Molecular Partners:

Pioneering a new class of drugs with a broad portfolio and global partnerships

Molecular Partners AG, Switzerland (SIX: MOLN)

Nov 2020

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Molecular Partners: Pioneering DARPin® therapies to transform the lives of patients with cancer and other diseases

Broad pipeline of custom-built protein therapeutics

- First DARPin candidate abicipar (licensed to AbbVie), CRL received from FDA in June 2020
- Immuno-oncology portfolio includes cutting-edge approaches:
  - First tumor-localized immune agonist in Phase 1 (licensed to Amgen), with 4-1BB as key target
  - New tumor-localizing immune agonist, with CD40 as key target
  - Peptide-MHC binding has delivered proof-of-concept
- **COVID-19 DARPin** antiviral candidate with best-in-class potential FIH planned November 2020 (Collaboration with Novartis)

A global team, united around a common purpose of bringing a new class of drugs to life

- A unique blend of founding DARPin inventors and key hires

Synergistic Partnerships Built on a Versatile Platform

Ophthalmic

Partnership with Allergan/AbbVie on Abicipar, resulting in two positive Phase 3 studies.

CRL (June 2020): AbbVie evaluating next steps with agency

$360m in potential milestones and teens royalty still possible

abbvie

Oncology

Partnership with Amgen on FAP x 4-1BB localized immune modulator

Phase 1 conducted by MP and Amgen to develop for combination studies

~$500m in milestones and high teen royalties

AMGEN®

Virology

Collaboration with Novartis on multi-specific COVID antivirals

Novartis committed to clinical development in 2021 and manufacturing through Sandoz

~$230m in upfront and near-term milestones with 22% royalty on sales

NOVARTIS

Over ~$1B in potential milestone across multiple programs

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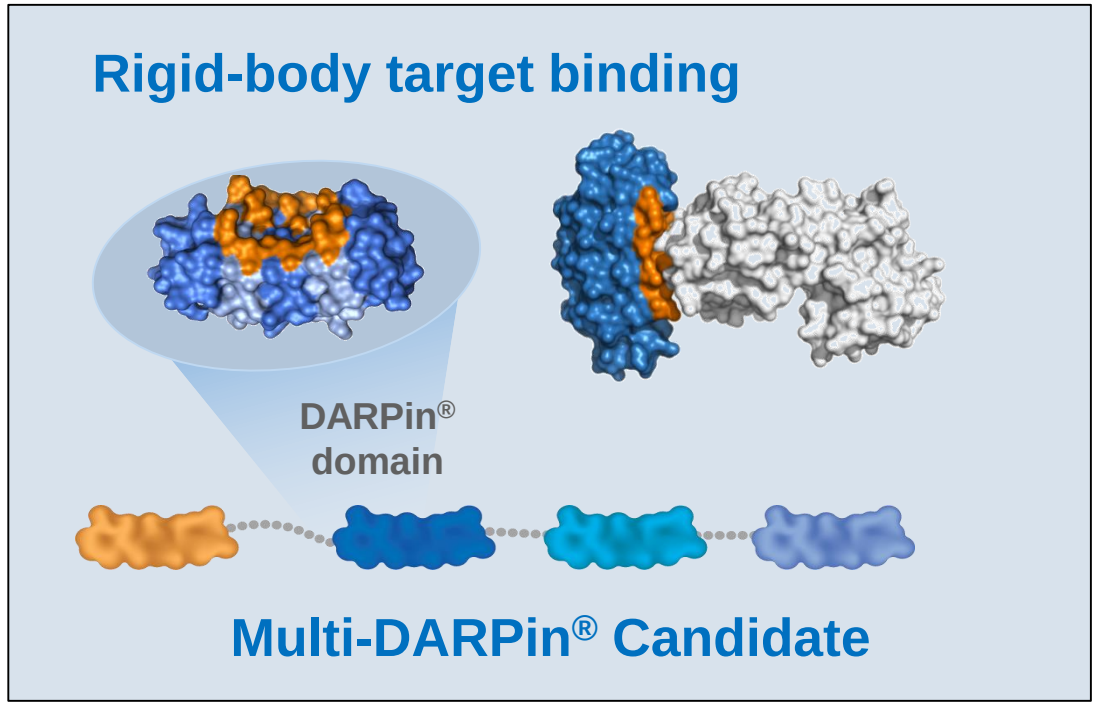
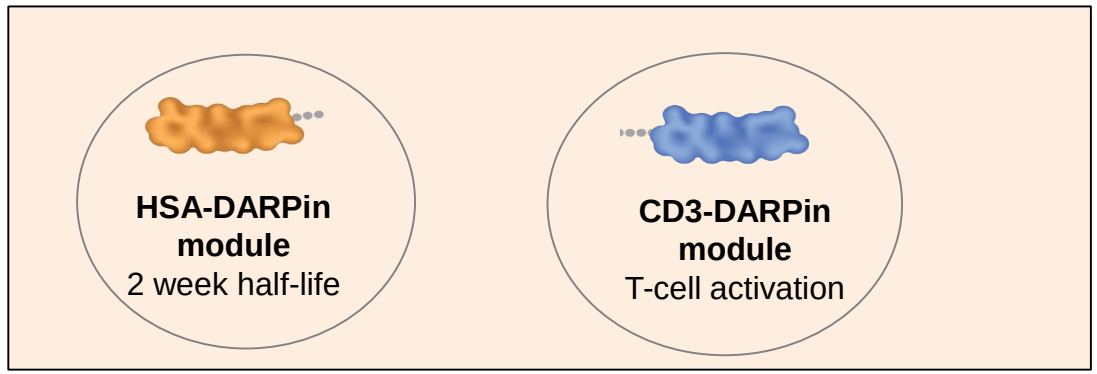
DARPin Custom-Built Features and Benefits





Multi-DARPins: Incredible versatility by design

***Unlock* potent MoAs**:
Localized activation and pro-drugs

Super-potency:
Cooperative binding for complete inhibition

Rigid-body target binding

***Expand* target space**:
Specific binding for undruggable targets (pMHC)

DARPin behavior & toolbox

DARPin toolbox:
All modules can be re-incorporated into new candidates

Speed to clinical POC & low-cost production:
multi-DARPin selection and *E.Coli* production

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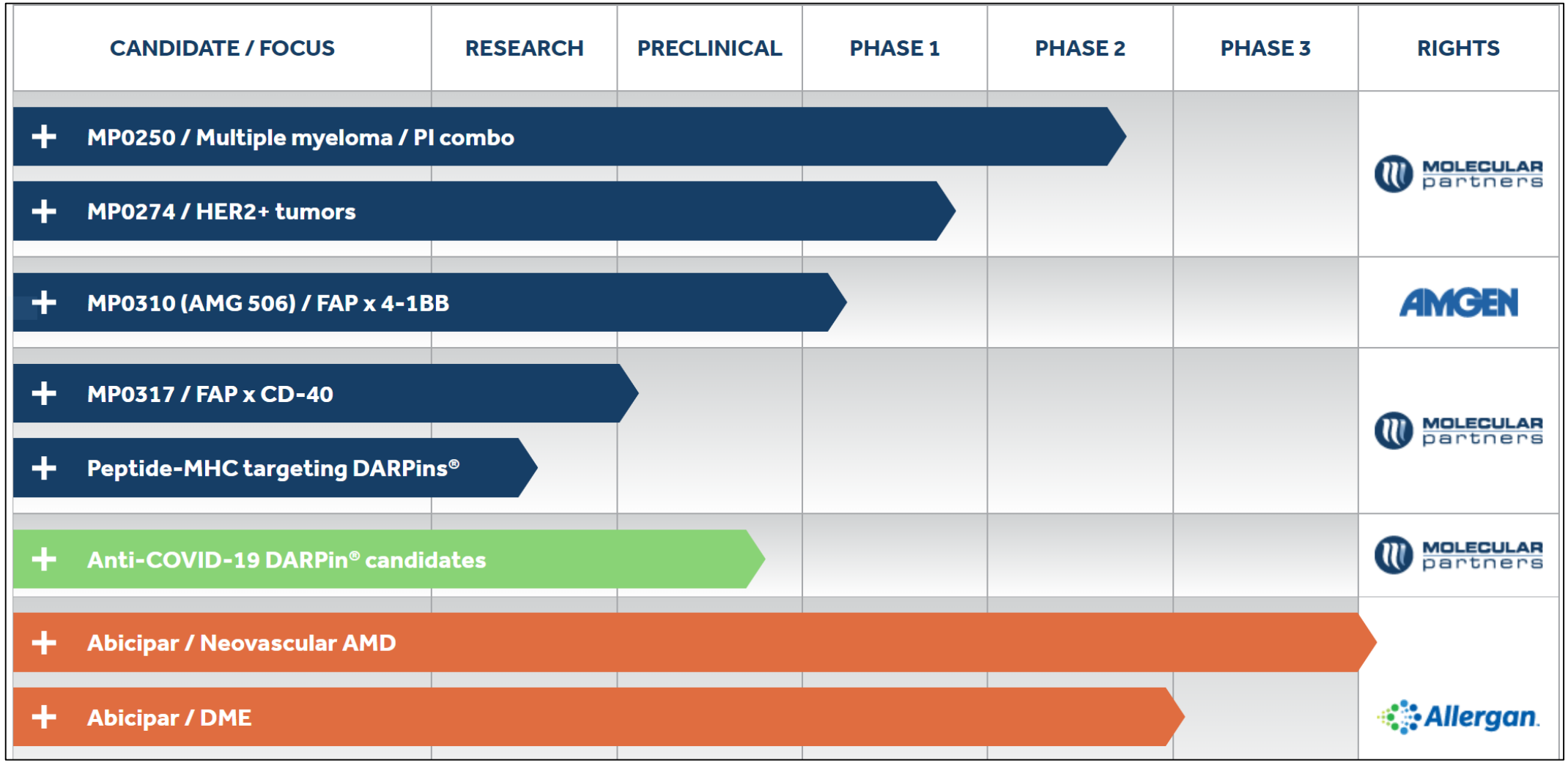
A Balanced and Robust Portfolio



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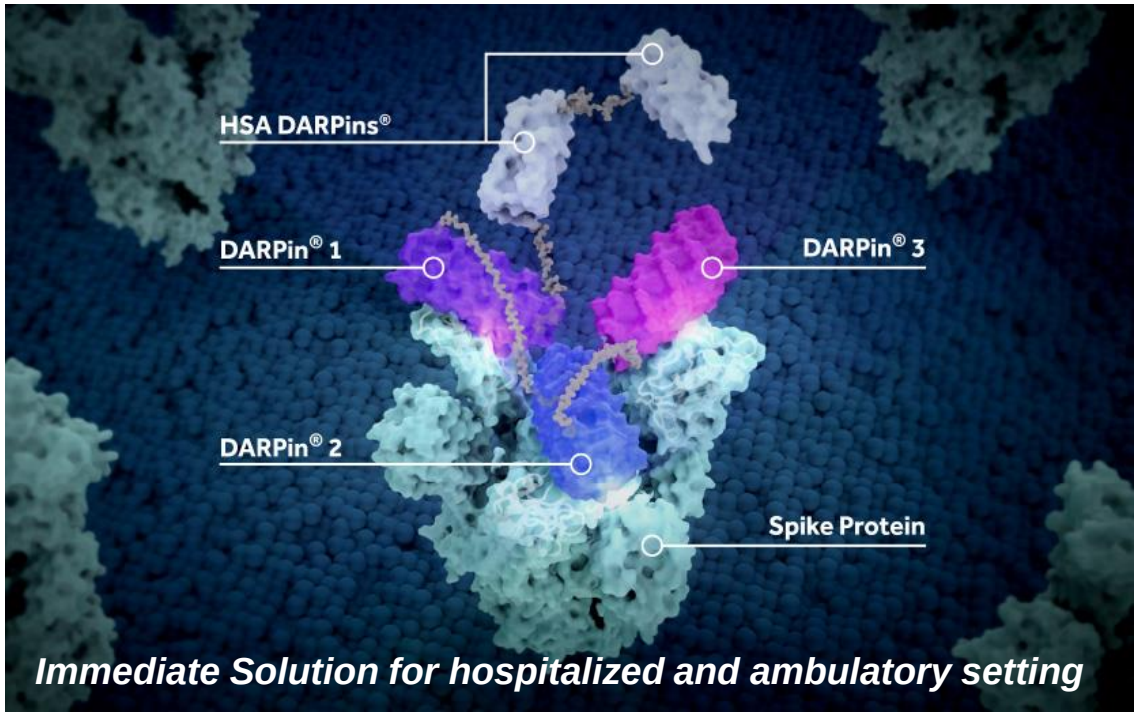
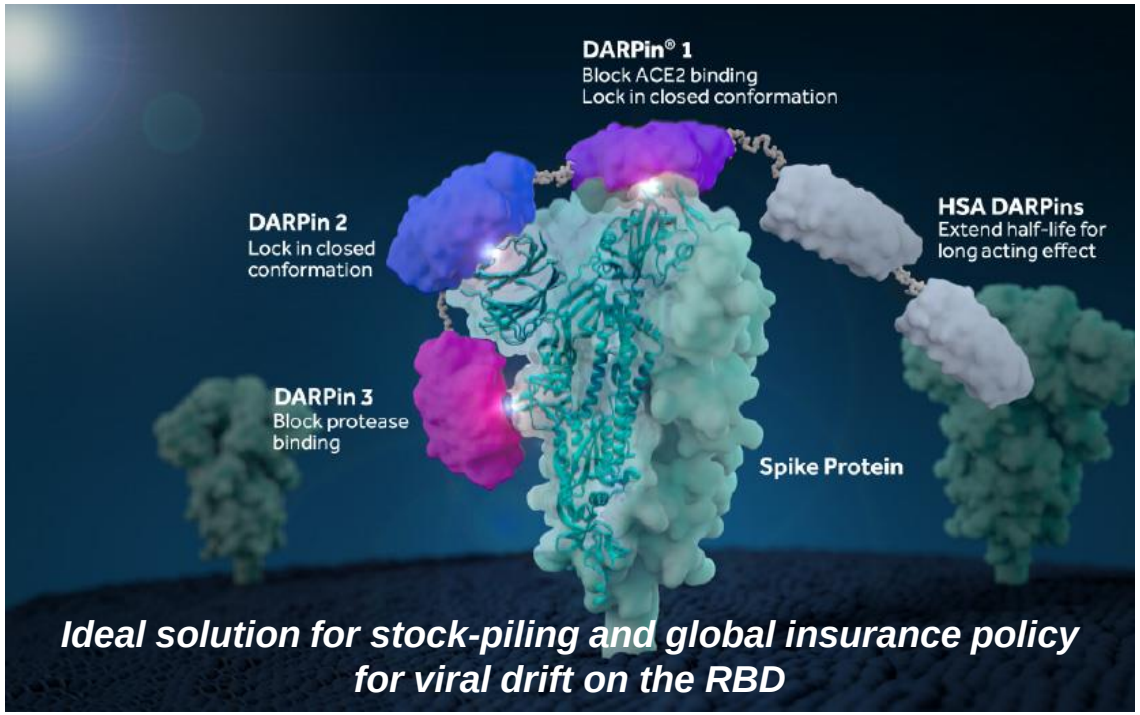
MP0420 & MP0423: DARPin® solutions to SARS-Cov2

MP0420 – best-in-class

- 3 different DARPins blocking the RBD (mAB mixture in one) for highest potency & to prevent viral escape
- Long half-life – single injection
- s.c. injection – simple application in ambulatory setting
- Low costs and high numbers of doses available





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

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Novartis collaboration highlights strengths of each company

Novartis:
manufacturing, supply and logistics for global reach

Both parties commit to global access, aiming to make candidates available to all countries in need

Molecular Partners: two multi-specific anti-COVID candidates

Novartis has the clinical expertise and capabilities fast development

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Commercial Framework:

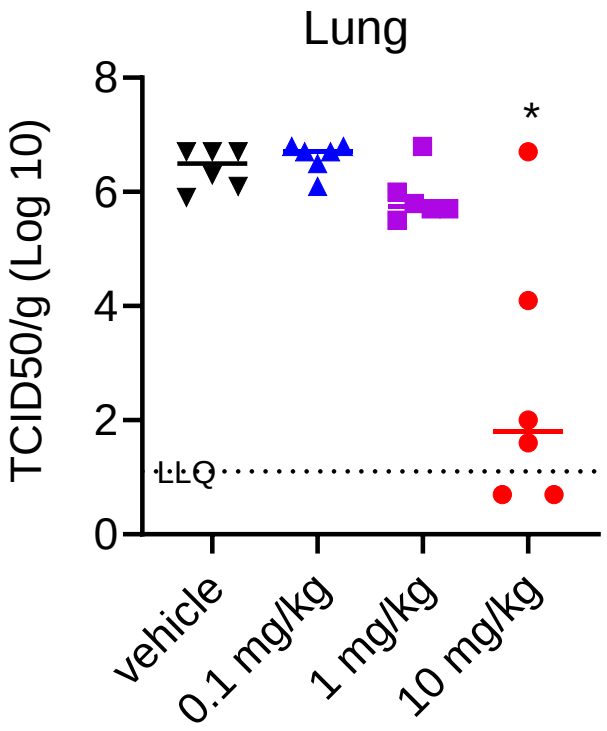
Near term milestones total CHF 210M

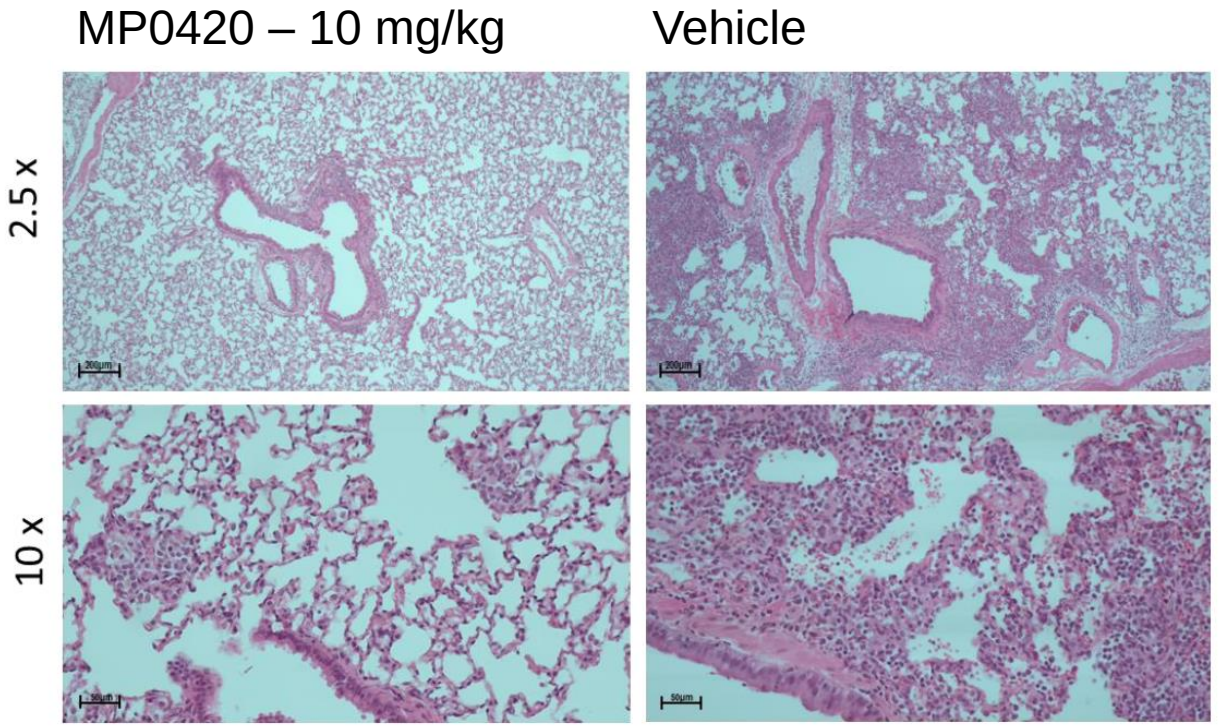
- CHF 60M ‘upfront’, including subscription of CHF 40M worth of MOLN ordinary shares at a price of CHF 23/share
- Receipt of CHF 150M milestone upon commercial exercise (likely in within 2021)

22% royalties in commercial markets

- MP acknowledges and supports Novartis’ goal of making this drug globally available, including in markets and countries where financial resources might otherwise limit access, where MP will forgo any potential royalties.

MP0420 – *in vivo* Activity – Hamster Model





- Hamster *in vivo* data show dose-dependent activity of MP0420
- Lung exposure & activity of the DARPin candidate via HSA DARPin module confirmed
- *In vivo* efficacy confirmed with DARPin MoA, without risk of Antibody-Dependent Enhancement (Fc-mediated)

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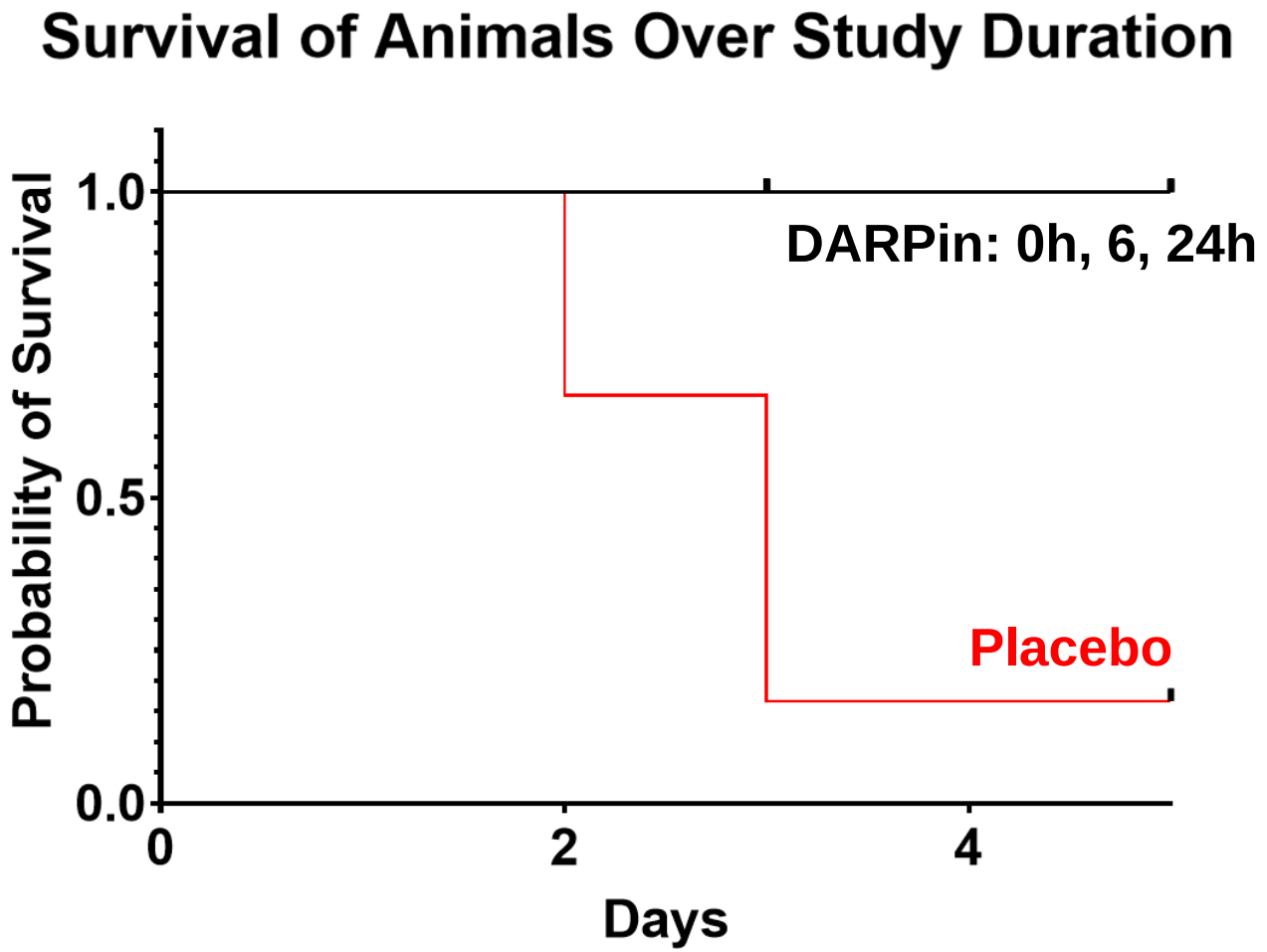
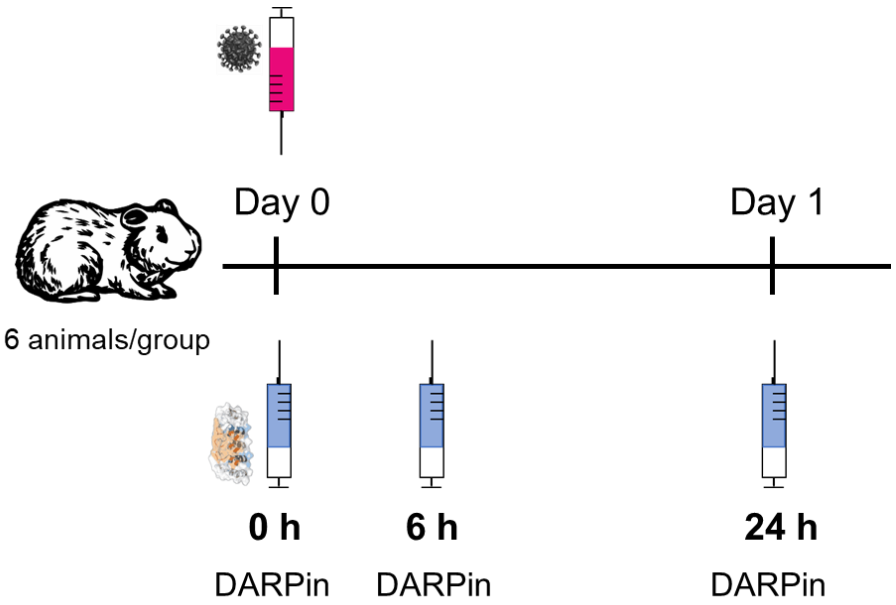
Therapeutic effect, designed for global impact





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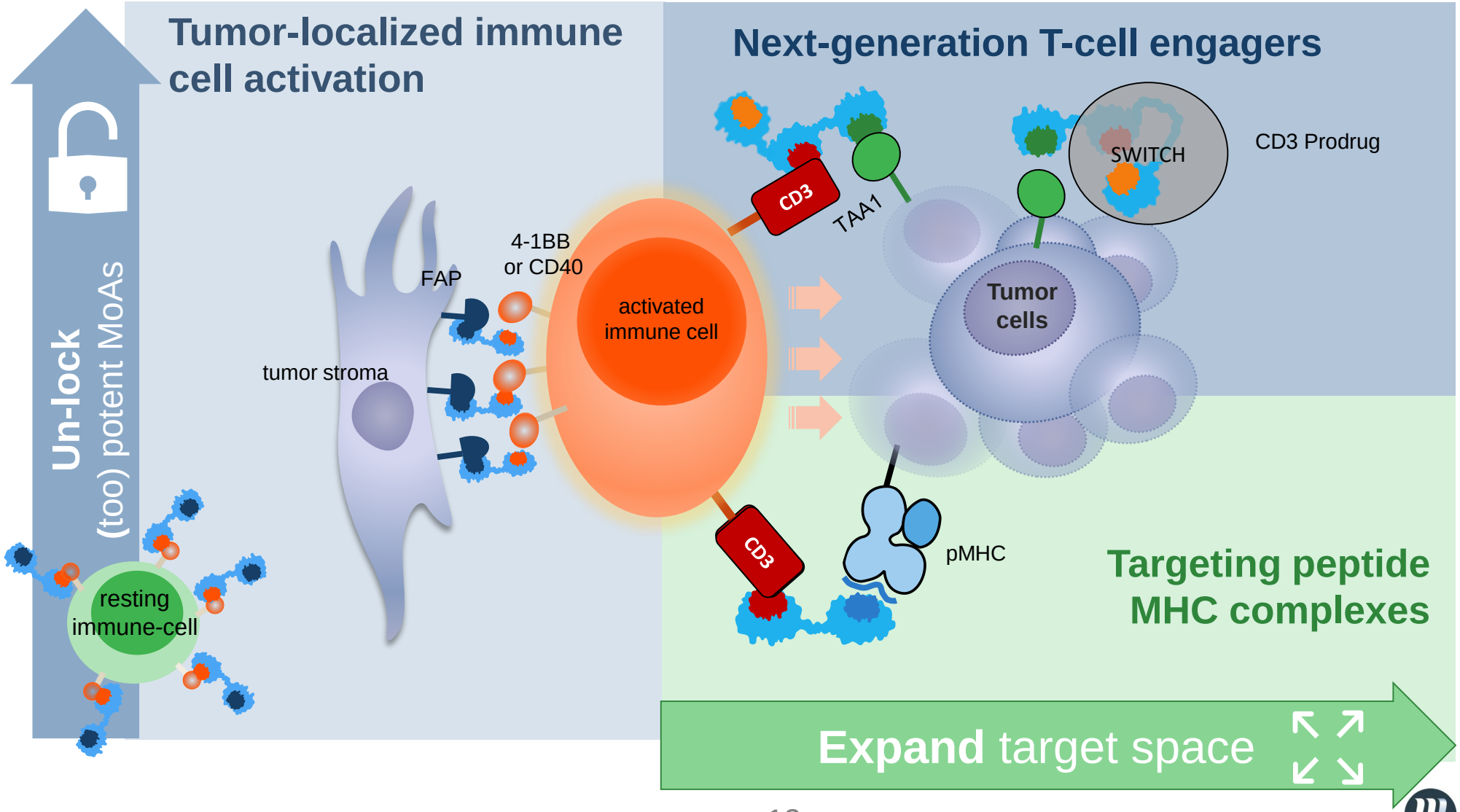
Applying our Therapeutic DARPin® Designs



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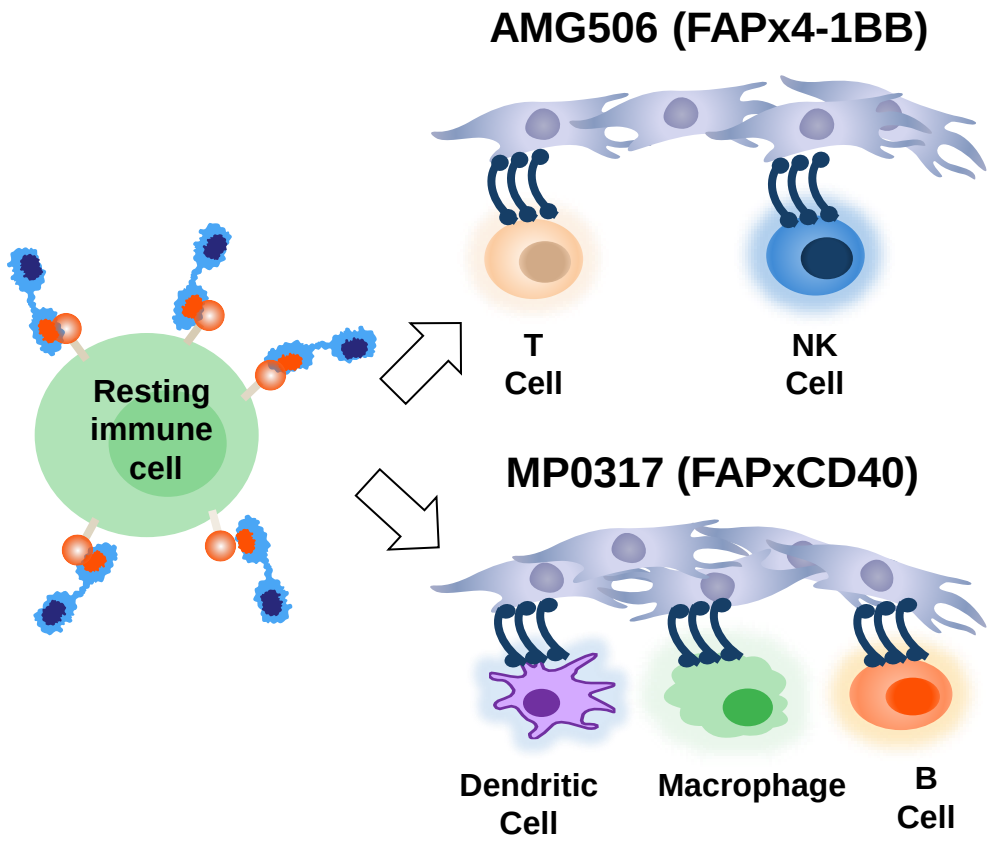
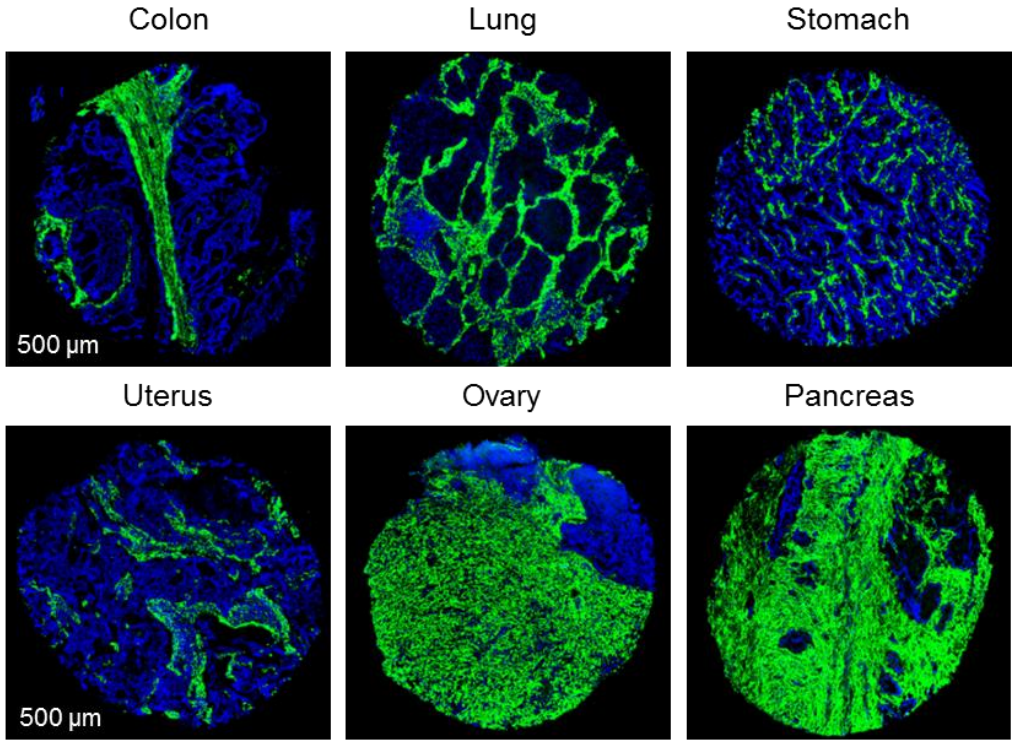
Unlock: Local Activation of Immune cells: Fibroblast Activation Protein (FAP) as a general switch



FAP expression adequate for immune activation in multiple solid tumors



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

Human FAP, DAPI

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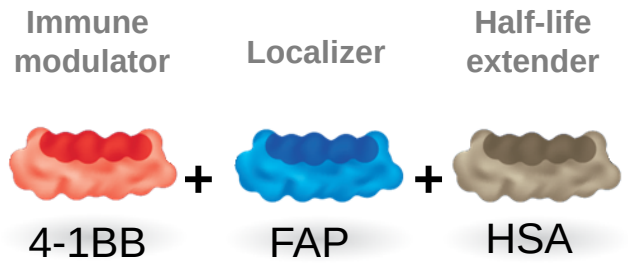
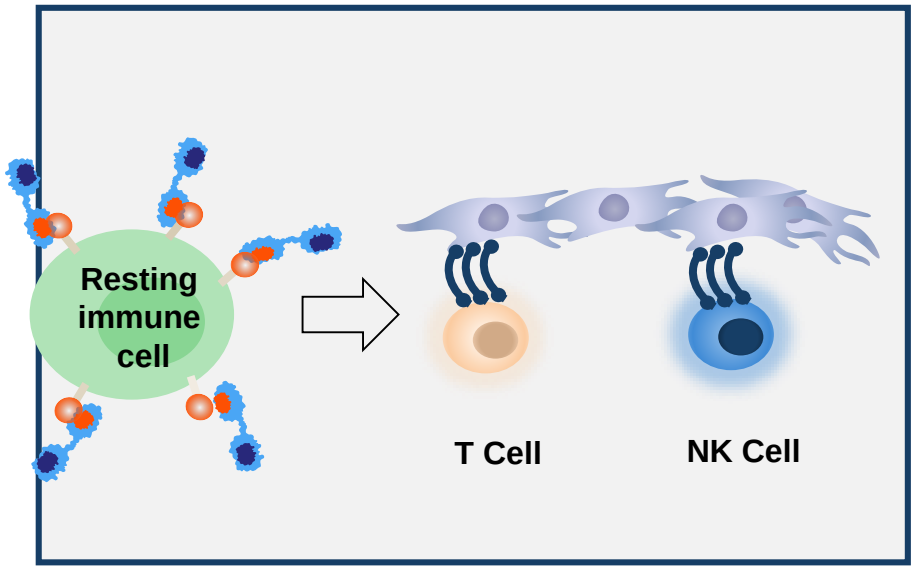
MP0310 (AMG 506): Localized Activation of 4-1BB





- 4-1BB is a potent co-stimulatory molecule on T cells, but development has been slowed due to systemic toxicity concerns
- Novel mode of action: localized activation of 4-1BB in a FAP dependent manner
- Dose escalation ongoing: Phase 1 trial in patients with FAP positive tumors that have progressed on SOC
- Phase 1b combination studies with to be conducted by Amgen
- $50m upfront, ~$500m in milestones plus royalties

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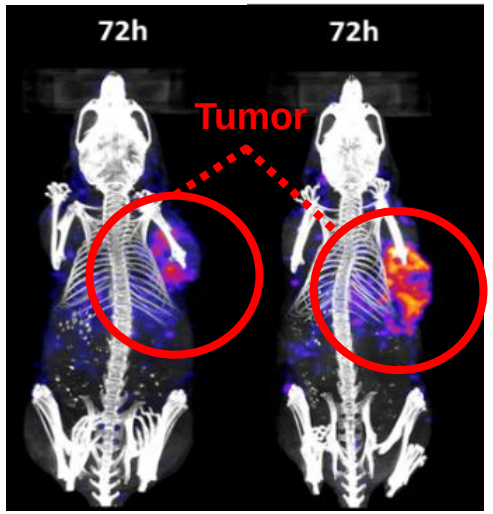
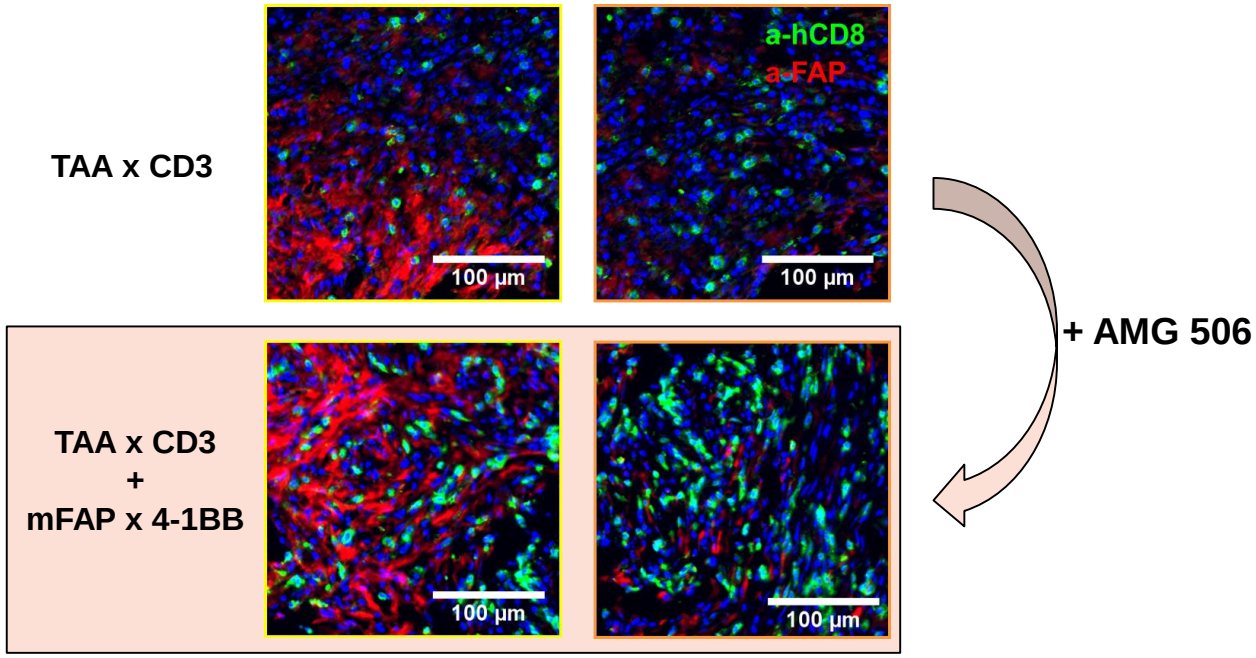
Combination of AMG 506/MP0310 and TAA x CD3 Bi-Specific Results in Significant Increase of Intratumoral CD8+ T Cells

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



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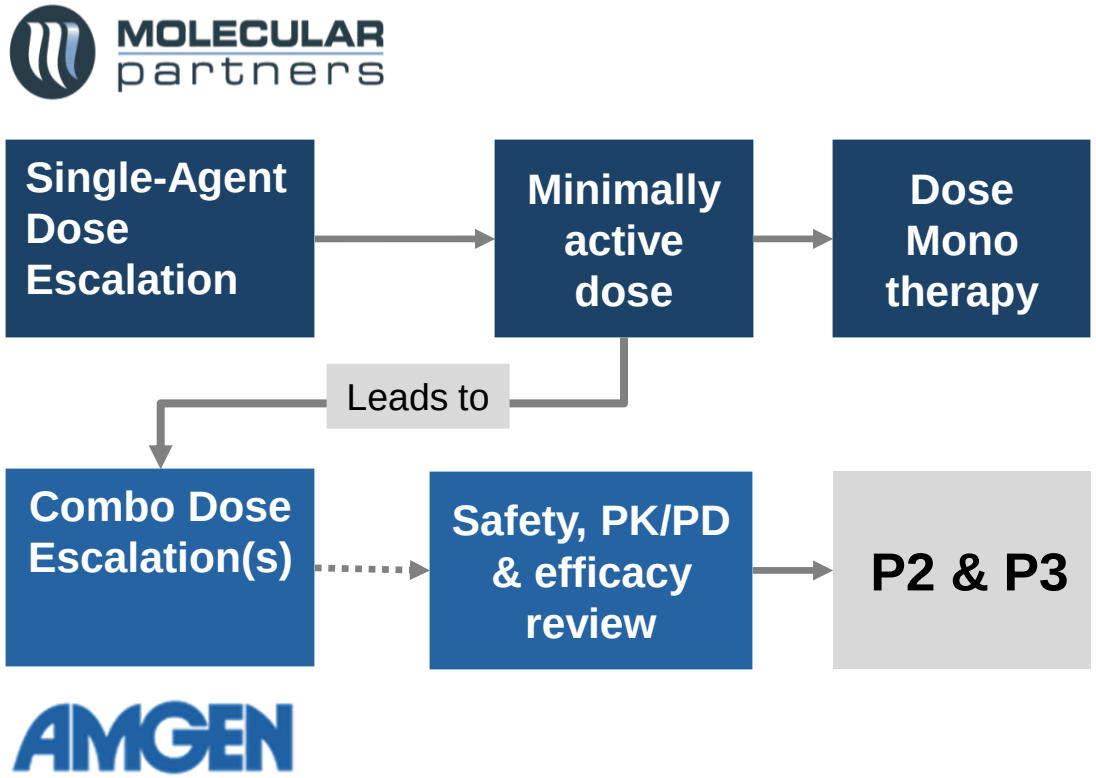
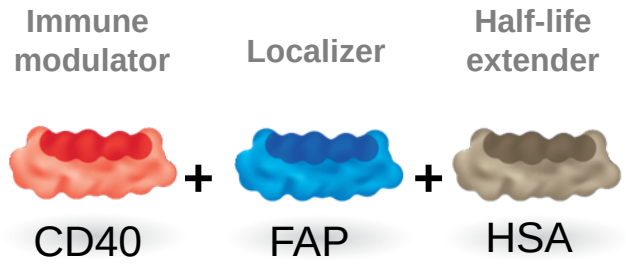
Cornerstones of Amgen Collaboration for AMG 506 (MP0310)

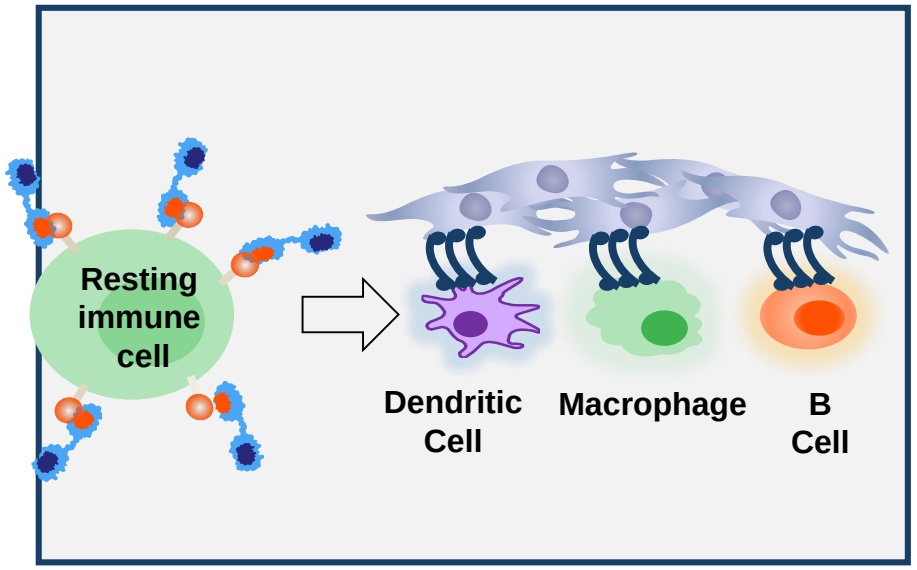
- AMG 506 Co-development
  - MP tests mono dose escalation
  - Amgen tests combinations
- Deal terms
  - $50m upfront payment
  - $497m in potential MS
  - Royalties up to high-teens
- MP retains rights to combine AMG506 with DARPin candidates in the pipeline



- Dose escalation ongoing
- Initial data from ph 1 study expected in H2 20
- Data used to inform potential Ph1b combination studies with Amgen assets which will be conducted by Amgen

MP0317: Localized Activation of CD40





- CD40 serves pivotal role in the immune response via interactions between T cells and antigen-presenting cells
- Novel mode of action: Localized activation of CD40 in a FAP dependent manner, potentially avoiding systemic toxicity, and optimized dosing.
- Additional recruitment dendritic cells, macrophages, and B cells should allow for robust immune response in the tumor
- IND filing around year-end 2020: Phase 1 early 2021
- Novel trial design will allow for rapid POC

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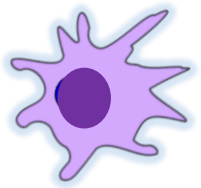
MP0317: FAP-dependent activation of specific immune cells

A



Dendritic cells:

CD86 ✓ IL-12 ✓

CD83 ✓ CD80 ✓

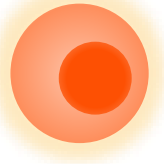
B

Macrophages:

TNFα ✓ IL-12 ✓

IL-6 ✓ CCL17 ✓

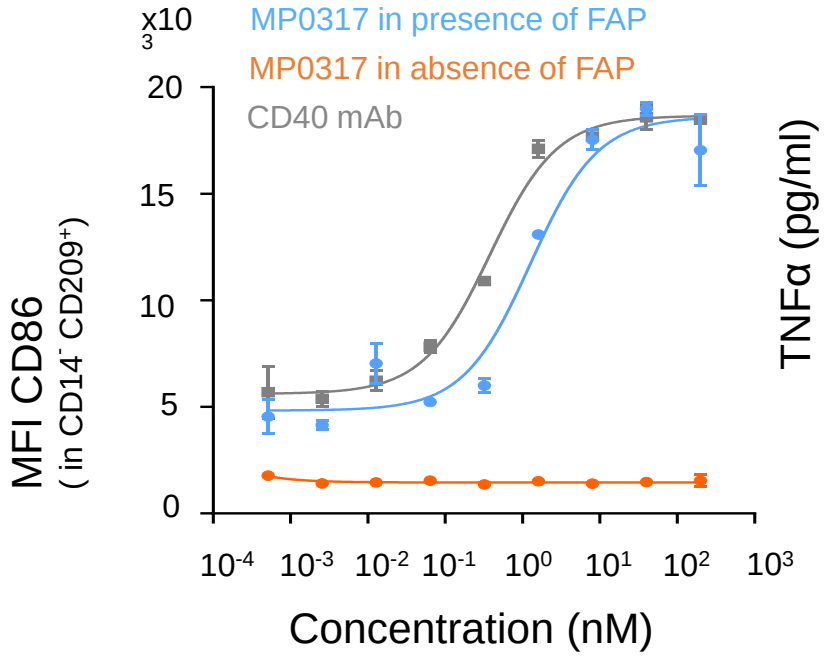
C

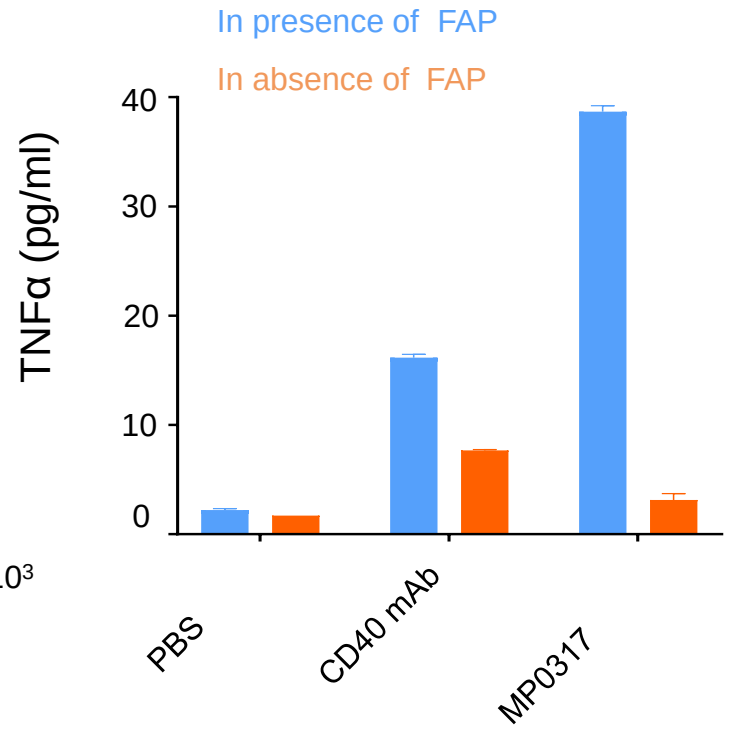


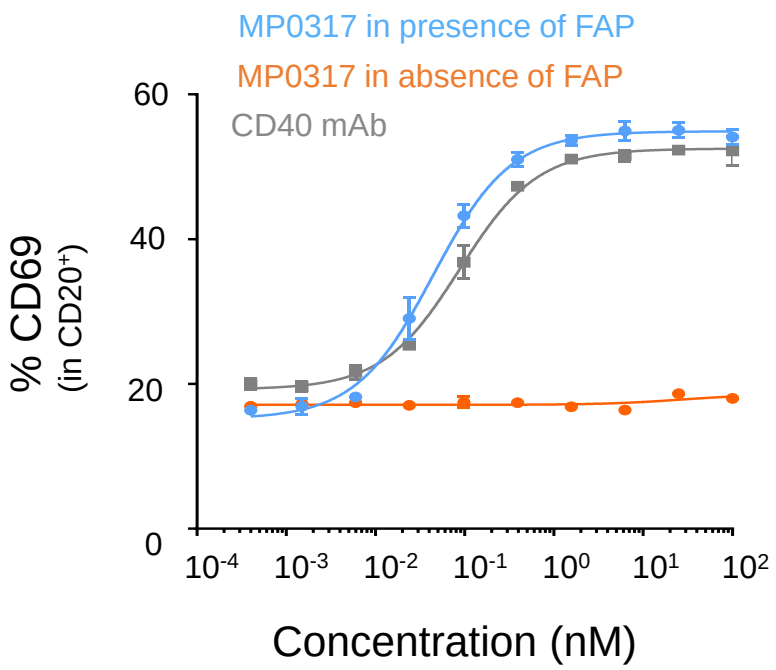
B cells:

CD69 ✓

CD86 ✓







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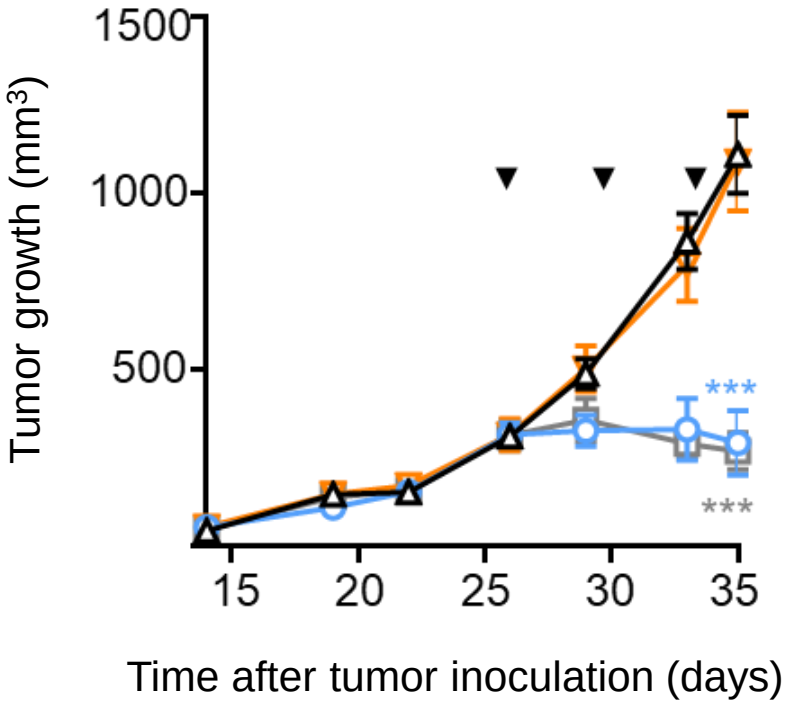
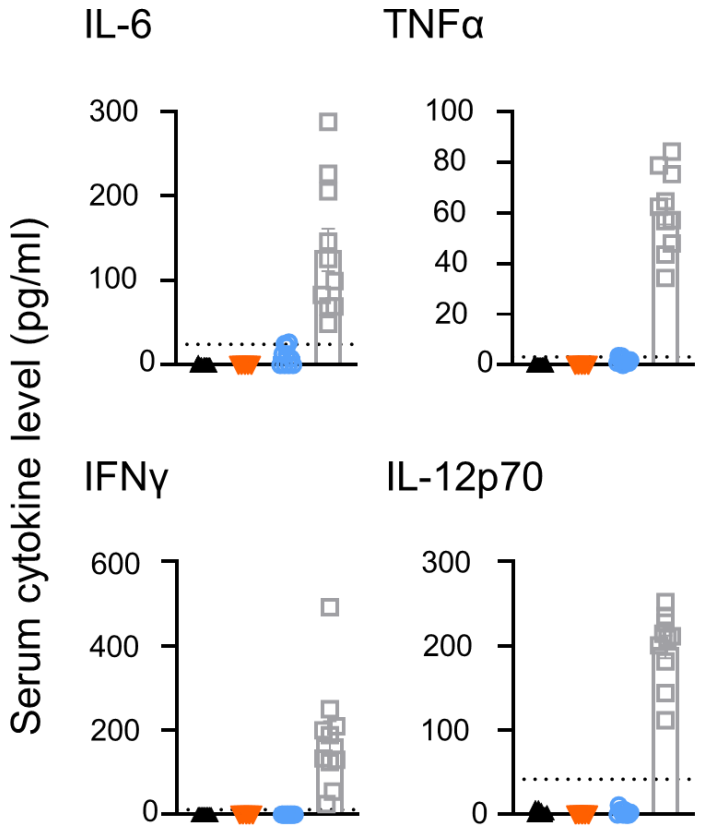
MP0317 shows full activity with no detectable side-effects

FAP^{HIGH} TUMOR: MC38-FAP Colorectal cancer





Vehicle

Neg. CTRL*

mFAP x mCD40

mCD40 Ab

*Neg. CTRL, DARPin® molecule binding CD40 and HSA, but not FAP

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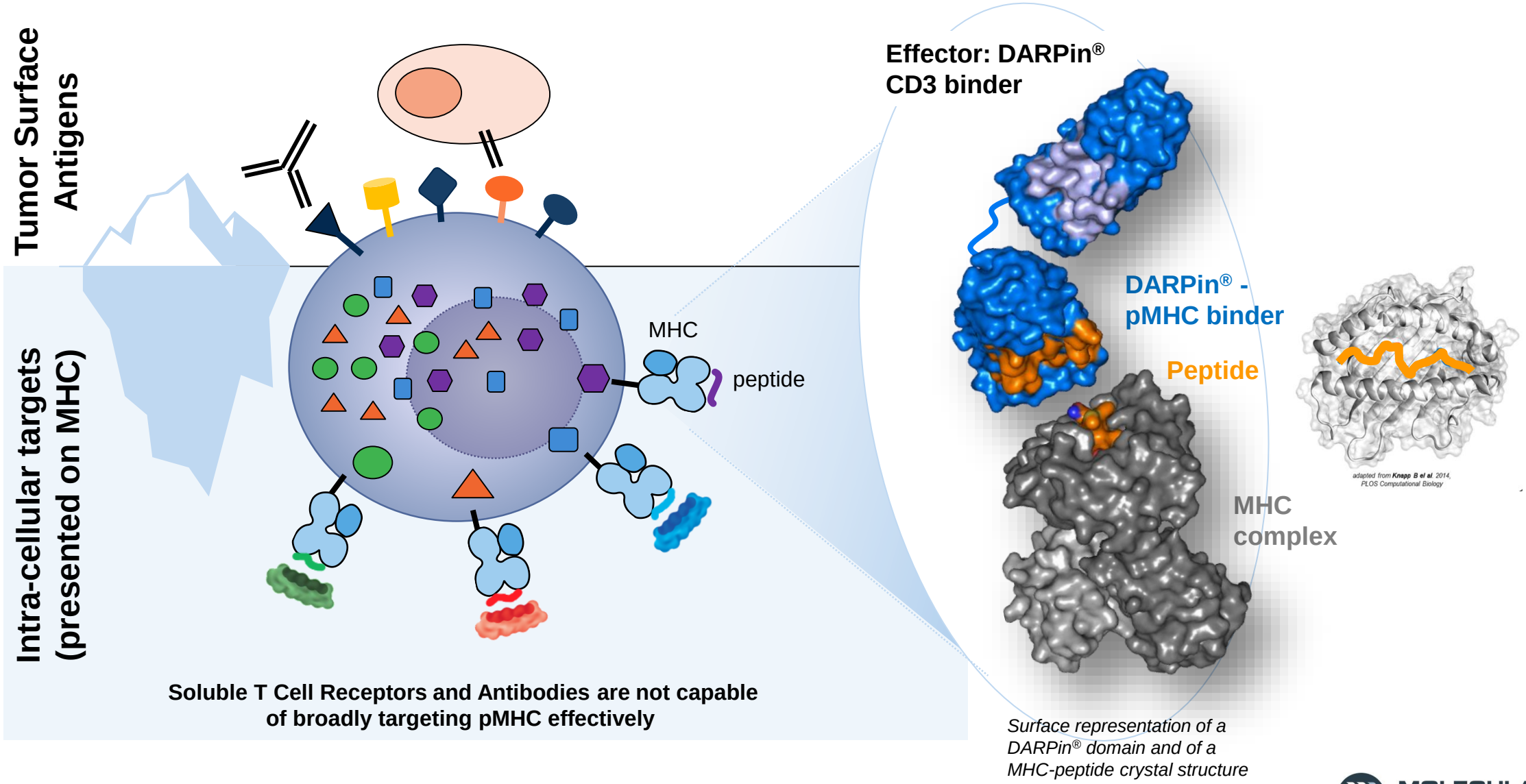
Expand: Peptide MHC: Approach for “Inaccessible” Highly Selective Targets



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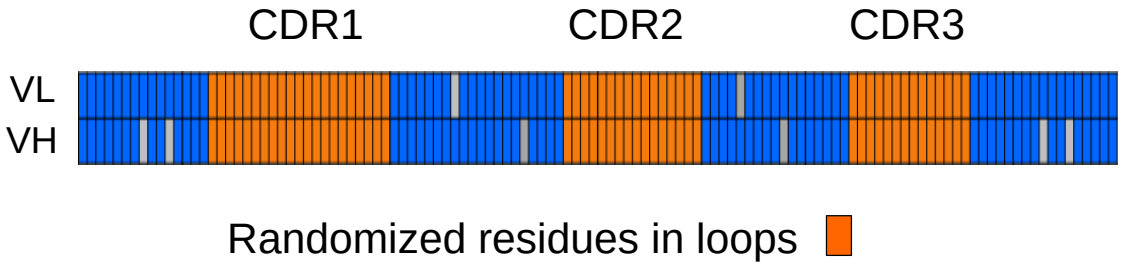
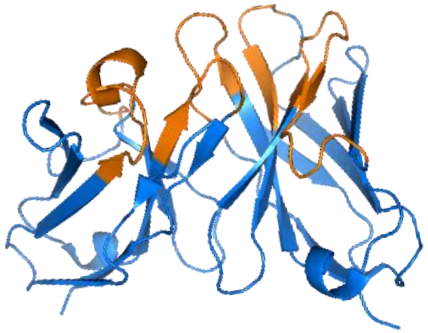
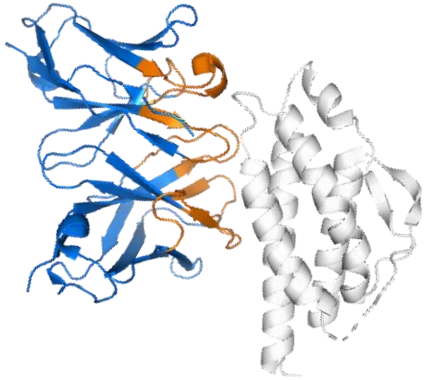
DARPins are uniquely designed to target Peptide MHC

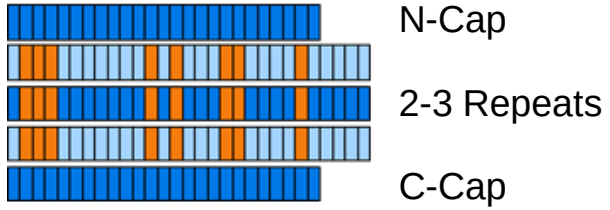
Antibody (Ig-) Domain: binding via flexible loops

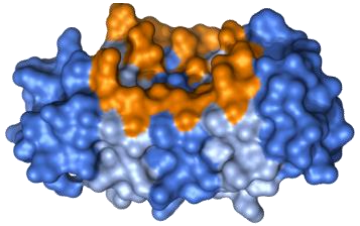


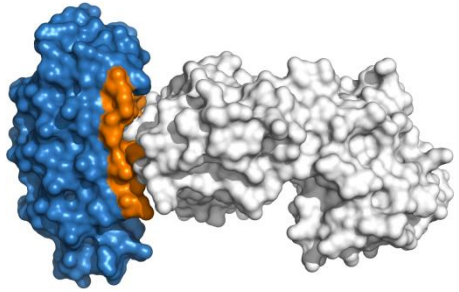




DARPin® Domain: binding via rigid surface







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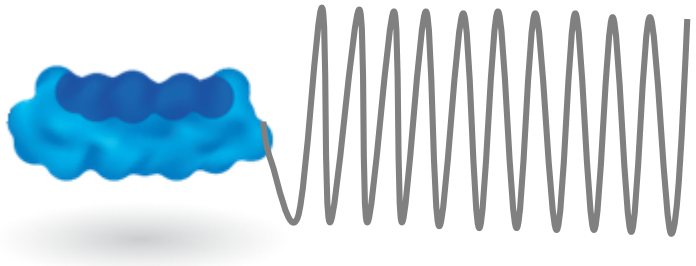
Abicipar: Potential to be the First Fixed 12-Week anti-VEGF



abbvie

First long-acting anti-VEGF under FDA review

- Potential best in class anti-VEGF offering sustained vision gain and reduction in treatment burden
- Two positive clinical trials (CEDAR & SEQUOIA) show improved and maintained visual acuity at both 1-year and 2-year timepoints with quarterly injections
- Additional studies for DME planned (TBD)
- June 2020: CRL received from FDA- next steps to be discussed with agency
- Global partnership with Allergan/Abbvie includes remaining milestones ~($360m) as well as double-digit royalties on WW sales

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Financial Overview & Milestones:

- **Cash September 30, 2020: CHF 133m, No debt**
  - Expense Guidance for FY2020: CHF 65-75m
  - Successful capital raise of CHF 80m, completed in early July 2020
- **Addition 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 AMG506 (MP0310)
  - >$360M in approval and commercial milestones associated with Abicipar
- **Up to double-digit royalties outstanding with current R&D partners**

Expected Catalysts

	2020/2021
Abicipar	▪ Next steps ref. approval and launch in nAMD (US and EU) ➢ Discussions with FDA to resolve CRL issues from June 2020
MP0250	▪ Additional P2 data from PI-combo trial ▪ Continued development of MP0250 in partnership
AMG 506 (MP0310)	▪ Identify AMG 506 (MP0310) dose in ongoing phase 1 ▪ Initiation AMG 506 (MP0310) combination trials
MP0420	▪ Manufacturing scale-up for broad supply ongoing ▪ FIH of anti-SARS-Cov-2 DARPin in Q4 2020 (November) ▪ Additional clarity on clinical development before YE
MP0317	▪ Prepare for MP0317 IND submission ▪ Additional scientific publications and presentations ▪ FIH H1 2021

Funded into 2023
(excl. 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
- **Member of the Board of Directors**
- PhD in biochemistry from UZH

Dr. Nicolas Leupin, 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, VP Strategic Planning and Portfolio Strategy

- Former VP Emerging Markets Portfolio Mgmt. at 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, SVP Head of Research

- Previously responsible for DARPin generation, PK extension, enabling work for DARPin selection
- PhD, Univ. of Zurich, Plückthun lab

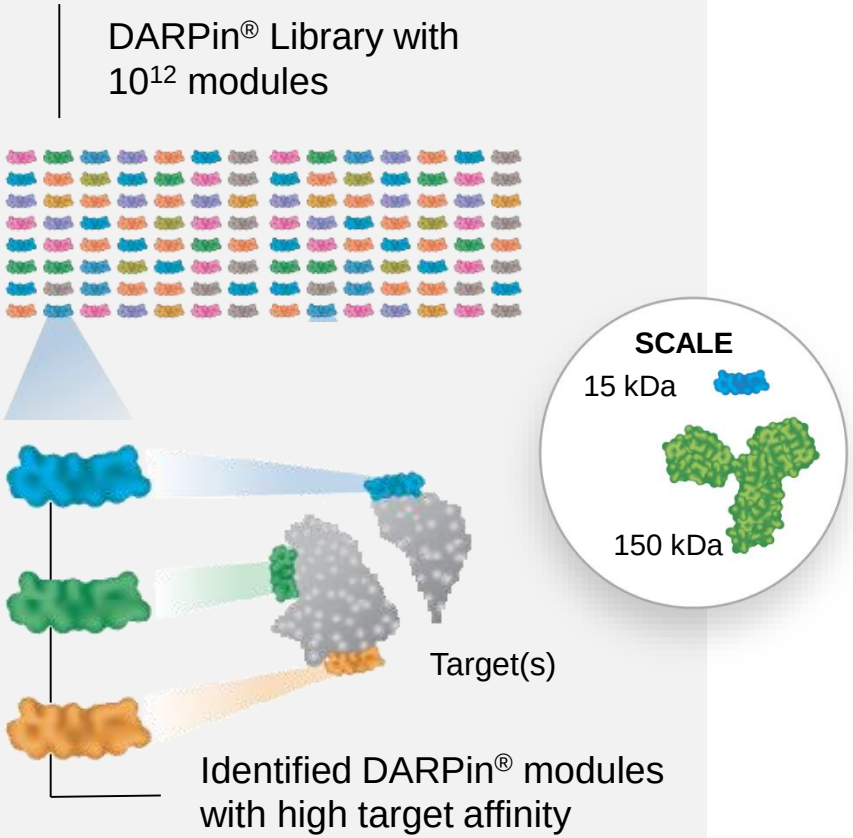
Alex Zuercher, SVP Development

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

MOLECULAR partners

Custom-built DARPin Proteins: Novel Therapeutic Modality

DARPin® module selection



Ideal drug-like properties

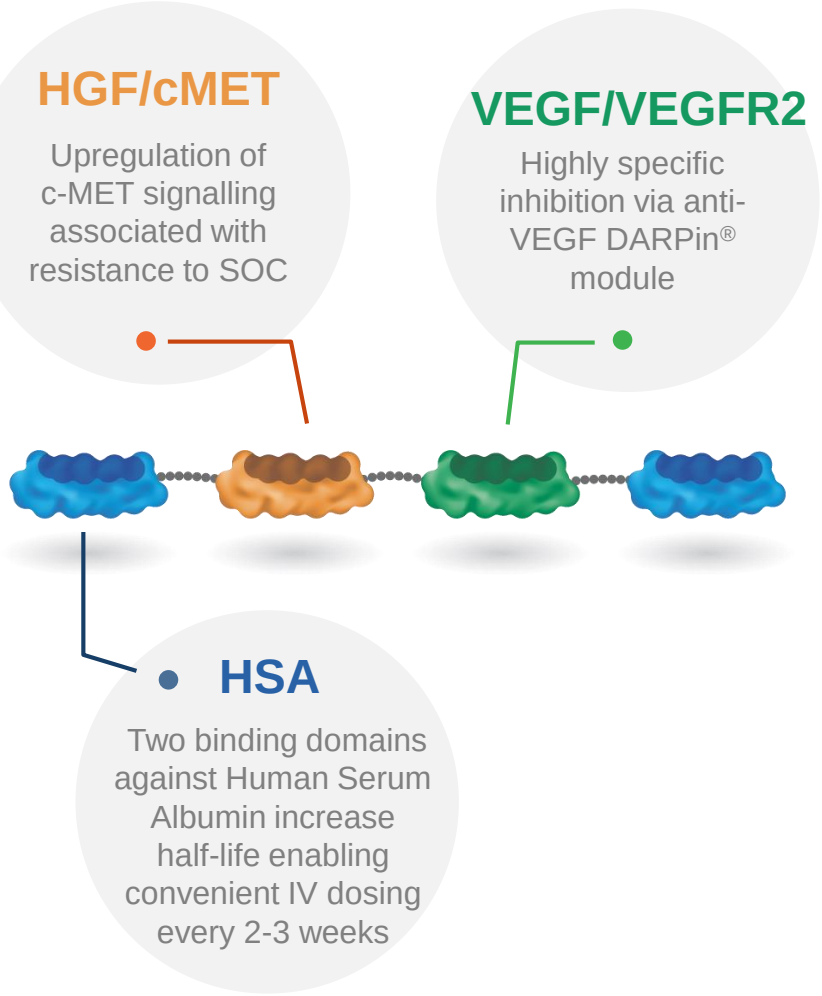
- Natural multi-specific binding protein of human origin
- High potency and specificity
- High stability and solubility
- Systemic half-life of up to 14 days (HSA-DARPin technology)
- Low immunogenic potential
- IP protected, platform & products
- Validation to the market with Abicipar

Differentiating technical features

- Rigid body target binding
- Multi-specific target binding (>2)
- Speed to sample biology space
- High-yield, low-cost production

MOLECULAR partners

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

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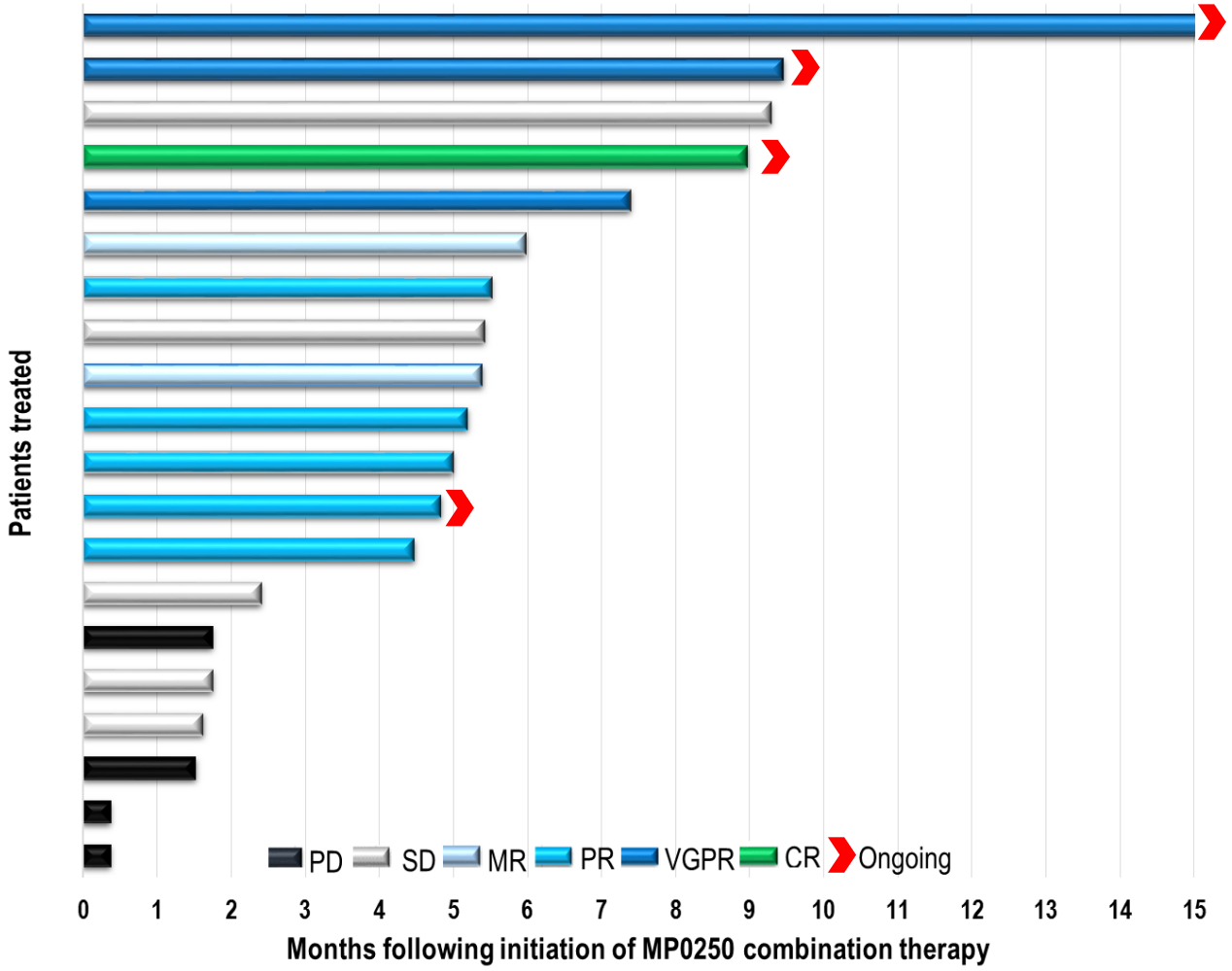
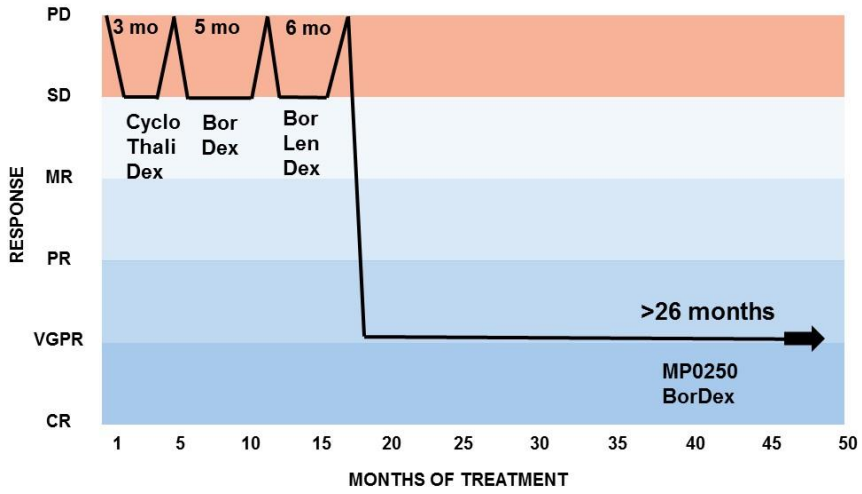
MP0250: Deep and Durable Responses



- **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)



as presented at ASH 2019

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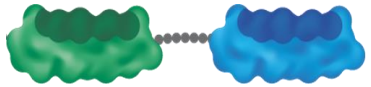
pMHC: Rapid and Straightforward Selection of Diverse DARPin® pMHC Binders with High Selectivity

DARPin® candidate



anti-pMHC anti-CD3

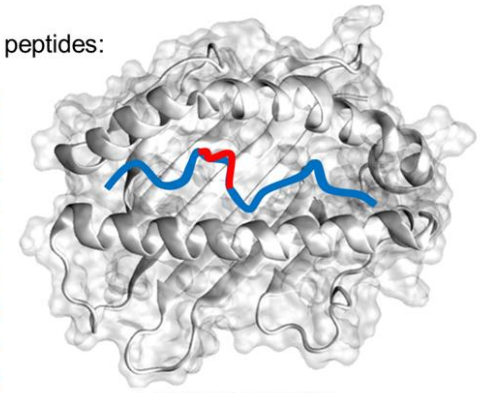
The Alanine Scanning Approach

Wild-type peptide embedded in MHC comples:

RIMYFIENA

Alanine mutated peptides:

AIMYFIENA
RAMYFIENA
RIAYFIENA
RIMAFIENA
RIMYAIENA
RIMYFAENA
RIMYFIANA
RIMYFIEAA
RIMYFIENA

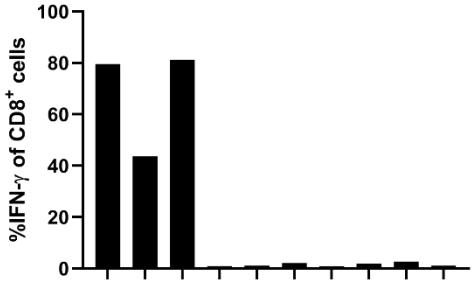


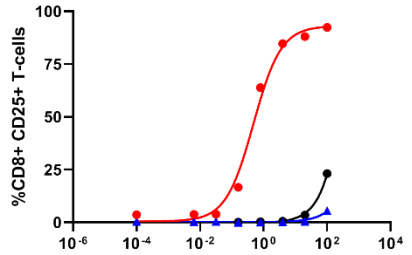
adapted from **Knapp B et al**. 2014, PLOS Computational Biology

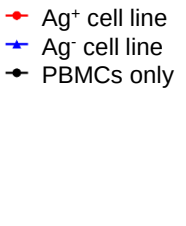
Selectivity
(binding pattern by Alanine scanning)

Activity & Selectivity
(T cell activation assay)

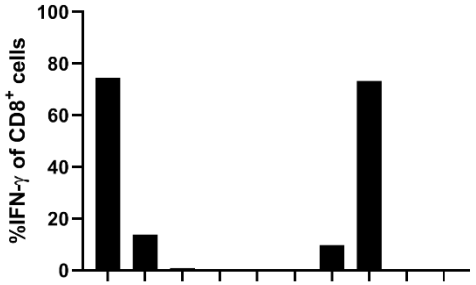
pMHC-A x CD3

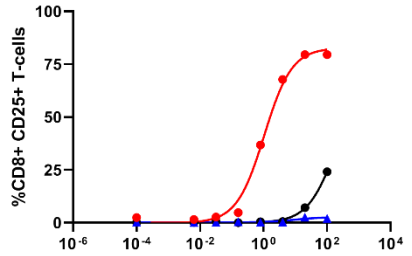


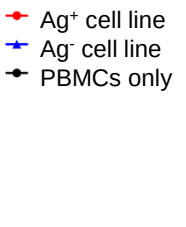




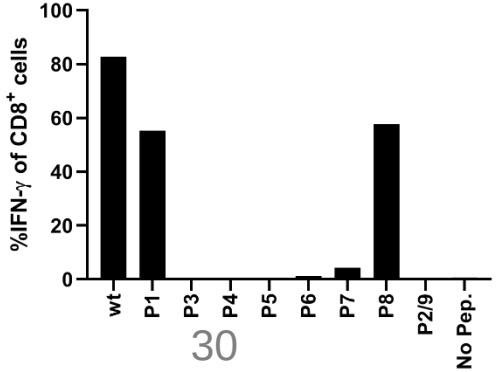
pMHC-B x CD3

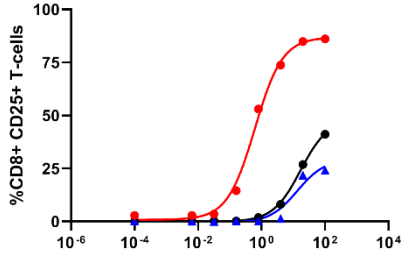


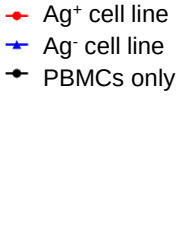




pMHC-C x CD3







DARPin® T-cell engager [nM]

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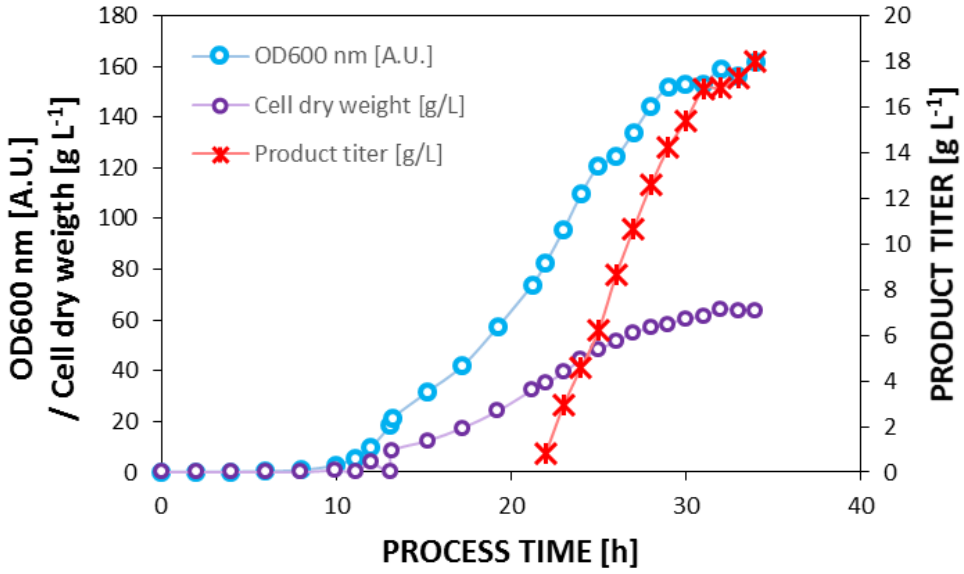
COVID-DARPin Manufacturing Advantages



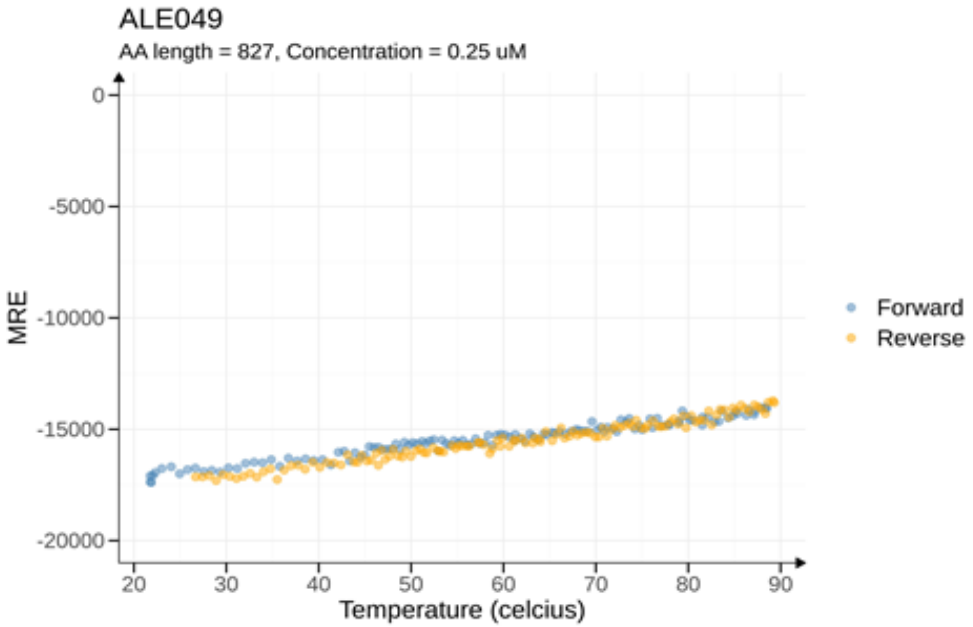
AGC Biologics

- High yield **bacterial** production
  - **Over 1kg** of DARPin material produced in 100L
- No lengthy cell line development
- Standard chromatography and filtration steps for DSP
- Up to **four manufacturing cycles per month** on a single fermenter
- Additional production slots confirmed with AGC (100L & 1000L)
  - Slots available for both MP0420 and MP0423

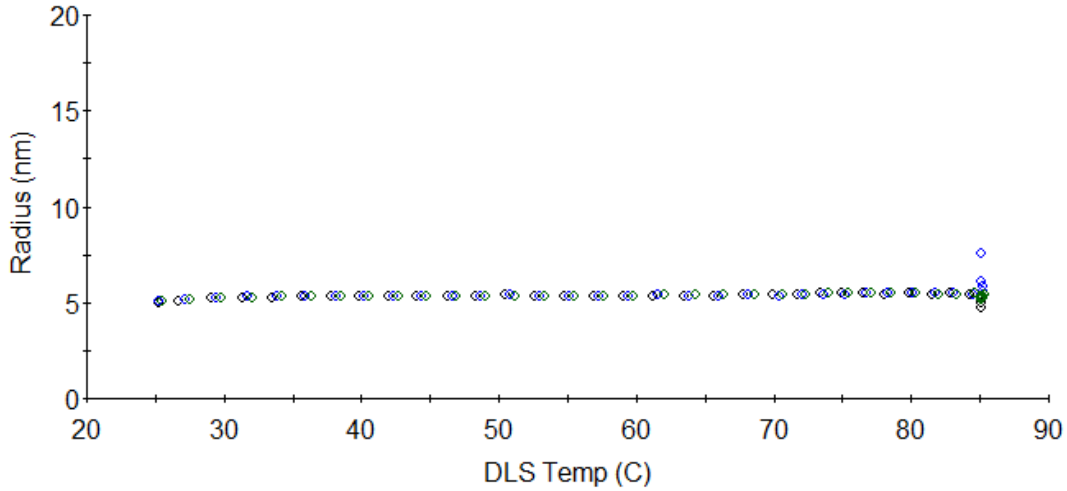
MOLECULAR partners

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

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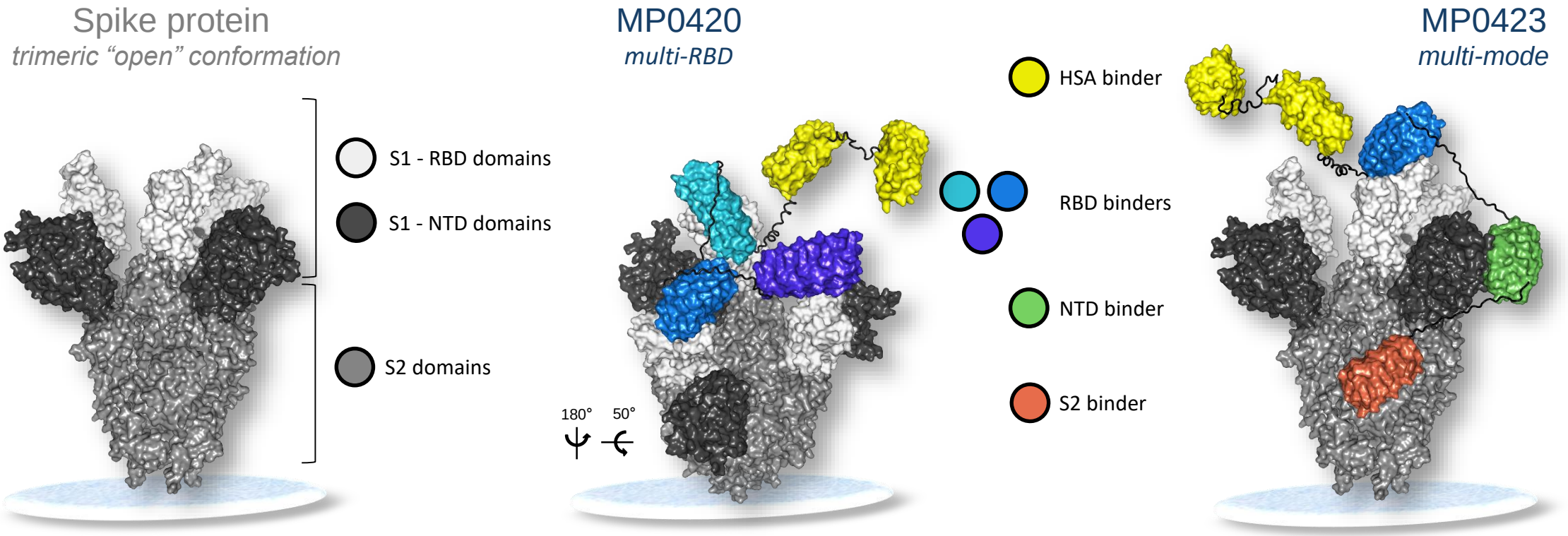
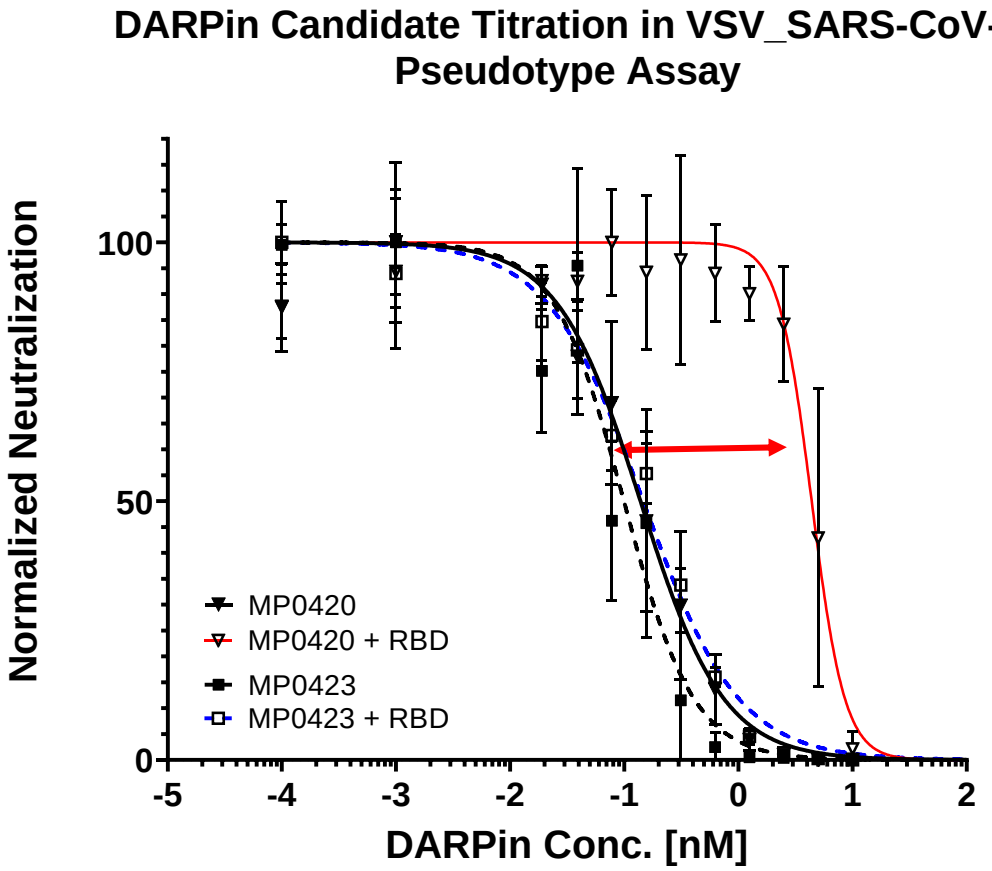
MP0420 & MP0423 – Two COVID-DARPin Candidates



- 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

MOLECULAR partners

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

MOLECULAR partners

Two differentiated anti-COVID candidates

- **MP0420 – Best-in-Class anti-COVID-Candidate**
  - ✓ Highest potent drug candidate avoiding viral escape
  - ✓ Long-acting and safe drug candidate
  - ✓ Production of amounts for global use feasible (and not competing with mABs)
  - ✓ Simple out-patient dosing opportunity (s.c.)
  - ✓ Speed to FIH Q4/2020

- **MP0423** as global solution to cover the Achilles heel of antibodies & vaccines: escape to any and all RBD mutations
  - ✓ All of the benefits of MP0420
  - ✓ Speed to FIH H1/2021

COVID-DARPin Development Status

- Manufacturing
  - First GMP material already produced in August
  - Additional slots booked at AGC Biologics (100L and 1000L)
- Regulatory
  - FIH for MP0420 in Q4 (November)
  - Engaging with multiple clinical consortia for streamlined clinical trial and regulatory processes
- Government Support
  - Swiss Army Lab supported all virology work
  - Swiss Government reservation agreement for 200’000 doses of MP0420
    - High mid-single digit million CHF reservation fee
    - Price per dose will be negotiated once dose is fixed

AGC Biologics

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

MOLECULAR partners