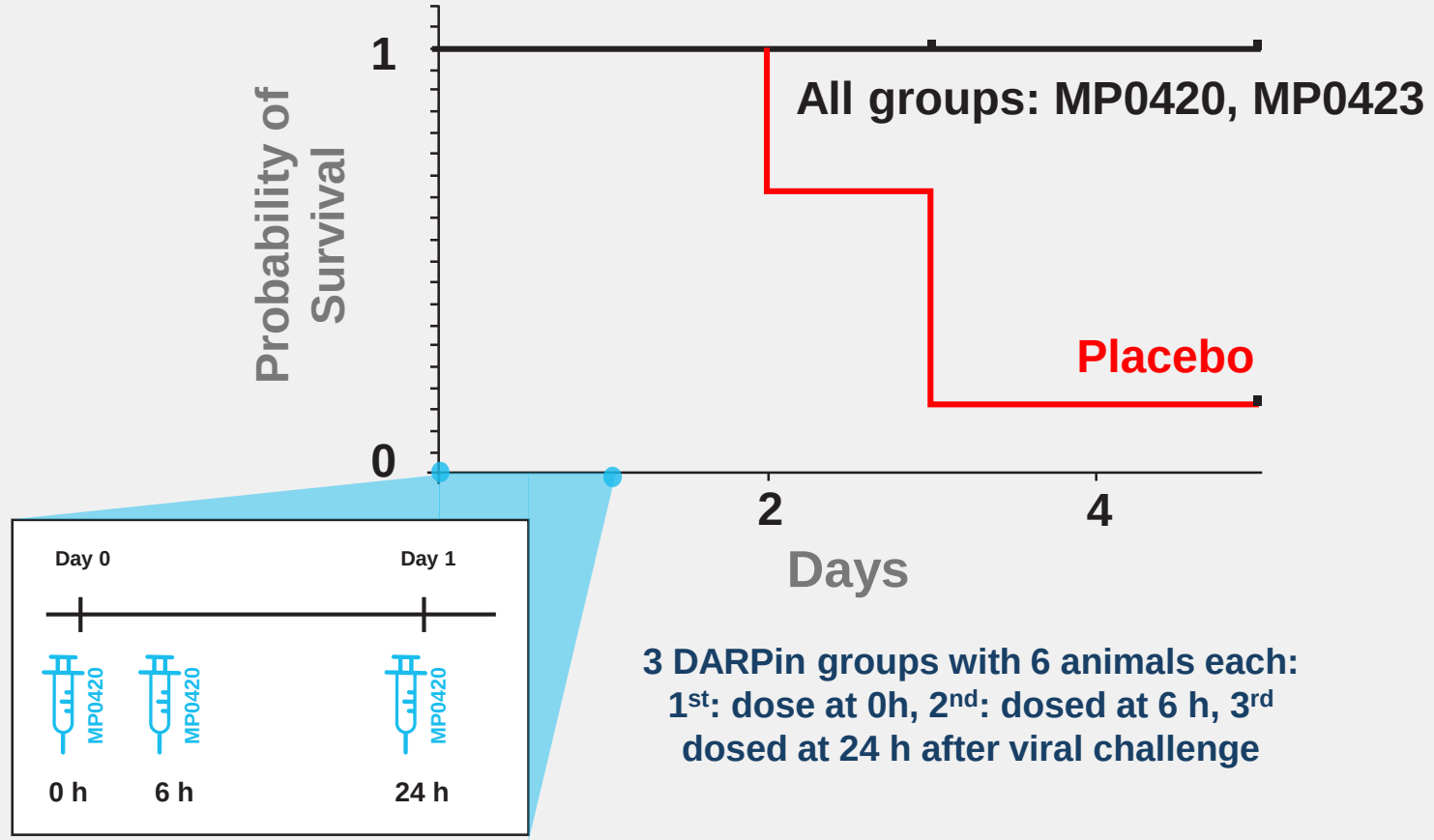
In vitro activity: Pseudotype Neutralization Assay



Highest potency

Tri-binding leads to highest affinity and potency in the low pM range; likely at the assay limit

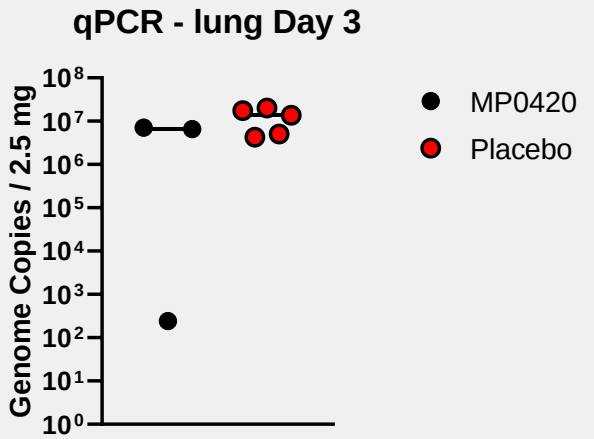
In vivo activity: Kaplan Meier Plot - Hamster Model (6 animals per group)

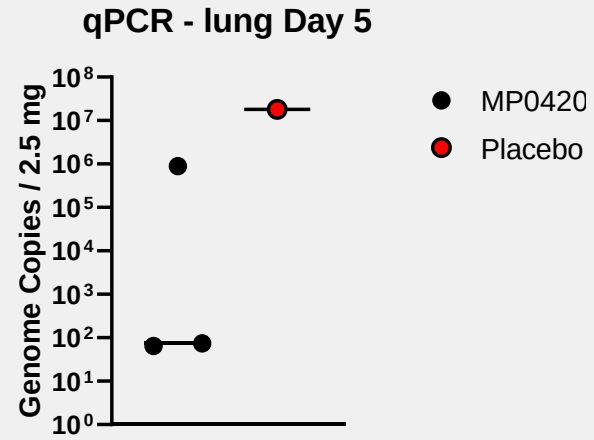


3 DARPin groups with 6 animals each: 1st: dose at 0h, 2nd: dosed at 6 h, 3rd dosed at 24 h after viral challenge

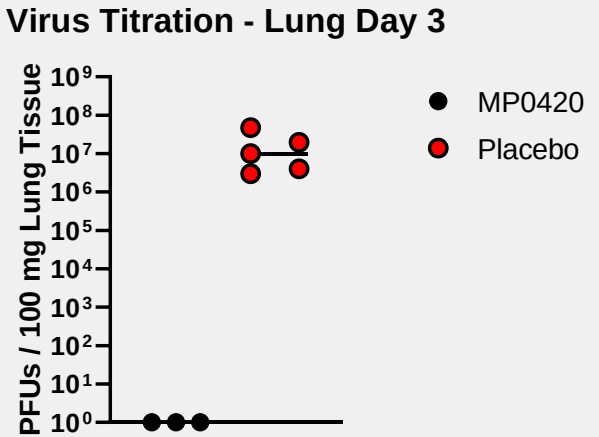
Ensovibep Blocks the Virus and Prevents Infection in the Lung

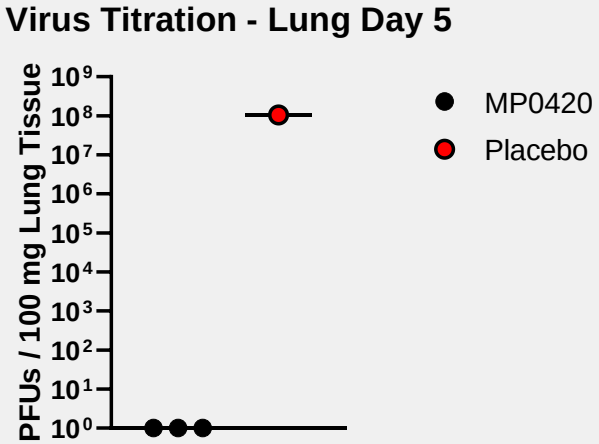
Viral titer in the lung





Viral infectivity in the lung





Ensovibep blocks viral infectivity completely

MP0420 (ensovibep) Phase 1 Ongoing

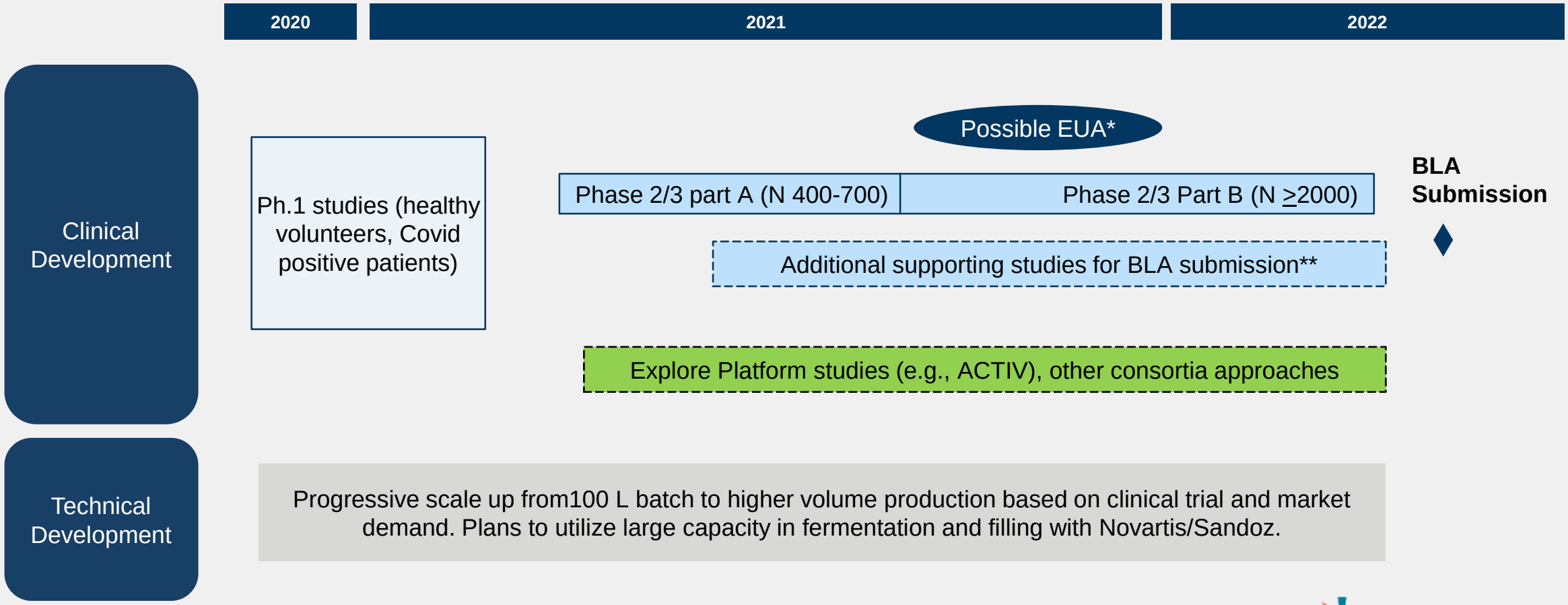
- Study initiated November 2020, first cohort fully enrolled
- Double-blind, placebo controlled trial exploring safety and PK.
  - IV administration
  - Up to 24 subjects total, stratified 3:1 (active: placebo)
  - Ages 18-65
- Dose range include 3 mg/kg (225 mg*), 9 mg/kg (675 mg) and 20 mg/kg (1.5 g)
  - MP0420 is ¼ the molecular weight of an mAb mixture, corresponding to ~ 900 mg, 2.7 g, 6g
- Endpoints: Safety, tolerability and pharmacokinetics (SAD)
- Status: First 2 cohorts fully enrolled, third cohort ongoing.

Full data expected by Q1 2021

* Total amount in a person with 75 kg body weight

Novartis: Draft Development plan for MP0420

ALL DATES PRELIMINARY, SUBJECT TO HEALTH AUTHORITY INPUT



* Emergency Use Authorization submission, pending interim analysis of data is supportive of EUA
** Could involve additional dosing/ administration or treatment subtypes/ settings

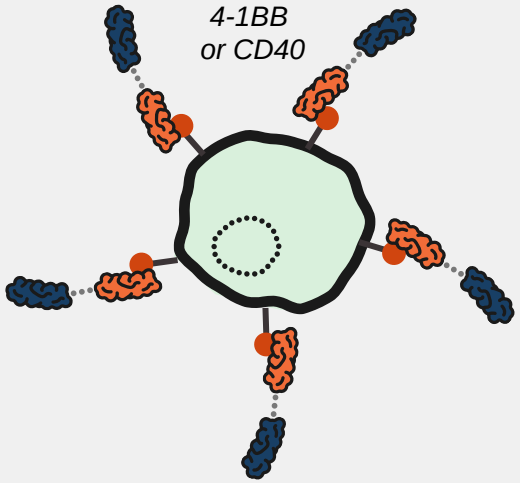
NOVARTIS

Clinical Programs:
Tumor Localized Activators

Local Activation of Immune cells: Fibroblast Activation Protein (FAP) as a General Switch

BODY

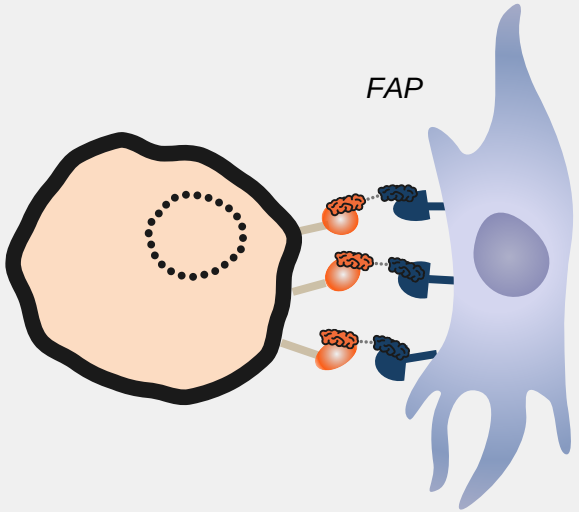
- In normal tissues, receptor is broadly distributed
- Immune cell remains inactive

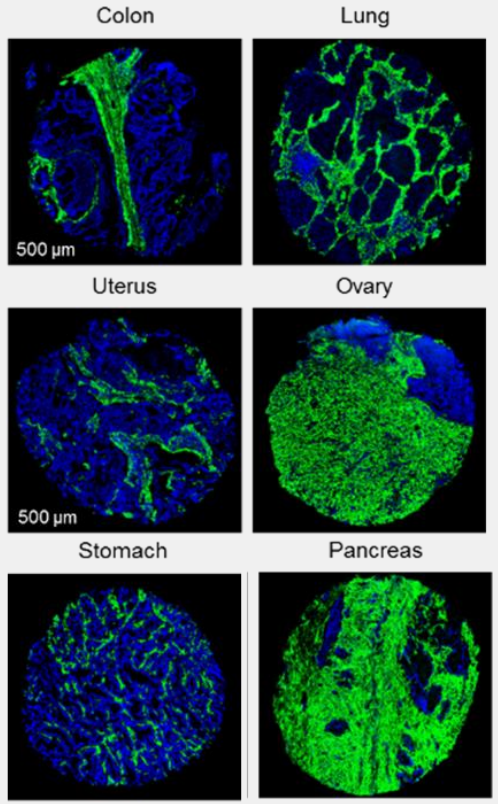


VS

TUMOR

- High FAP concentration near tumor clusters receptors
- Immune cell is activated





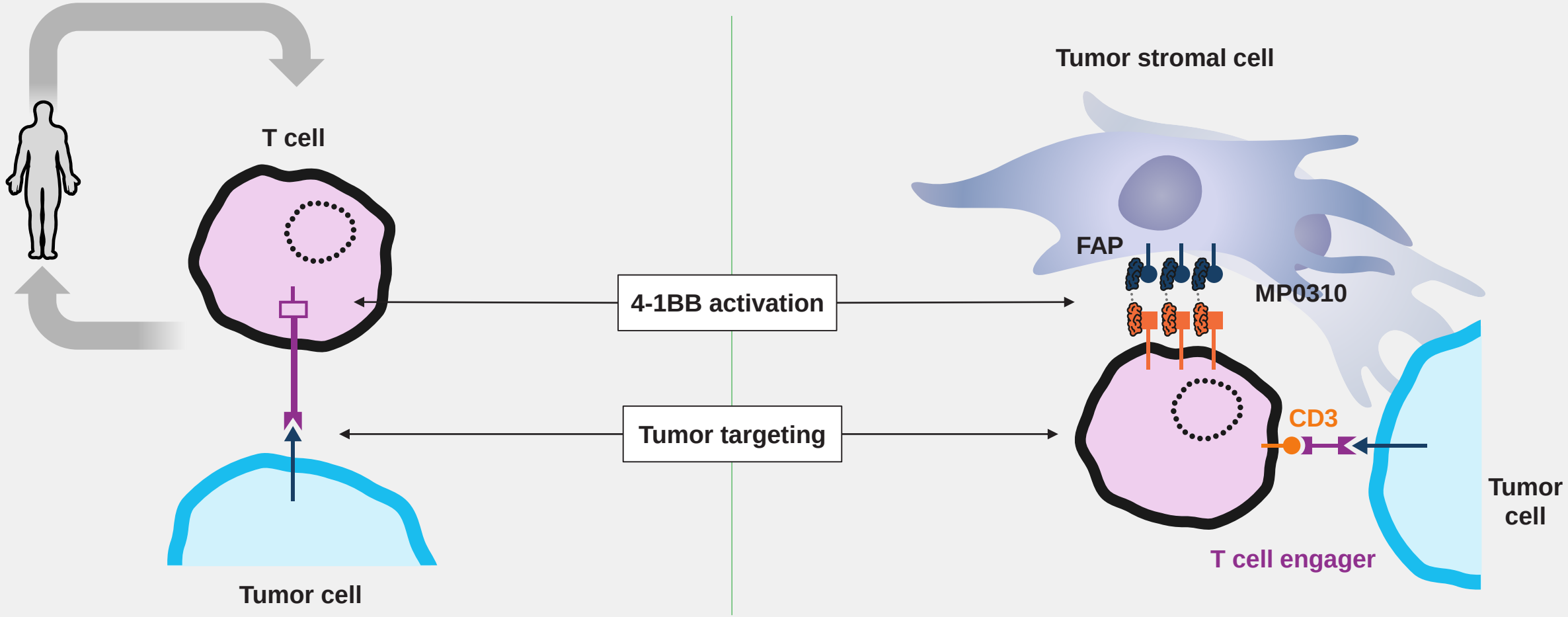
Human FAP, DAPI

- No activation by mono-binding of FAP or CD40/4-1BB
- Simultaneous binding leads to tumor-local immune activation

Application: Local T Cell Targeted Activation

Traditional CAR-T

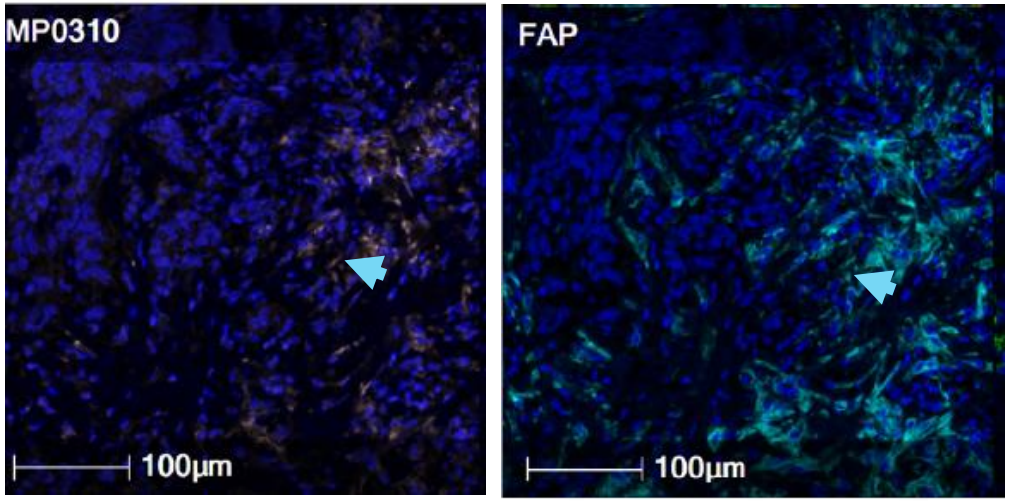
“CAR-T *in situ*”



AMG 506 / MP0310 Accumulates in Tumor Tissue in Dose Dependent Manner

MP0310 (0.5mg/kg) colocalizes with FAP

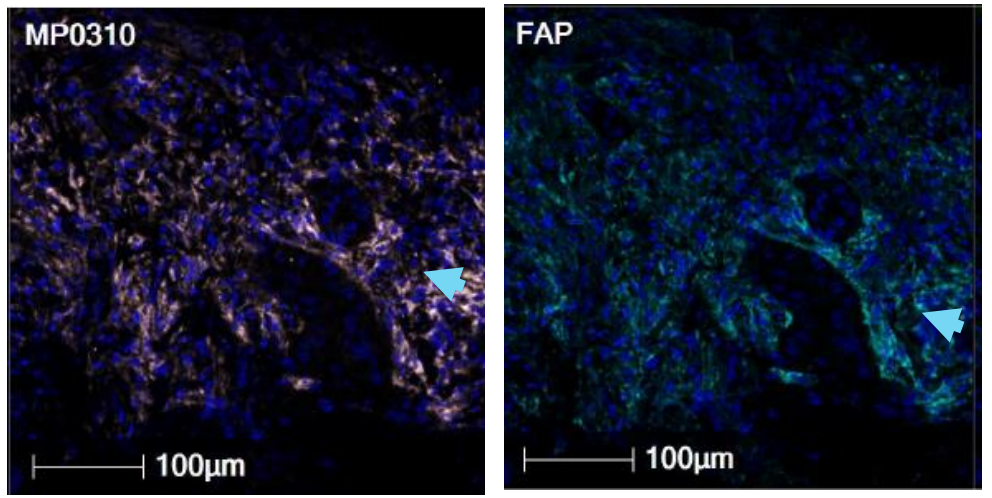
MP0310 < FAP



Endometrial carcinoma (Liver metastasis), C1D15

MP0310 (5mg/kg) saturates FAP

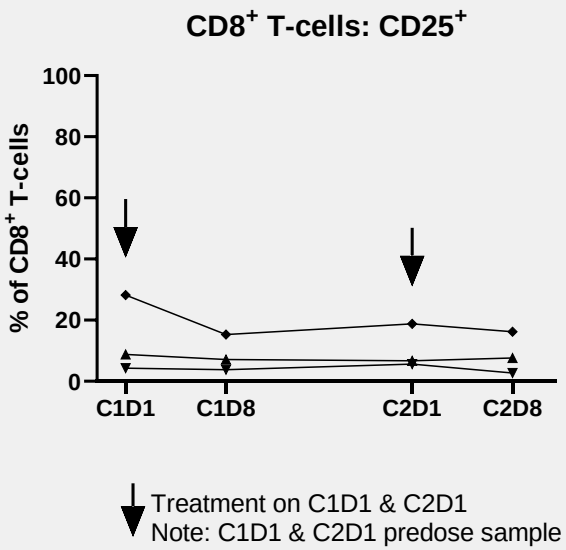
MP0310 > FAP



NSCLC (lung), C1D15

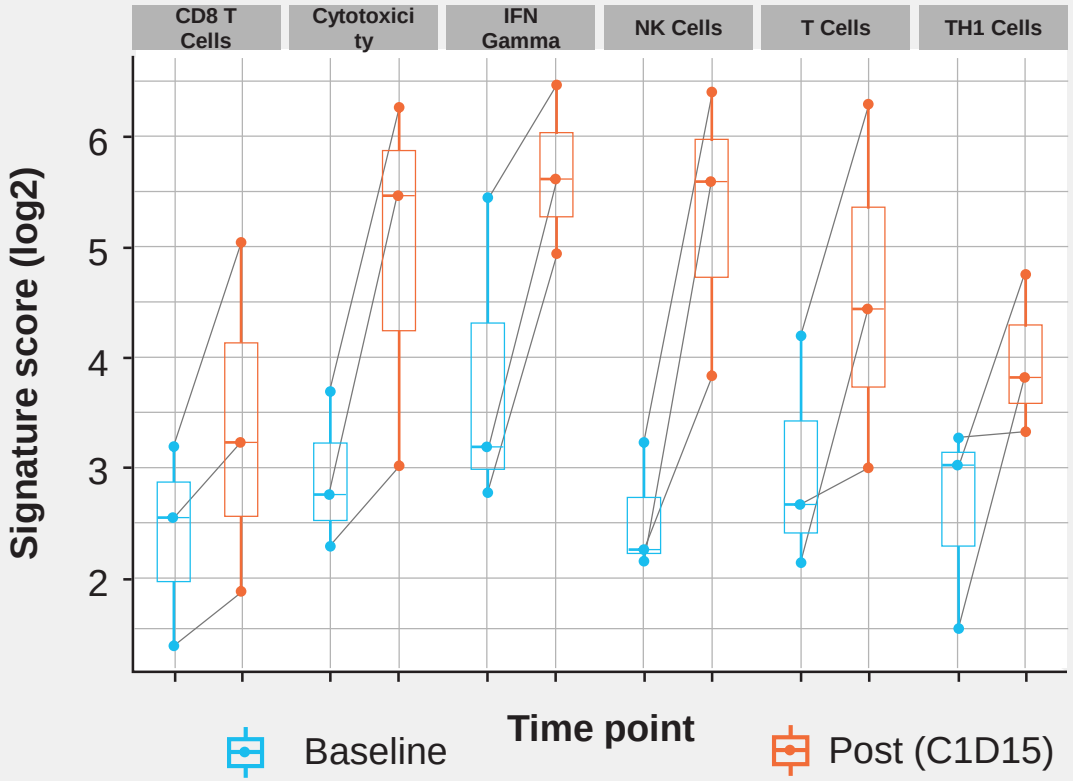
PD Activity in Paired Biopsies Supports AMG 506 / MP0310 MoA on 4-1BB Activation

BLOOD



- In the blood, immune cells remain inactive (CD8+ & CD4+ T-cells, Treg, NKT, B-cells, NK)

TUMOR



- In the tumor, T-cells and NK cells are activated

AMG 506 / MP0310 Dose Escalation Completed

Current status

- Executed on schedule through 2020
- 22 patients enrolled, 19 presently evaluable
- 7 dosing cohorts, 8 patients with ≥4 cycles
- 12 patients exhibited infusion related reactions (IRR) G2-3, (22 enrolled)
- No other AEs of special interest
- **No Dose limiting toxicities (DLTs)**

Outlook

- Test weekly dosing
- Show sustained activity after week 4
- Reach evaluation by Amgen

Data as of 30 Nov 2020

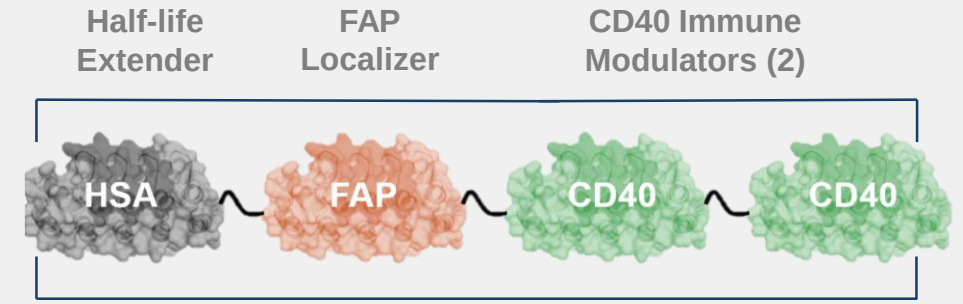
MP0317: Localized Activation of CD40

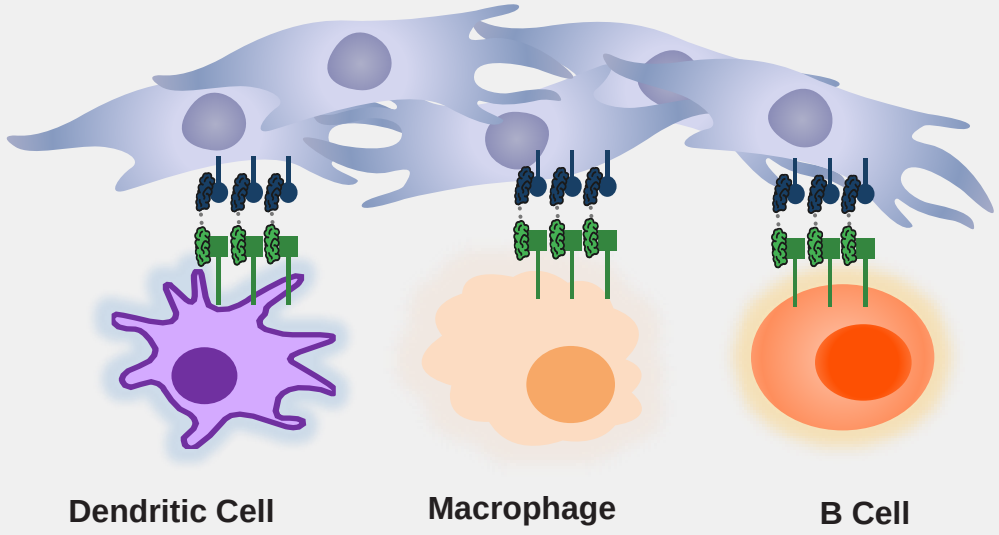
Current limitations and opportunity

- Rather low MTDs for systemic antibody agonists (< 1mg/kg)
- Likely need for combination therapy leading to additional risks for toxicity

Opportunity

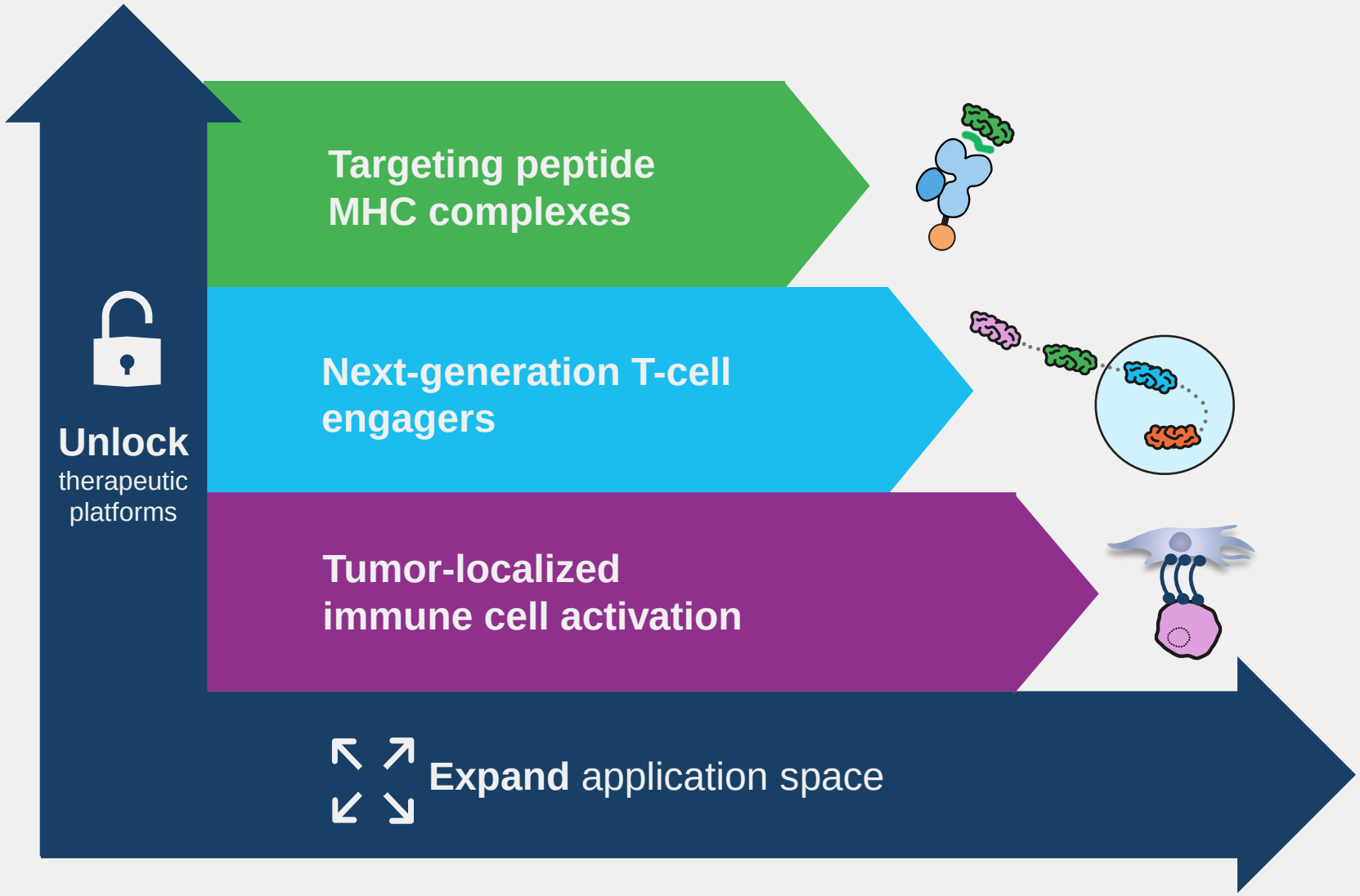
- Localized activation approach to limit systemic side effects and open a therapeutic window for combinations
- FIH H2 2021





New Therapeutic Platforms: Unlocked

Unlock and Expand: Therapeutic Platforms



Current Limitations of CD3 Approaches

Safety

Hyperimmune-stimulation

Neurotoxicity

Cytokine release syndrome (CRS)

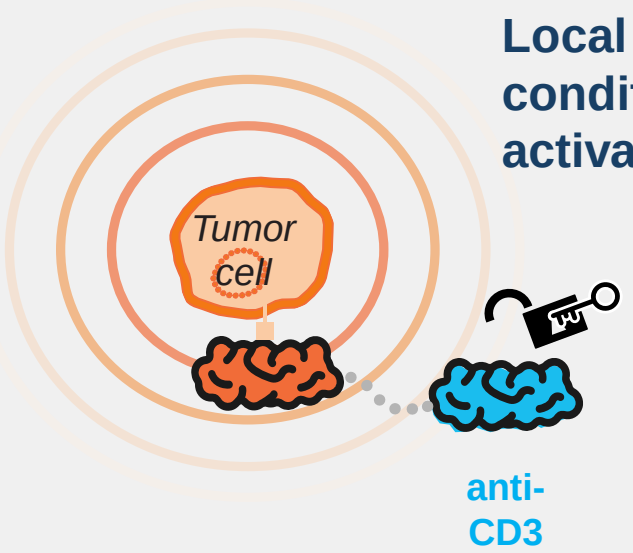
Efficacy

Tumor escape

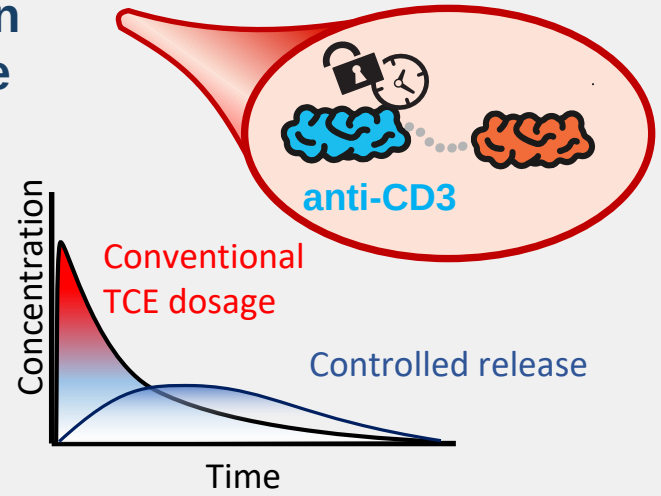
Target engagement

Our Solutions - Next Generation T-cell Engagers

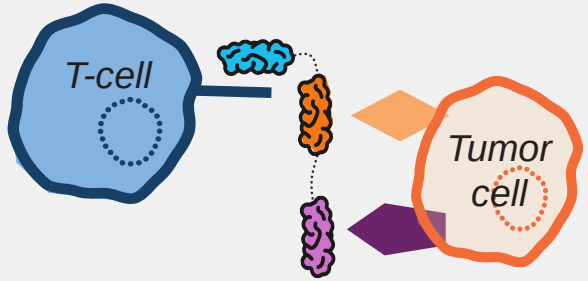
Local & conditional activation



Slow activation over time

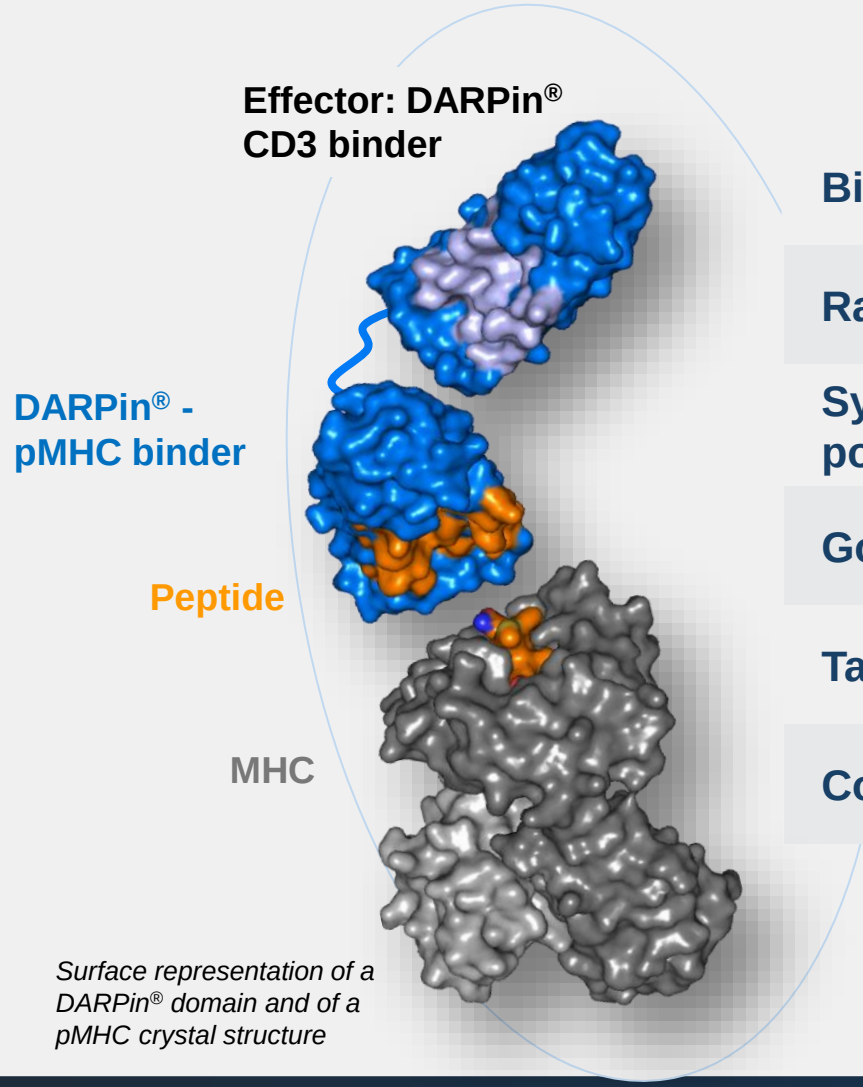


Multi-specific T-cell engagers



Improve safety to allow optimal dosing and
Deepen Efficacy for longer effect

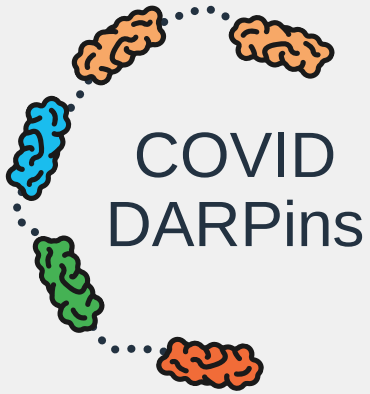
DARPin® Platform Especially well Suited to Address pMHC Targets



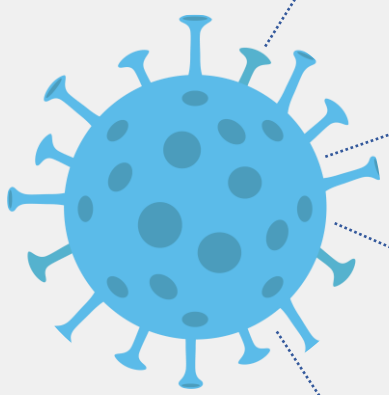
Surface representation of a DARPin® domain and of a pMHC crystal structure

Binders with high specificity and high potency	✓
Rapid and reliable generation of pMHC binders	✓
Systemic half-life extension with limited impact on potency	✓
Good developability properties	✓
Target identification and validation	○
Complex clinical development path	○

DARPin® Opportunities in Virology



- **Multi-valency** for superior potency
- **Multi-specificity** for mutation resistance
- **Speed of candidate generation**
- **High amount & low-cost production**
- **High stability and solubility** for simple administration and distribution



Respiratory Viruses
- RSV, influenza and others
- Benefits as per COVID DARPin®

Pandemic readiness
- Corona, influenza
- Early intervention to prevent spread

Viral reservoirs
- HIV, HBV, HCV
- Targeting pMHC

Low-income country viruses
- Example: dengue
- High stability
- Low costs

Summary

Financial Overview & Milestones:

- Cash end November, 2020: ~$200m, no debt
  - Expense guidance for FY2020: CHF 65-75m
  - Successful capital raise of CHF 80m, completed in early July 2020
- Additional funding from Novartis transaction (CHF 60m, received per end October 2020)
  - Funded into 2023, without consideration of future milestones
- ~$1B in potential milestones from R&D partners yet to be realized
  - $165m milestone from Novartis upon commercial licensure of COVID-DARPins
  - ~$500m in milestones from Amgen for AMG 506 / MP0310
  - >$360M in approval and commercial milestones associated with Abicipar
- Up to double-digit royalties outstanding with current R&D partners

Upcoming Catalysts Across The Portfolio in 2021

Antiviral portfolio	
MP0420 (ensovibep) MP0423	▪ POC with EUA/BLA and approval in 2021 ▪ Emergency Use Authorization and/or BLA submission possible in 2021 ▪ MP0423 FIH
Novel antivirals	▪ Develop novel DARPins for viral targets with first new target announced 2021
Immuno-oncology portfolio	
AMG 506 (MP0310)	▪ Identify ideal dosing regimen in ongoing Phase 1 (H1/2021) ▪ Amgen potential combination trials (H2/2021)
MP0317	▪ MP0317 FIH in H2 2021
T cell engagers	▪ 1st Candidate selected for development ▪ Follow-up pipeline established
pMHC	▪ Select Peptides for Candidate Selection – possibly with a partner

Funded into 2023

(Not incl. any future proceeds related to partnerships)

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Executive Management and Senior Leadership Team

EXECUTIVE MANAGEMENT

Patrick Amstutz, PhD, CEO

- Co-founder, former CBO & COO
- PhD in biochemistry from UZH

Nicolas Leupin, MD, CMO

- Proven track record in drug development
- Former CMO argenx, senior positions at Celgene

Michael Stumpp, PhD, COO

- Co-founder, previously CSO
- PhD in biochemistry from UZH

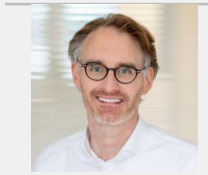
Andreas Emmenegger, CFO

- Former CFO Glycart, Finance Roles at Roche
- >20 years experience as CFO of private & listed companies and in fund raising, IPOs

Senior Leadership Team

Ana Cerdeira, PhD, VP Strategic Planning and Portfolio Strategy

- Former VP Emerging Markets Portfolio Mgmt. Takeda



Julien Gander, General Counsel

- Director Legal & Group Risk Mgmt and Senior Legal Counsel at Lonza

Seth Lewis, SVP IR, Comms, Strategy

- Head of IR and Comms at Surface Oncology, Bavarian Nordic A/S, 9 years at Trout Group

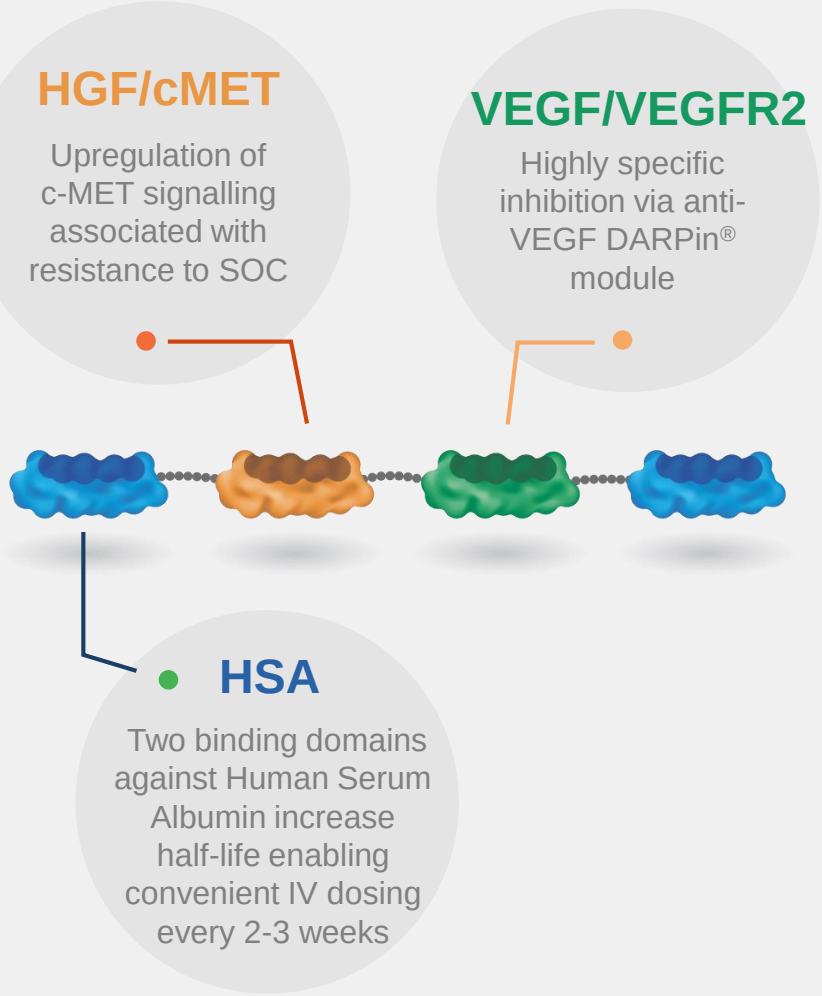
Daniel Steiner, PhD, SVP Head of Research

- Previously responsible for DARPin generation, PK extension, enabling work for DARPin selection

Alex Zuercher, SVP Development

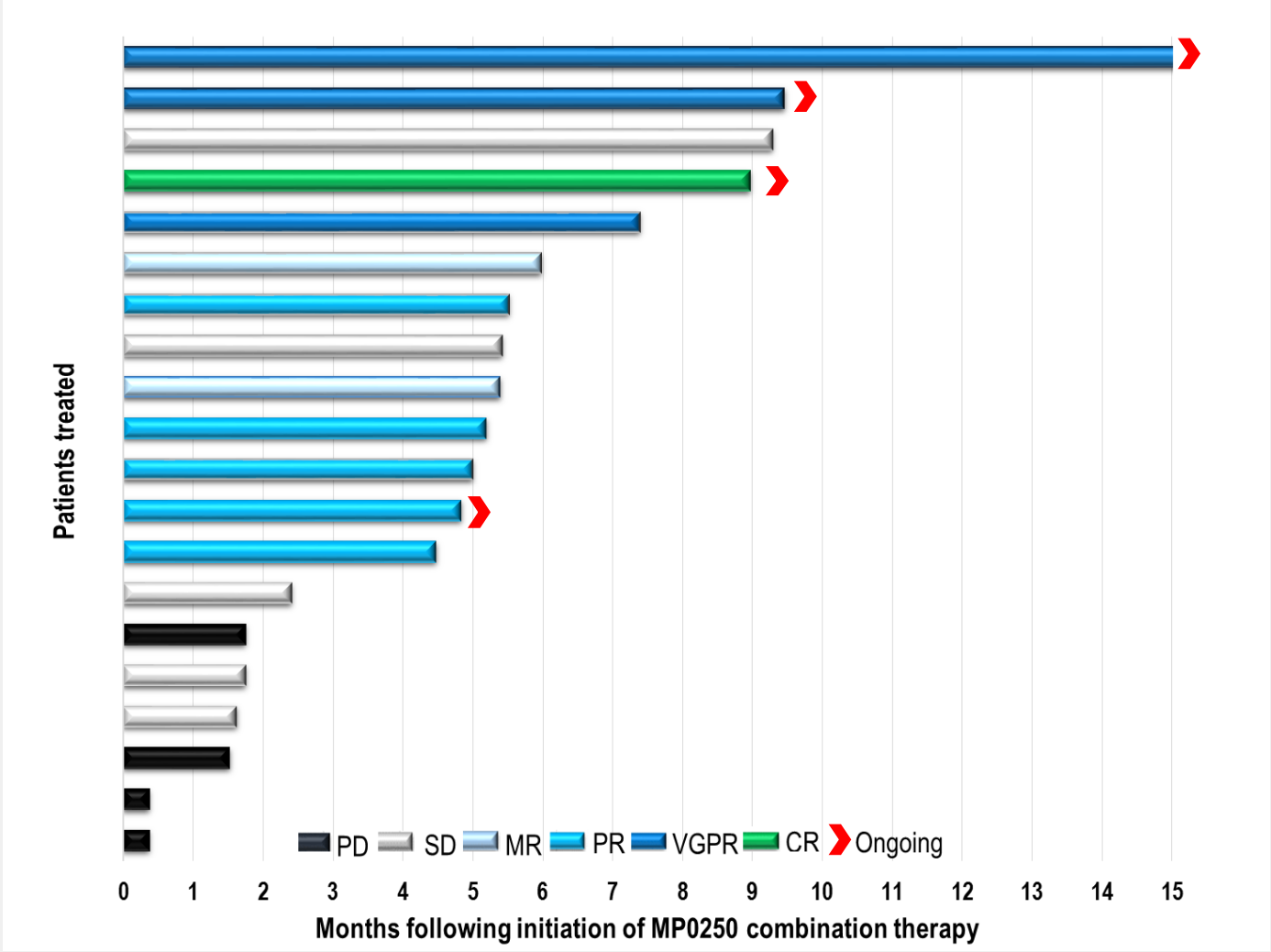
- Previously VP of Operations and Director of CMC at MP
- Cytos Biotechnology and Spirig Pharma

MP0250: First Multi-DARPin® Product Candidate with potential in MM

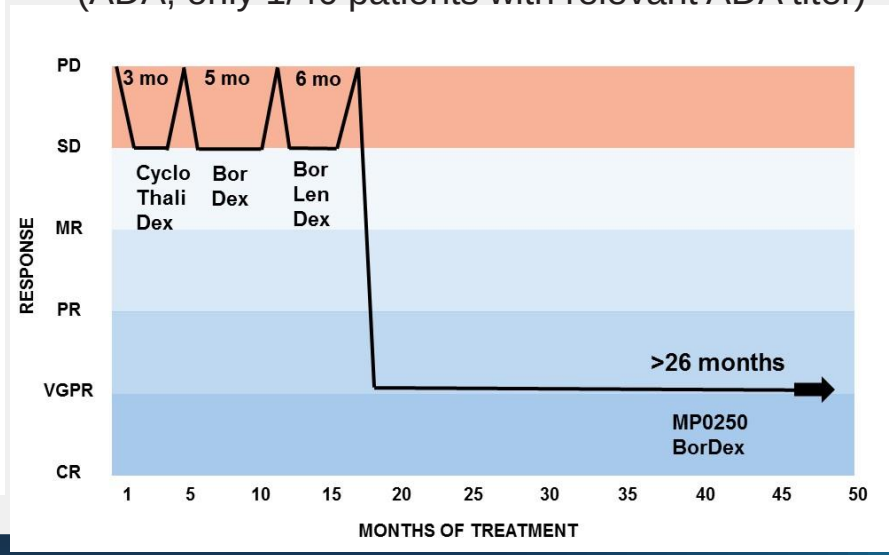


- First in class approach in targeting tumor micro-environment that selectively targets both the VEGF/VEGFRR2 and HGF/cMET pathways simultaneously
- Promising clinical activity in Relapsed/Refractory Multiple Myeloma patients in combination with bor/dex
- Activity also seen in patients that have not responded well or have become resistant to any of the established drug classes. Safety profile in line with MoA.
- Potential to be combined with any drug /class in MM, proteasome inhibitors, IMiDs and antibodies

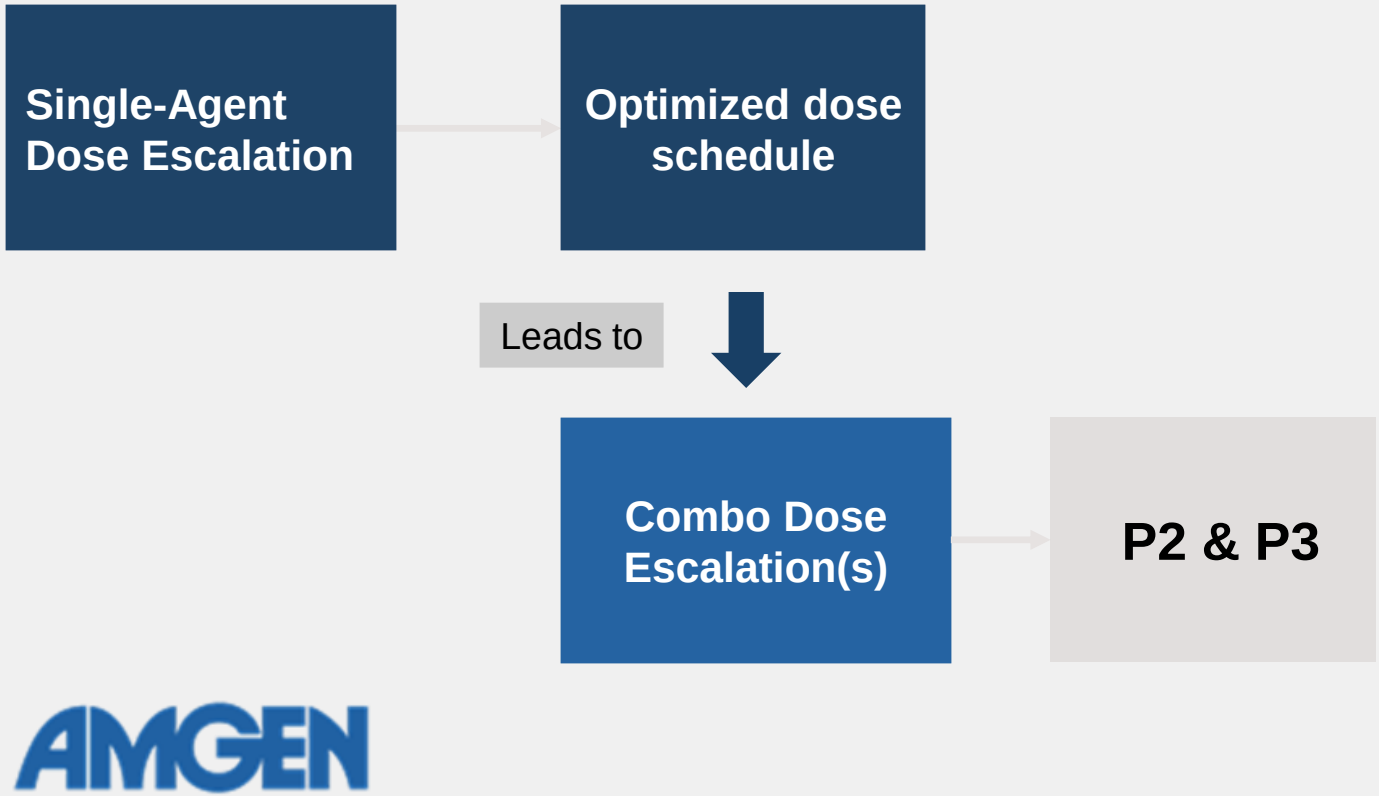
MP0250: Deep and Durable Responses



- **Heavily pretreated patients**, median of 4 prior lines
- **Responses** in patients who had **never responded**
- 4/6 patients coming **directly from Dara** had clinical benefit (incl. 4/5 Dara-refractory patients)
- Infusions well tolerated
- Sustained exposure throughout treatment periods
- No clearing or neutralizing anti-drug antibodies (ADA; only 1/40 patients with relevant ADA titer)



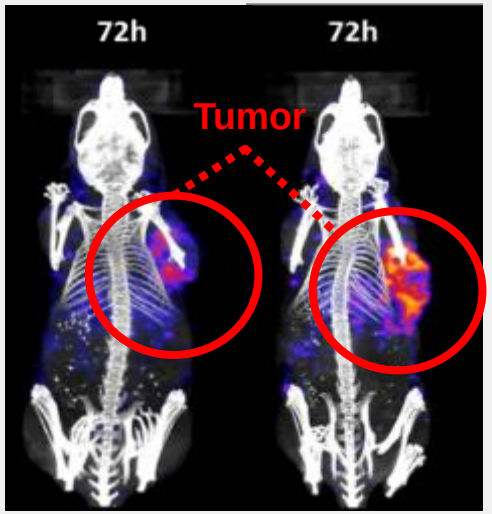
Clinical Plan for AMG 506 / MP0310



Combination of AMG 506 / MP0310 and TAA x CD3 Bi-Specific Results in Significant Increase of Intratumoral CD8+ T Cells

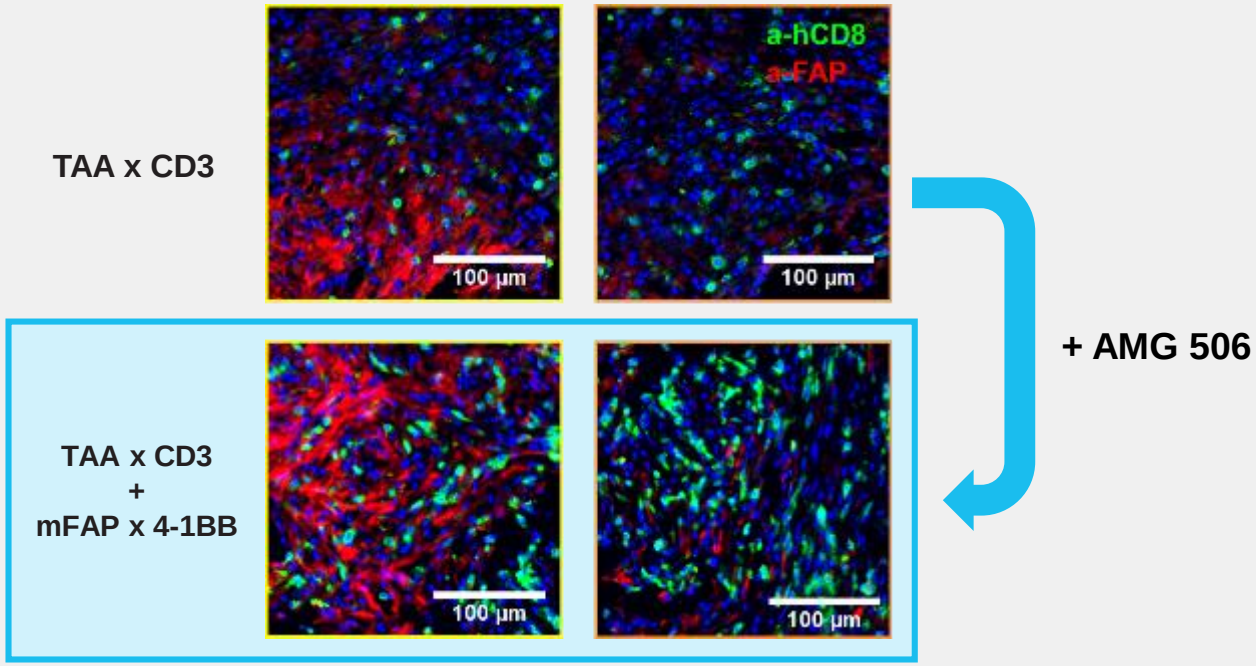
FAP-Mediated Tumor Accumulation of AMG 506

HT-29-T-implanted NSG mice



no-FAP x 4-1BB mFAP x 4-1BB

Intratumoral CD8 T cells



AMG 506 / MP0310 – Key messages, Biomarkers

Target occupancy

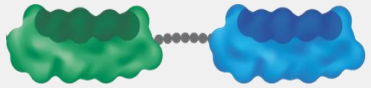
- **Tumor (mIF)**
  - MP0310 in tumor tissue observed **first time** in cohort 4 (0.5mg/kg) and **colocalizes with FAP**
  - MP0310 accumulates in the tumor in **dose dependent** way; at 0.5 mg/kg MP0310, 50% FAP is occupied; at higher dose (5 mg/kg), MP0310 saturates FAP
- **Blood receptor occupancy (RO):**
  - 41BB RO in fresh blood shows good correlation with PK data

PD activity

- **Tumor (Gene expression):**
  - Significant **immune activation** across multiple immune cells **as expected** by MoA for MP0310
  - **Reduction of myeloid related inhibitory signals** observed
- **Blood (IPT):**
  - For all dose levels tested so far, **no activation of immune cell in the periphery**

pMHC: Rapid and Straightforward Selection of Diverse DARPin® pMHC Binders with High Selectivity

DARPin® candidate



anti-pMHC anti-CD3

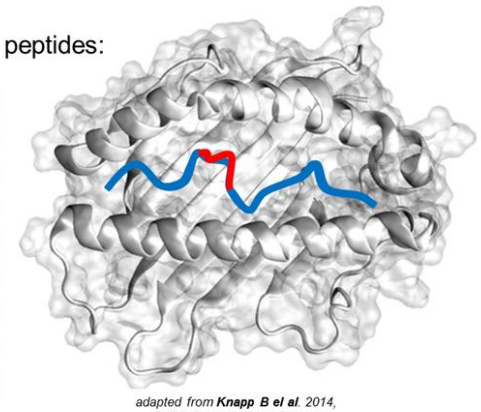
The Alanine Scanning Approach

Wild-type peptide embedded in MHC comples:

RIMYFIENA

Alanine mutated peptides:

AIMYFIENA
RAMYFIENA
RIAYFIENA
RIMAFIENA
RIMYAIENA
RIMYFAENA
RIMYFIANA
RIMYFIEAA
RIMYFIENA

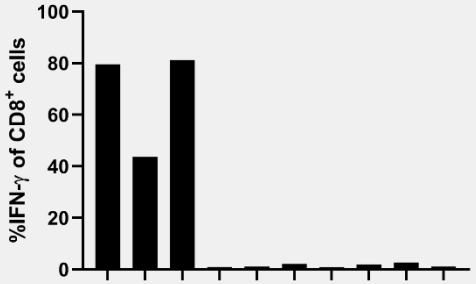


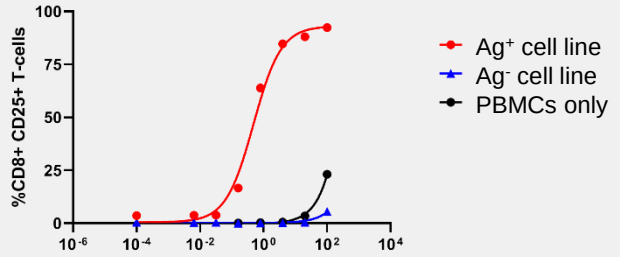
adapted from **Knapp B et al**. 2014, PLOS Computational Biology

Selectivity
(binding pattern by Alanine scanning)

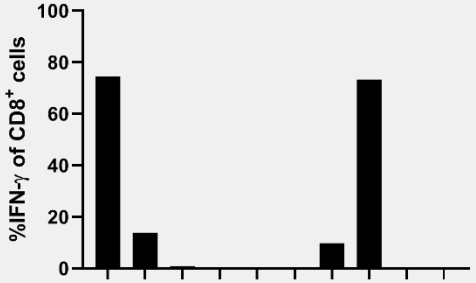
Activity & Selectivity
(T cell activation assay)

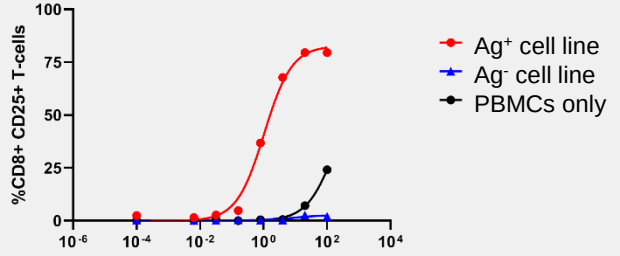
pMHC-A x CD3



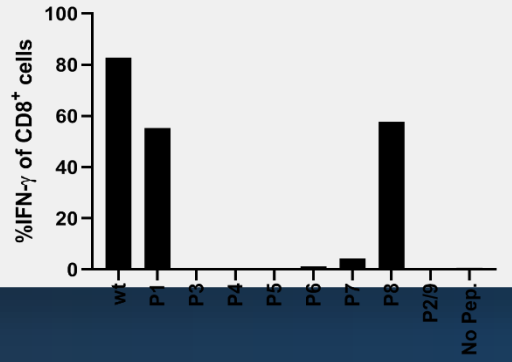


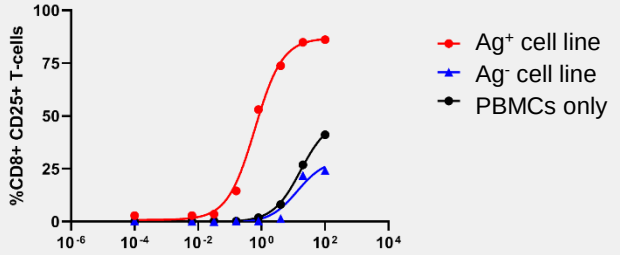
pMHC-B x CD3





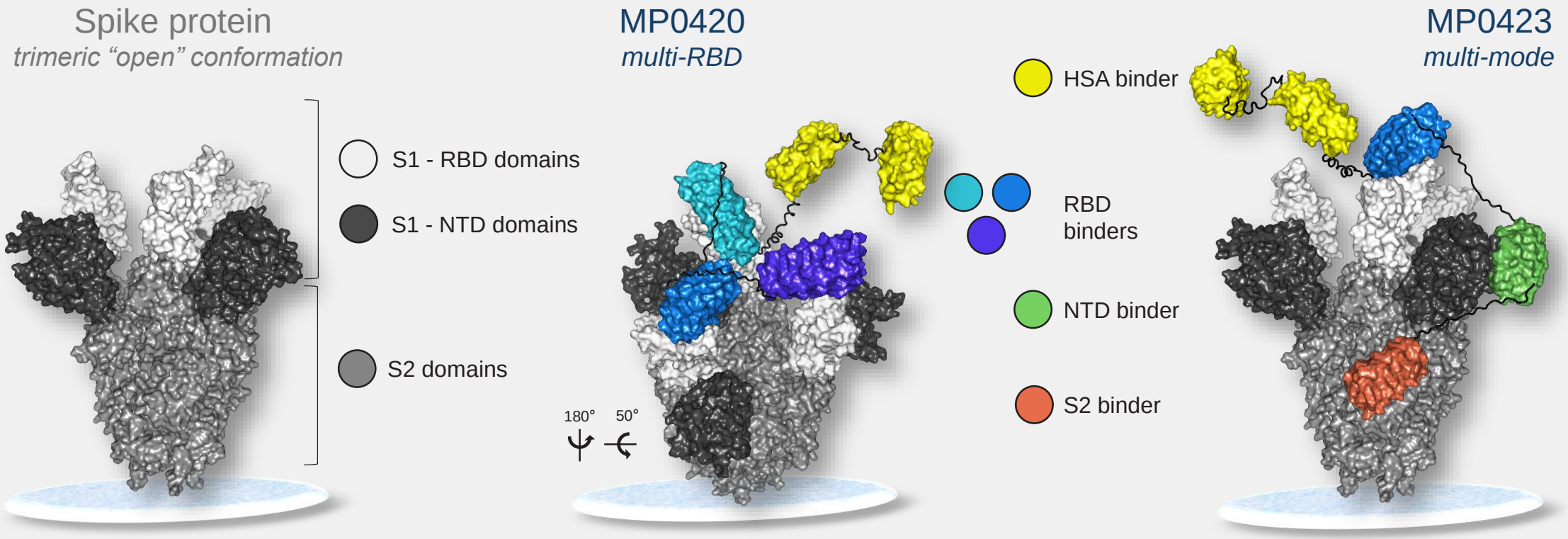
pMHC-C x CD3





DARPin® T-cell engager [nM]

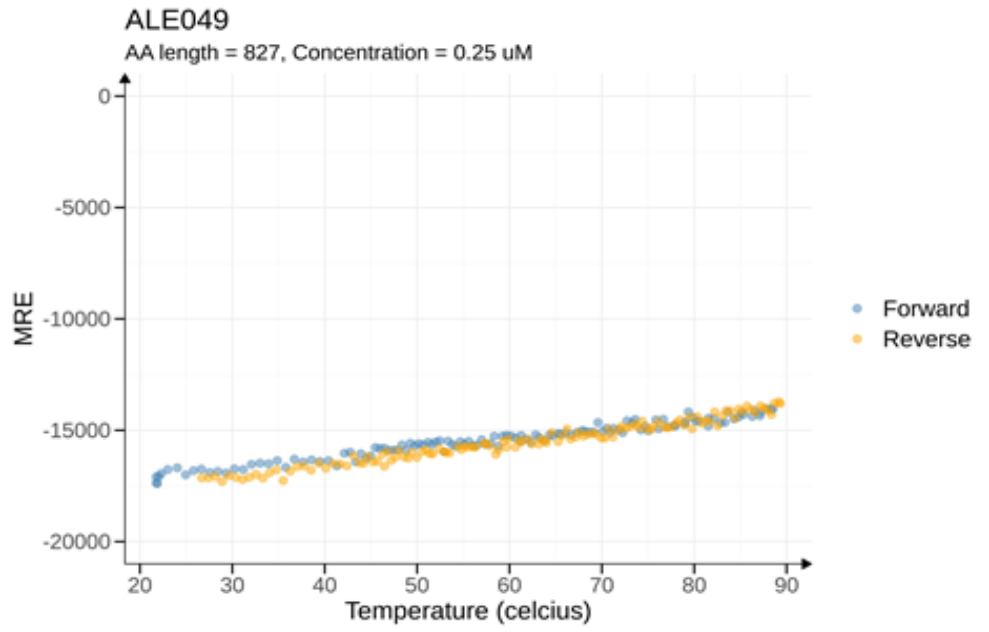
MP0420 & MP0423 – Two COVID-DARPin Candidates



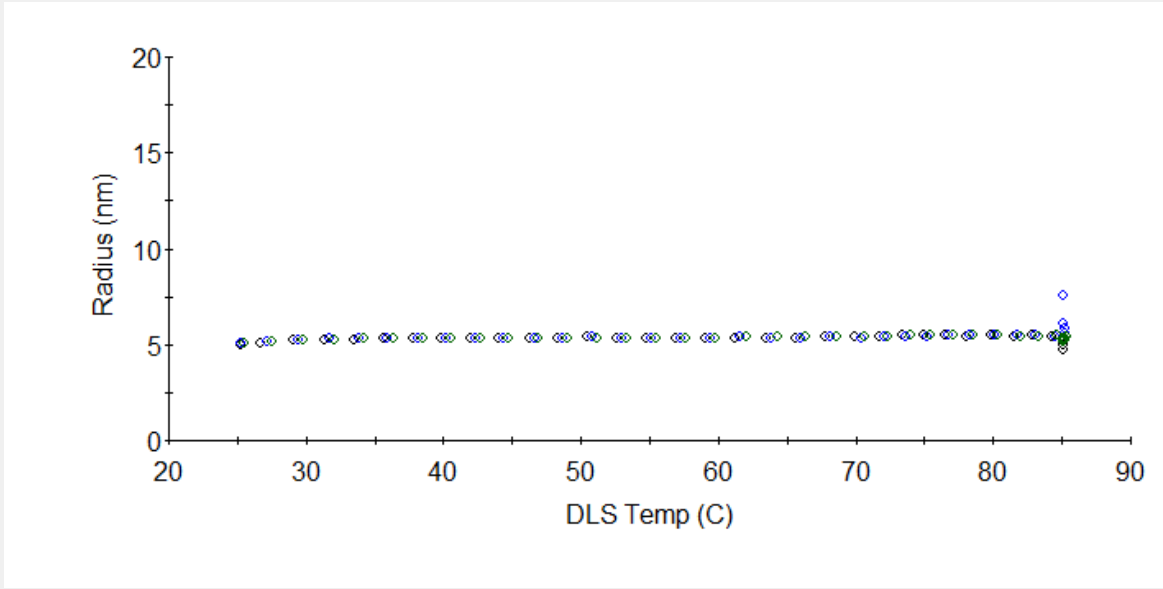
- Development of two distinct Covid-DARPin Candidates, MP0420 and MP0423
- MP0420 is a Best-in-Class RBD inhibitor, MP0423 is the only multi-mode approach to date
- Natural antibodies (& vaccines) target mostly the RBD; MP0423 protects that Achilles heel

MP0420 is stable even at elevated temperatures

CD measurement at 0.25µM
before and after temperature ramp/reverse scan

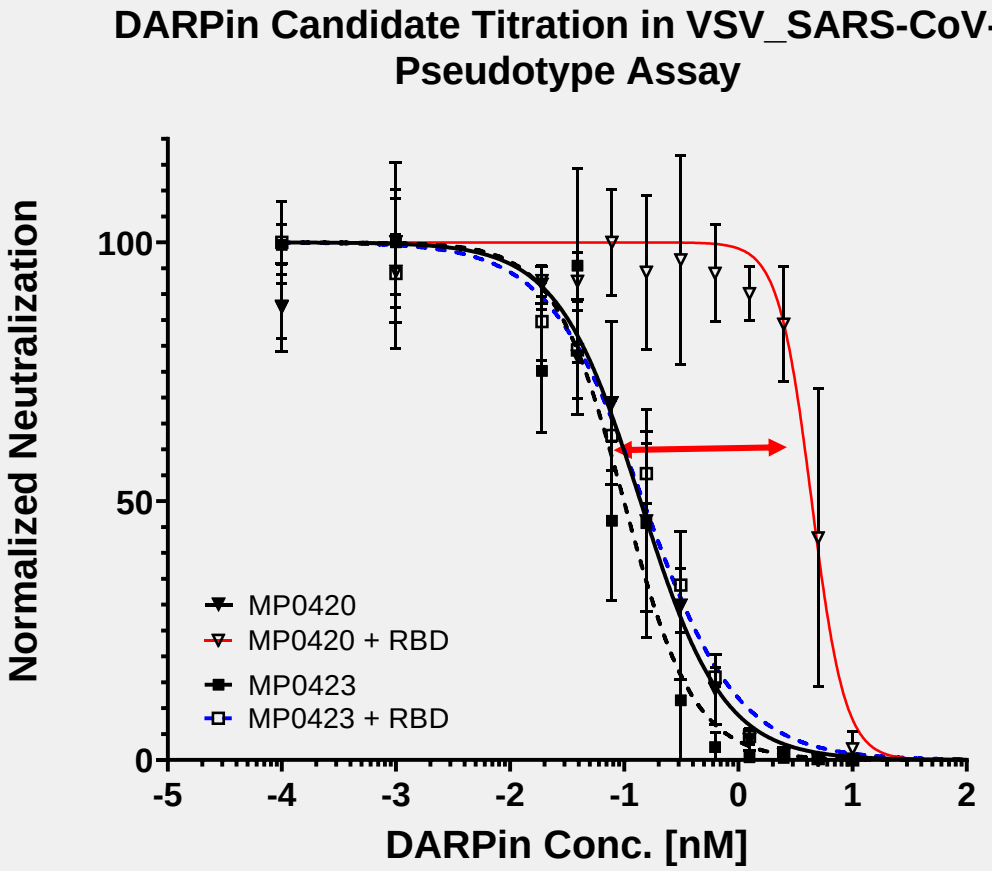


Aggregation onset (DLS) at 1mg/ml



- MP0420 is highly heat stable and does not show any tendency for aggregation
- Potential opportunity to investigate liquid storage at room temperature

MP0423 – full activity with and without RBD



Name	IC50 (nM)
MP0420	0.1387
MP0420+RBD	4.387 ↓
MP0423	0.09933
MP0423+RBD	0.1466

MP0423 is the only biologic therapeutic approach that **includes, but does not depend on**, RBD targeting