Custom Built Biology for Patients

Corporate Presentation

Kempen Conference

April 2022

Molecular Partners AG, Switzerland
(SIX: MOLN, NASDAQ: MOLN)

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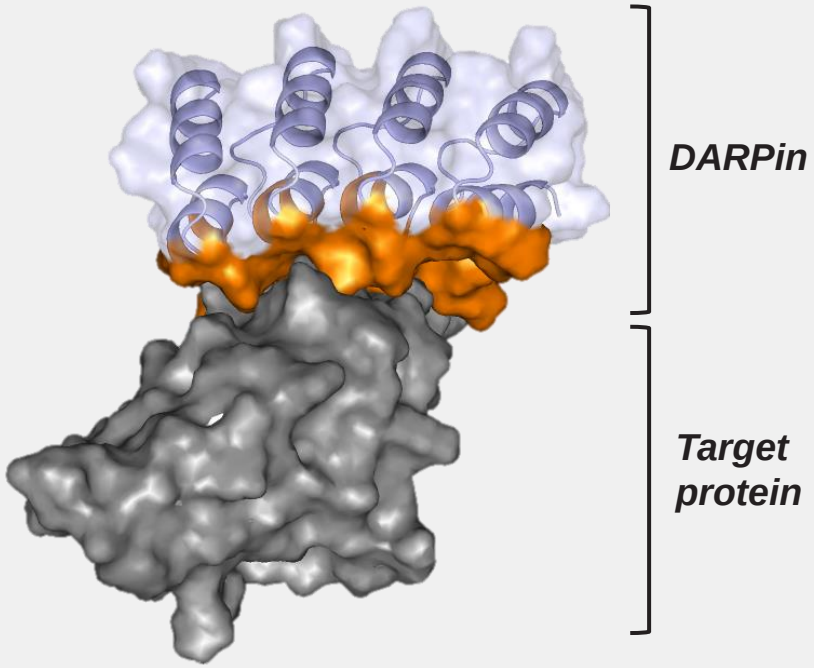
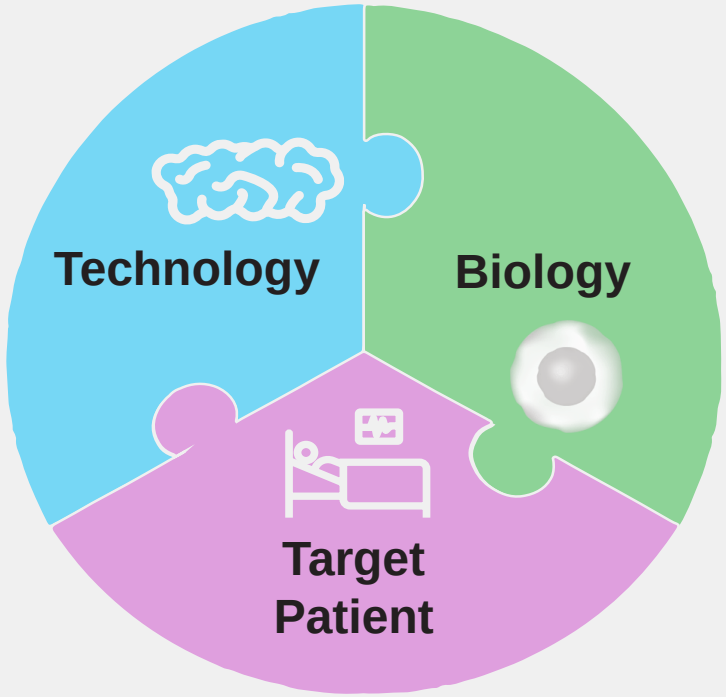
DARPins: The Core of our Drug Engine

DARPins are binding proteins derived from natural ankyrin repeat proteins



DARPin **KEY PROPERTIES**	DARPin **ADVANTAGE**
Small size (15 kDa)	➢ Deep tissue penetration ➢ High molar concentration
Rigid protein scaffold	➢ Ultra-high binding affinity and selectivity
Simple & robust architecture	➢ Turn-key multispecifics ➢ Easy coupling of payloads

MP Strategy – building on our Strengths



TECHNOLOGY

We leverage the advantages of the **DARPin technology** to provide unique solutions to impact biology and bring value to patients

BIOLOGY

Our candidates' design aims to **directly change the course** of **disease biology** and allow testing in a model with **high translatable value**

TARGET PATIENTS

We aim to drive **true patient value** with **early clinical read-outs**

We strive to **collaborate** with the best scientists and clinicians in the field from ideation to clinical trials

Translating DARPin Properties into Differentiated Therapeutics

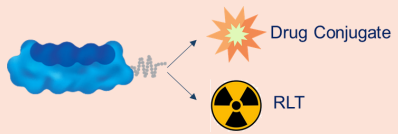
Delivery Vectors "Radical Simplicity"

Multispecificity enabled possibilities

Conditional activation "Radical Complexity"

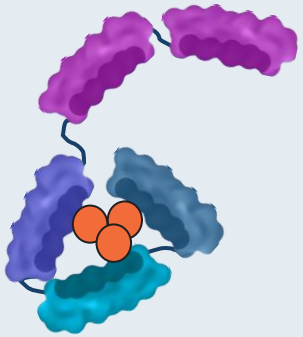
RLT & DDC

Small size: high affinity delivery, limited systemic exposure



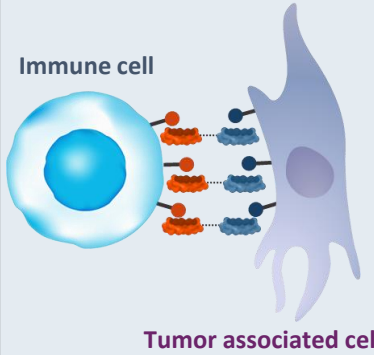
Ensovibep

Cooperative binding to inhibit SARS-Cov-2 and prevent escape



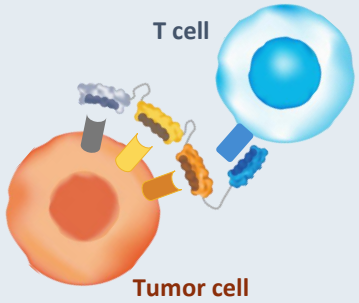
MP0310 & MP0317

Tumor localized clustering activates effector cells in tumor



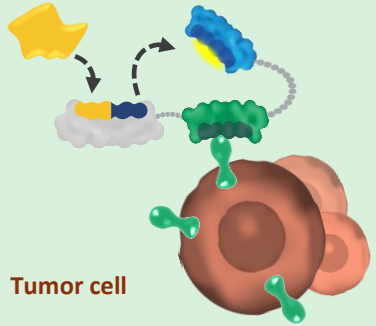
MP0533

Avidity driven TCE for tumor specificity and heterogeneity



SWITCH

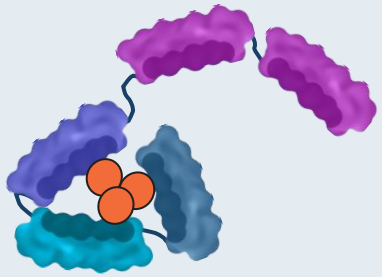
Programming highly potent effectors to omit off-tumor activity



Synergistic Partnerships Built on a Versatile Drug Class

Ensovibep

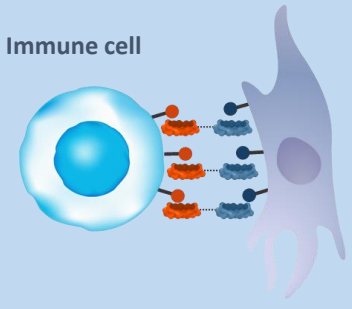
- Leverage production, global development and distribution of Novartis for ensovibep
- CHF 60 million upfront
- CHF 150 million received upon option exercise
- 22% royalty on sales



NOVARTIS

AMG 506 / MP0310

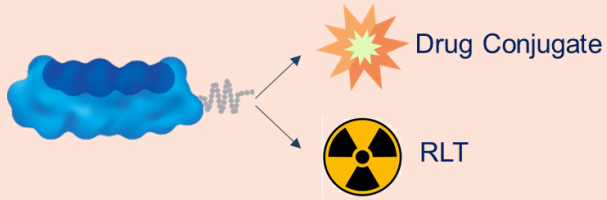
- Partnership with Amgen to combine AMG 506 / MP0310 with BiTE® molecules
- Phase 1 conducted by MP to develop for combination studies
- $50 million upfront
- ~$500m in milestones and mid teen royalties



AMGEN®

Radioligand therapeutics

- Combining small size and high affinity and specificity of DARPins with Novartis' radioligand expertise
- 2 cancer antigen targets
- $20 million upfront
- Up to $560 million and low double-digit royalties



NOVARTIS

Over $1B in potential milestone across multiple programs

Pipeline

Infectious disease | Discovery Oncology | Oncology | Ophthalmology

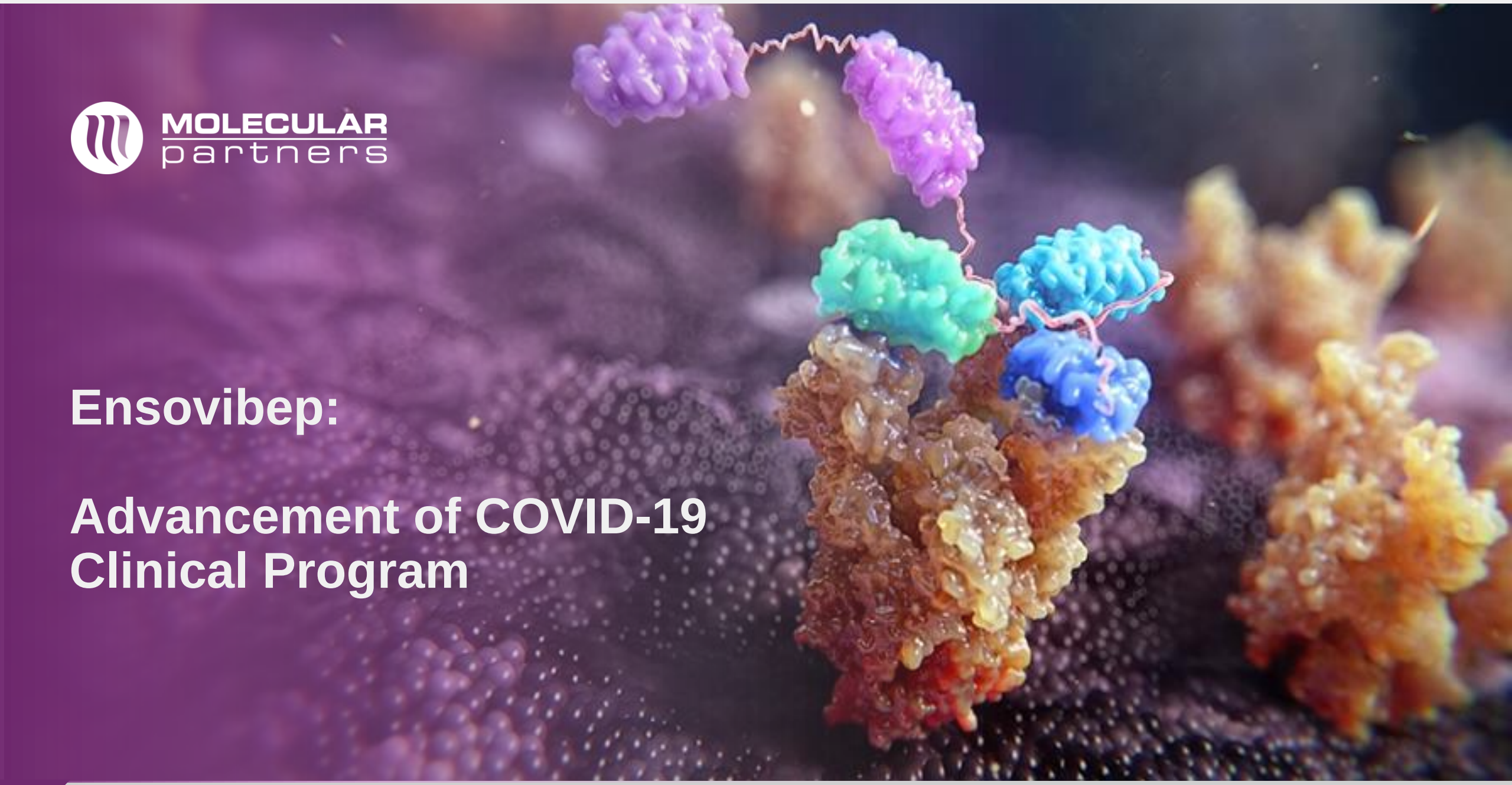
Pipeline

CANDIDATE / FOCUS	RESEARCH	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	RIGHTS
Ensovibep – Covid	Covid ambulatory – EMPATHY					NOVARTIS
Next Gen Covid	Future VoC*					MOLECULAR partners
AMG506 / MP0310 FAP x 4-1BB	Solid tumors					AMGEN
MP0317 FAP x CD40	Solid tumors					MOLECULAR partners
MP0533 CD3 x CD33+CD70+CD123	AML					MOLECULAR partners
Abicipar VEGF	wet AMD – CEDAR & SEQUOIA					MOLECULAR partners
Radio Ligand Therapy	Solid tumors					NOVARTIS

Platform Discovery

Radical simplicity & Conditional Activation	MOLECULAR partners
Additional Infectious Diseases	

* VoC = Variant of Concern

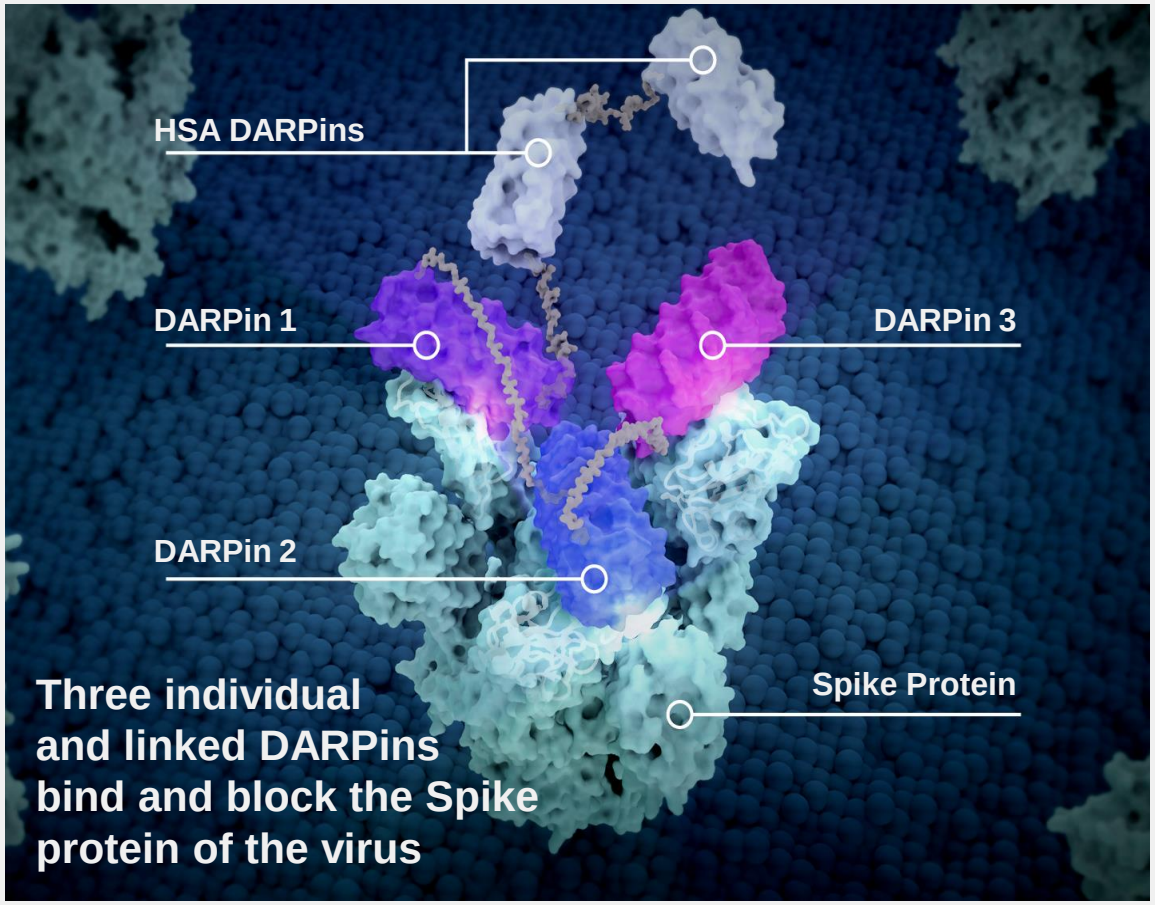


Ensovibep:

Advancement of COVID-19 Clinical Program

Structure and Features of Ensovibep Neutralizing the SARS-CoV-2 Spike Protein

3D model of a DARPin molecule



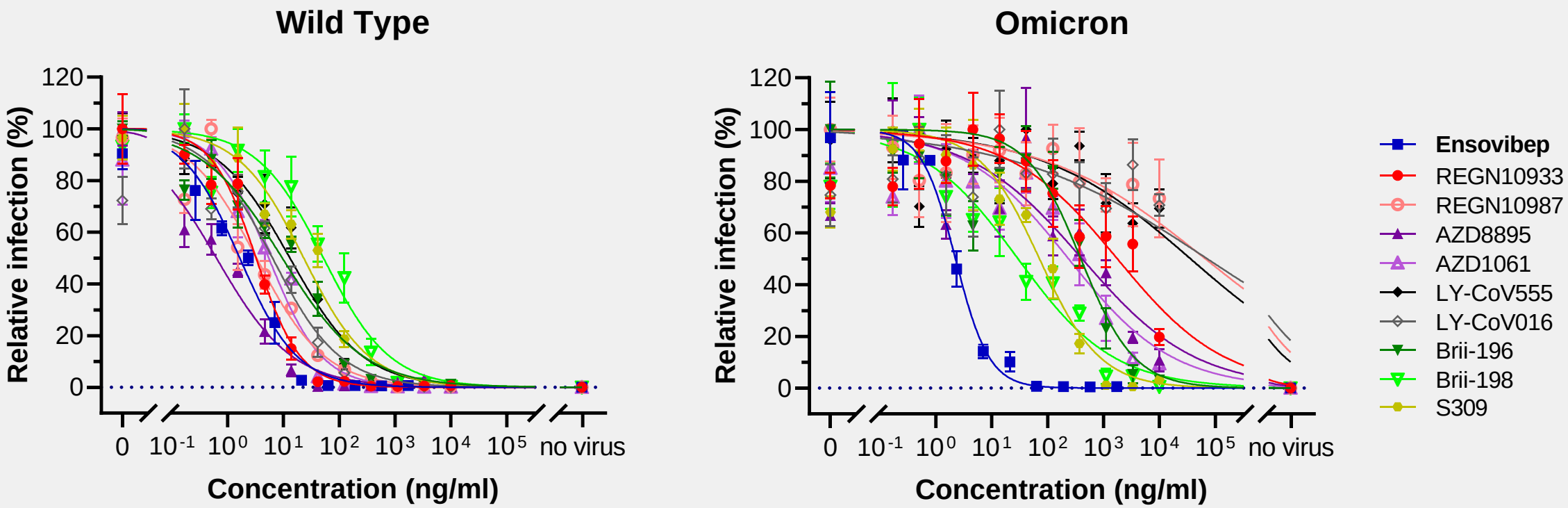
Characteristics

- High potency: high binding affinity and avidity leads to one of the highest anti-viral potencies reported to date
- Pan variant activity: cooperative binding of different sites allows blocking of all described variants of concern, so far
- Simple administration: long-half life, high solubility and low dose activity can allow for single administration via i.v., i.v. bolus, or s.c. injection
- Supply: microbial manufacturing in *E.Coli*

DARPin, designed ankyrin repeat proteins; RBD, receptor binding domain; HSA, human serum albumin; SARS-Cov-2, Severe acute respiratory syndrome coronavirus 2.

Walser M. *Biorxiv*. 2021. https://doi.org/10.1101/2020.08.25.256339

Ensovibep Retains Full Activity Against Omicron



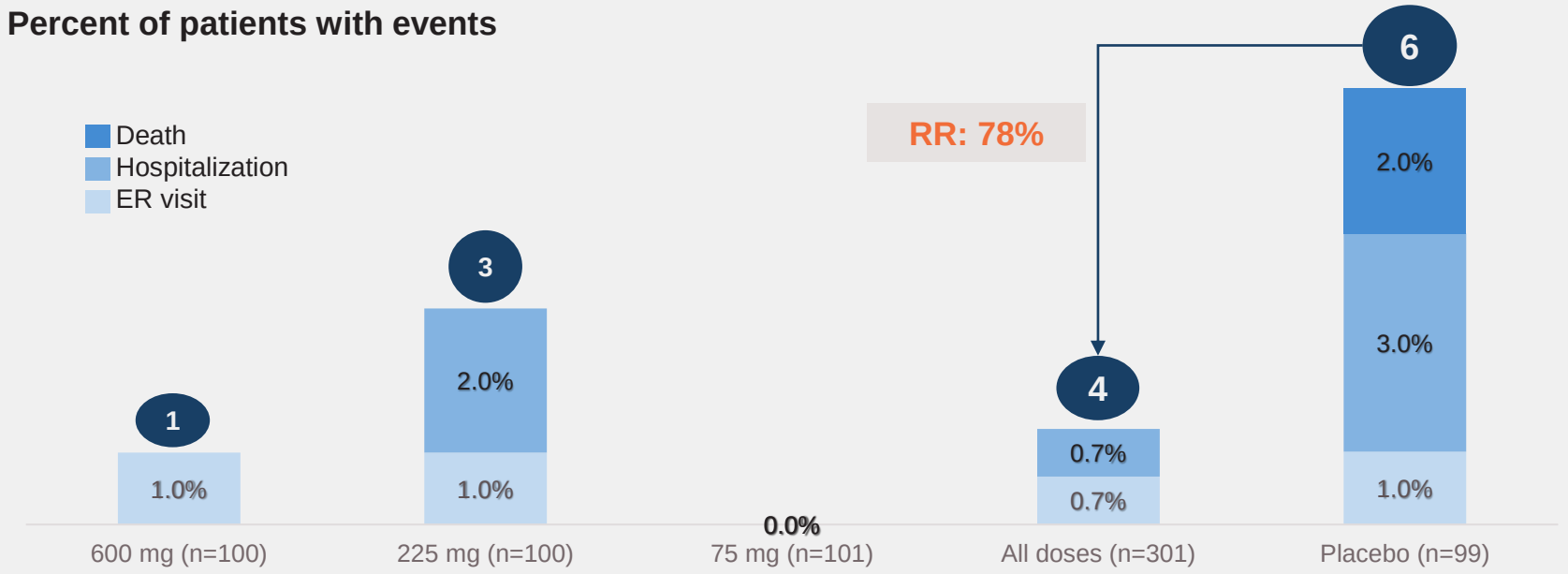
EMPATHY Part A (Phase 2) Clinical Design and Endpoints

Objective	**Demonstrate superiority of ensovibep, compared to placebo, in reducing SARS-CoV-2 viral load through Day 8 and select a dose for Phase 3**
Population	• Ambulatory symptomatic patients diagnosed with COVID-19 • Onset of symptoms within 7 days prior to dosing • Positive Rapid Antigen Test on the day of dosing • Vaccinated patients allowed
Primary Endpoint	• **Time-weighted viral load reduction through through Day 8**
Key Secondary Endpoints	• Reduction in ER visits and/or hospitalizations (≥ 24 hours) and/or death up to Day 29 • Time to sustained clinical recovery (resolution or improvement in clinical symptoms) up to Day 29

Cohorts	
ensovibep 600mg i.v.	~ 100 pts
ensovibep 225mg i.v	~ 100 pts
ensovibep 75mg i.v.	~ 100 pts
placebo i.v.	~ 100 pts

EUA Submission Supported by Secondary Endpoint in Reductions in Hospitalization and/or ER Visit, or Death

Patients with hospitalization and/or ER visit related to COVID-19 or death



Note:

In the hierarchy of ER-visit/ hospitalization/ death- patients are counted in the highest category

- ER visits exclude those resulting in hospitalization/ death
- Hospitalizations exclude those that resulted in death

Novartis Deal Terms and Next Steps

Deal Terms

- Novartis option exercise for in-licensing of ensovibep: CHF 150m
  - CHF 60m previously received at signing of option agreement (20m cash/40m MOLN shares)
- Royalty of 22% on sales in commercial countries
  - Molecular Partners has agreed to forgo royalties in lower income countries and is aligned with Novartis' plans to ensure affordability based on countries' needs and capabilities.

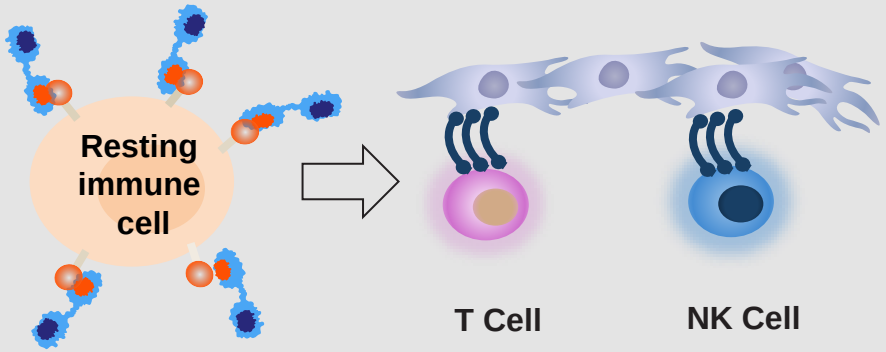
Next Steps

- EUA submitted and review ongoing
- Discussion with appropriate federal agencies regarding supply agreements of ensovibep
- Phase 3 initiation
- Planned initiation of subcutaneous Phase 2/3 study (led by Novartis)

MP0310 and MP0317

Multispecific Immune Activators

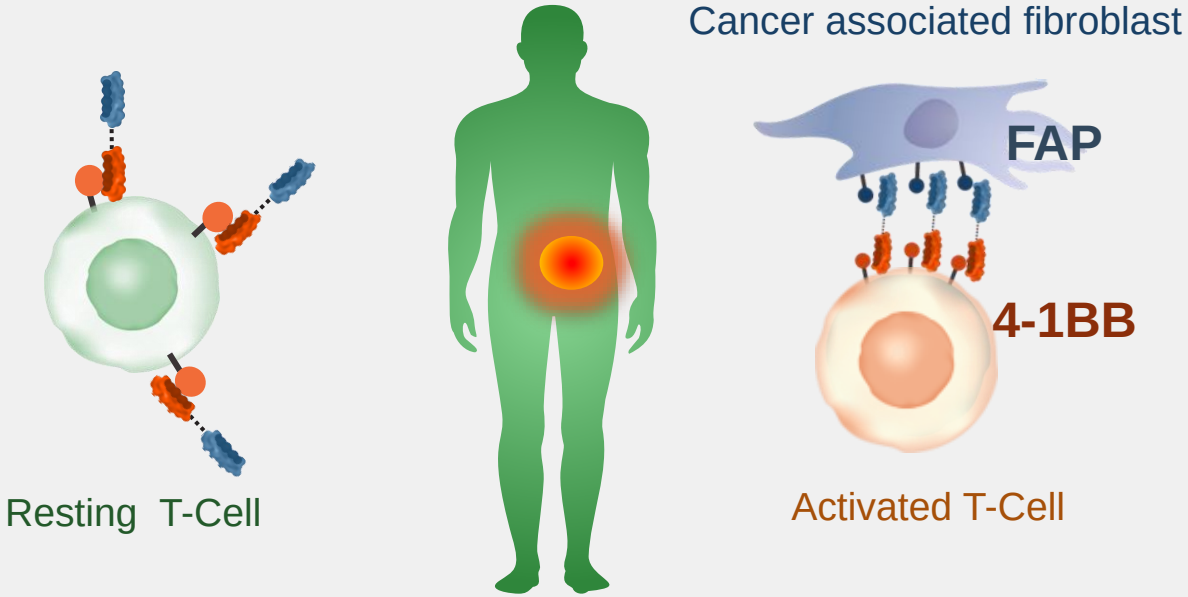
AMG 506/MP0310: Localized Activation of 4-1BB



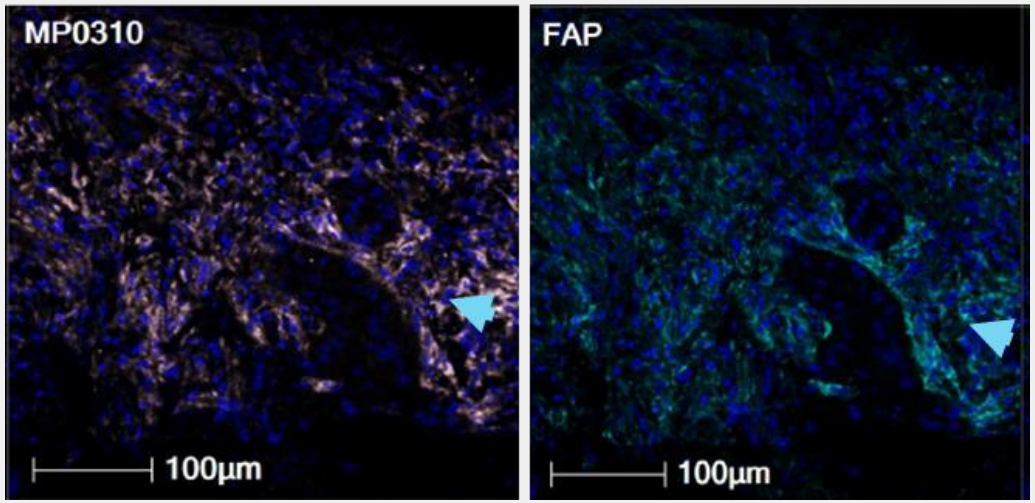
- **Good safety profile without major systemic toxicity**
  - No liver toxicity or systemic activation of immune cells
  - IRRs frequent but manageable
- MP0310 is observed in tumor tissue
- Tumor biopsies show tumor-localized immune response consistent with the MoA
- **Presently investigating appropriate dosing schedule for sustained activity**
- $50m upfront, ~$500m in milestones plus royalties

AMG 506 / MP0310: Localized Activation of 4-1BB FAP – an Ideal Target for Tumor-localized Activity

- Immune-cell activation via 4-1BB is associated with liver tox
- MP0310/AMG506 is designed to activate immune cells in the tumor only via FAP clustering



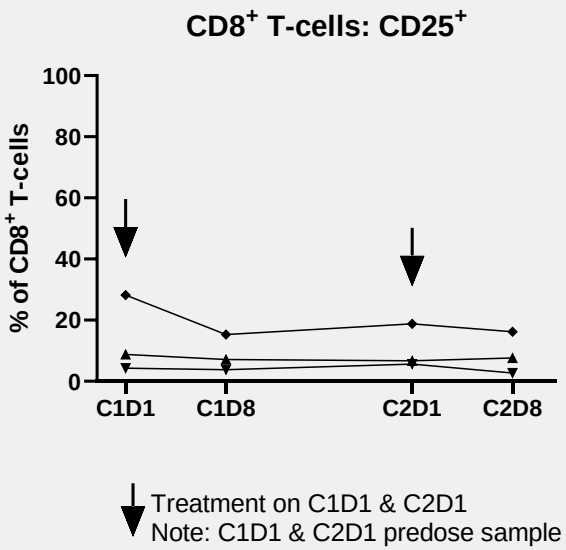
MP0310 & FAP staining in human biopsies from Phase 1 trial



- When dosed systemically, MP0310 binds to and co-localizes with FAP

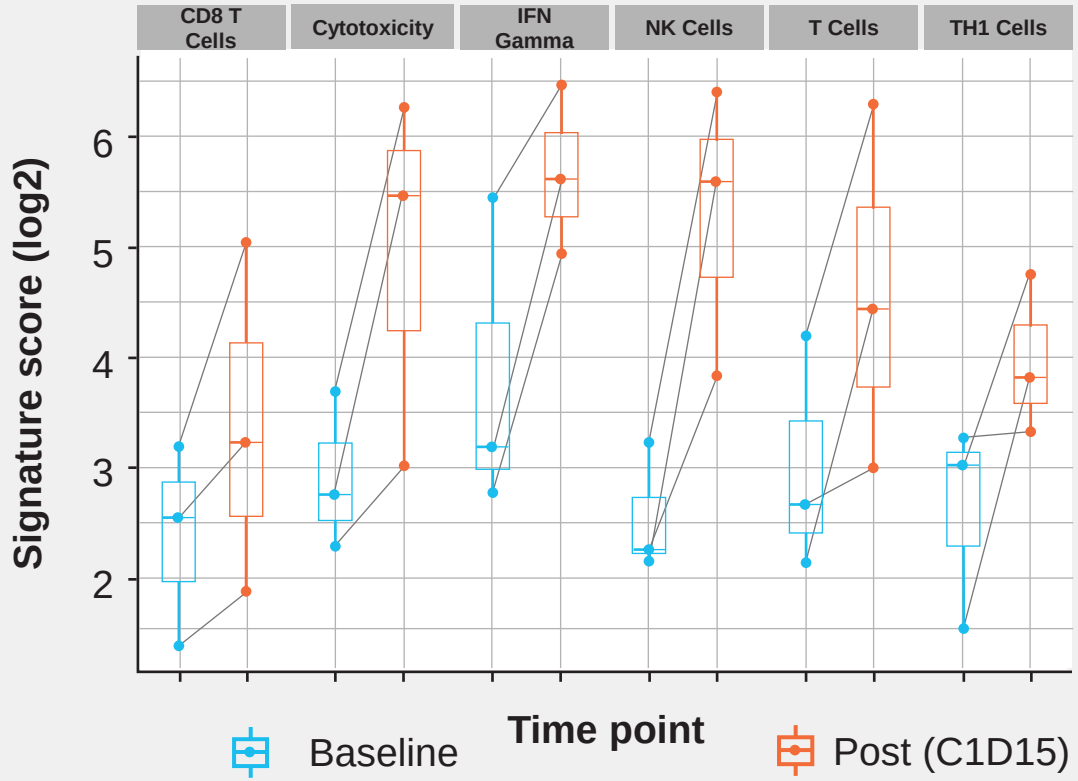
PD Activity in Paired Biopsies Supports AMG 506 / MP0310 MoA on 4-1BB Activation

BLOOD



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

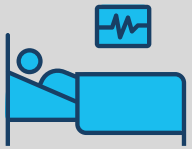
TUMOR



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

MP0317: Localized Activation of CD40

Target Patient

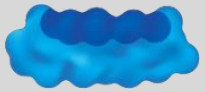


- Solid tumor patients with positive FAP expression
- Many patients still fail to benefit from current immunotherapy options, or relapse

Disease Biology

- CD40 is a potent activator of dendritic cells, macrophages, and B cells, and has long been considered an attractive immunotherapy target
- Prior attempts at targeting CD40 have shown anti-tumor activity but remain hampered by toxicity issues

DARPin Advantage



- MP0317 is designed to activate CD40 in a context dependent manner, by anchoring to FAP and activating via clustering
- Preclinical data show local activation of immune cells while limiting off target toxicity

Expected Milestones

- **FIH studies initiated in Q4 2021**
- **Initial data anticipated in H2 2022**
- Rapidly explore expansion arms in phase 1b

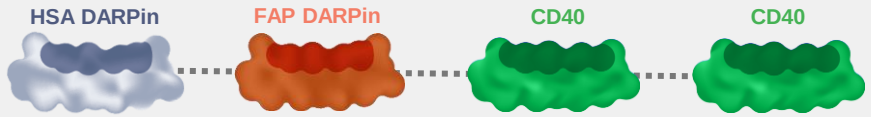
Summary: Multispecific Immune Activators

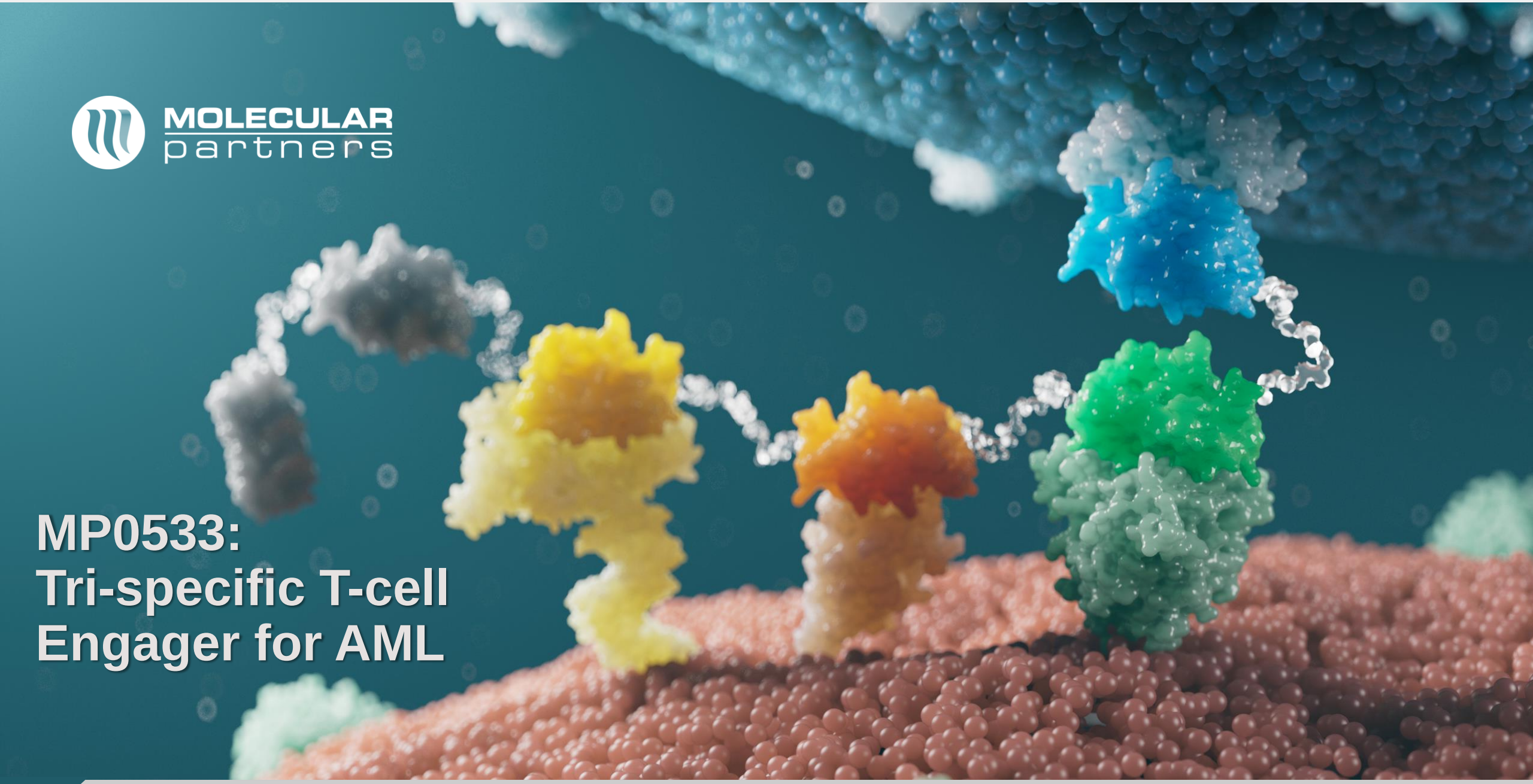
AMG 506 (MP0310)

- Phase 1 mechanistic POC established
  - Demonstrating localized activity of 4-1BB in the TME
  - No elevated liver enzymes or systemic tox identified
- Ideal program for T-cell engagers (CD3) and potentially PD-1 checkpoint inhibition
- Ongoing weekly dosing will determine optimal go-forward treatment regimen
- Data available for Amgen evaluation in Q3

MP0317

- Following the same concept of activation by clustering to FAP
- MP0317 evaluating if a safer administration of CD40 can be therapeutically beneficial to patients
- CD40 stimulation would allow for multiple combination treatments
- Phase 1 ongoing, initial FIH data available later 2022





MP0533: Tri-specific T-cell Engager for AML

MP0533: Tri-specific T-cell Engager for AML

Target Patient

- ~20,000 people are diagnosed with AML every year
- Over 50% of patients die in the first year
- High relapse rates

Disease Biology

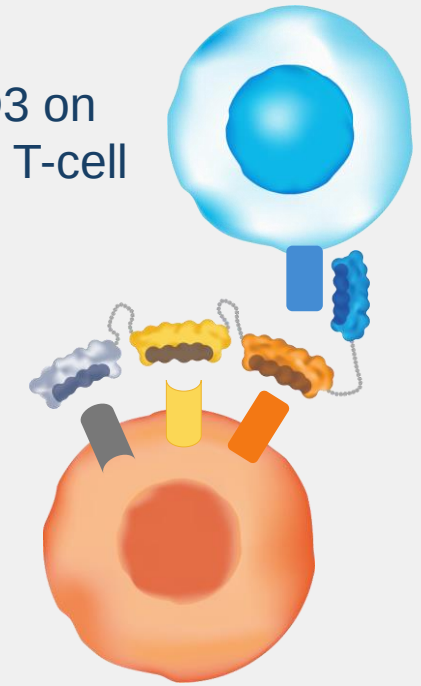
- Persistence of LSCs* is the driver of relapse
- Tumor antigens in AML are also found on healthy cells
- On-target toxicity (not clean targets) limit current T-cell engager approaches

DARPin Advantage

- Avidity driven multispecific DARPin to target LSCs
- T cell are activated only when 2 or more TAA's** are bound
- Open therapeutic window for "difficult" targets

Expected Milestones

- FIH clinical studies initiating in late 2022

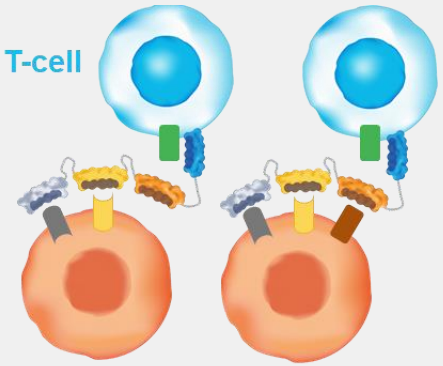


*Leukemic Stem Cell
** Tumor Associated Antigen

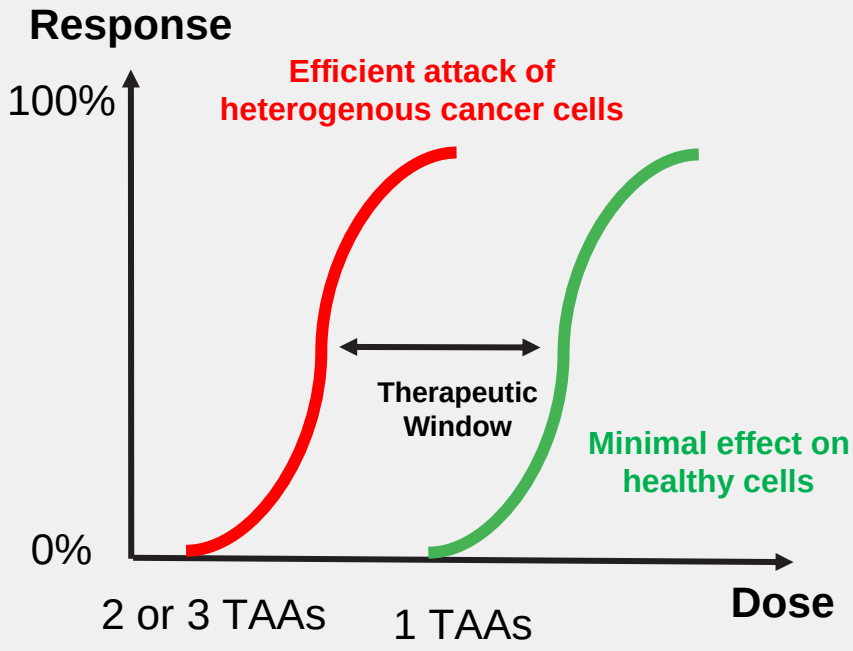
Unlock the value of “not-clean” targets to kill Leukemic Stem Cells and blasts in AML

- Persistence of LSCs is the driver of relapse in AML
- Targets in AML are also on healthy cells, leading to on-target toxicity (not clean targets)
- Goal: avidity-driven killing of LSCs and blast, while less killing of HSPs

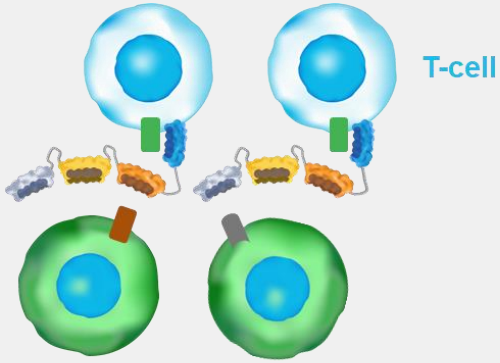
Multi targets
High avidity engagement



Malignant AML cell types - LSCs or blasts
(express 2 or 3 TAAs at high density)



Single targets
Low affinity engagement

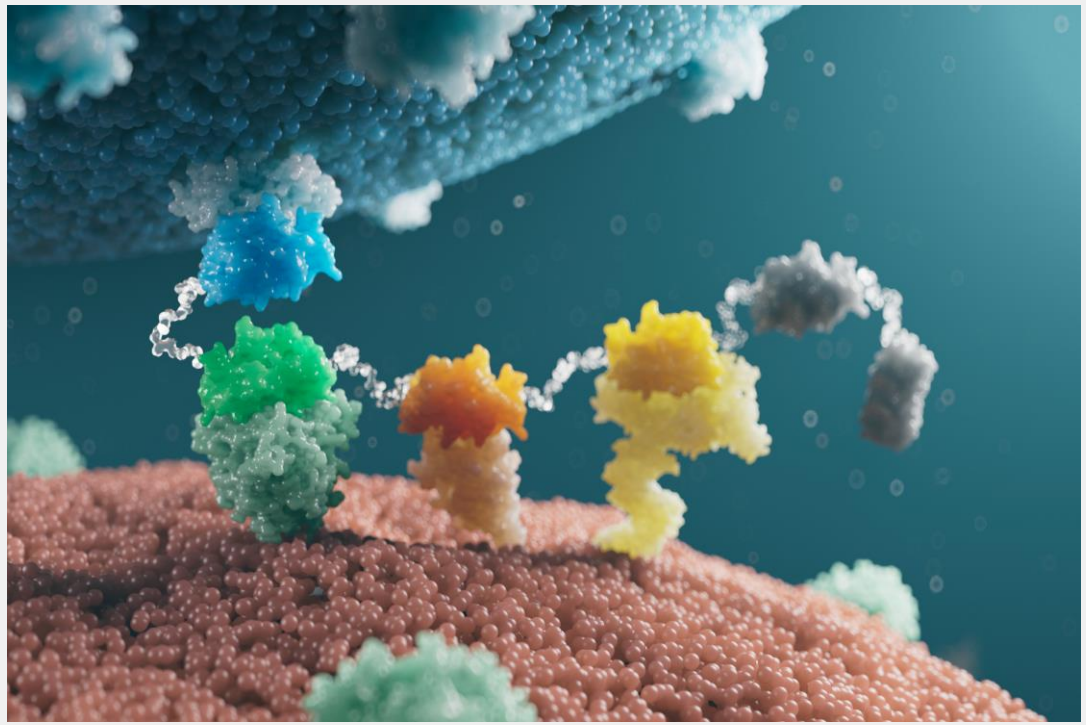


Healthy normal cell
HSPCs or myeloid cells

MP0533: a Unique DARPin Solution for AML Patients

- **Properties of an ideal AML drug:**
  - Ensure long term control of the disease by eliminating LSCs ✓
  - Control tumor heterogeneity by targeting multiple Ag ✓
  - Increase the therapeutic window ✓
    - Limited killing of healthy HSCs
    - Reduced CRS

➢ **Phase 1 clinical trial initiation H2 2022**



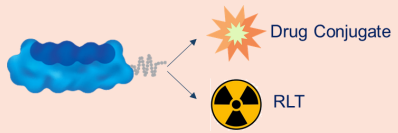
Research Activities

Translating DARPin Properties into Differentiated Therapeutics

Delivery Vectors "Radical Simplicity"

RLT & DDC

Small size: high affinity delivery, limited systemic exposure



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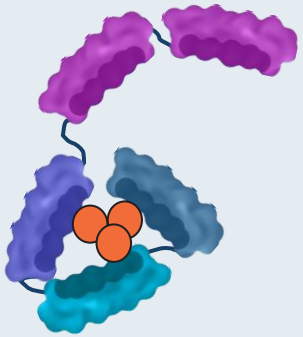

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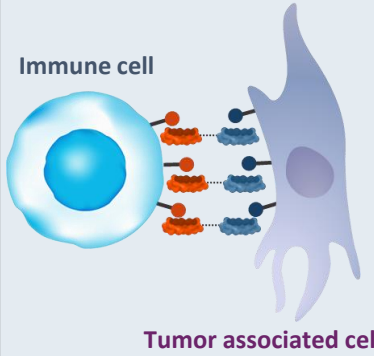

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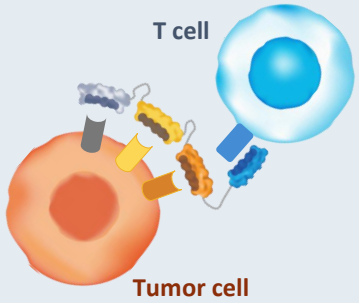
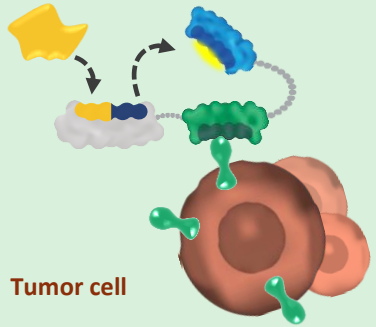


Conditional activation "Radical Complexity"

SWITCH

Programming highly potent effectors to omit off-tumor activity



Summary & Outlook

Financial Guidance for Full-Year 2022

- Total expenses of CHF 75-85 million,
  of which around CHF 8 million non-cash effective costs

- Total cash as of February 28, 2022 – CHF 291.3 million, which include funds received from Novartis in January 2022

- The Company is funded into 2025, excluding any potential payments from R&D partners. Guidance subject to progress and changes of pipeline

Pipeline Inflection Points

Infectious disease | Discovery Oncology | Oncology | Ophthalmology

Pipeline

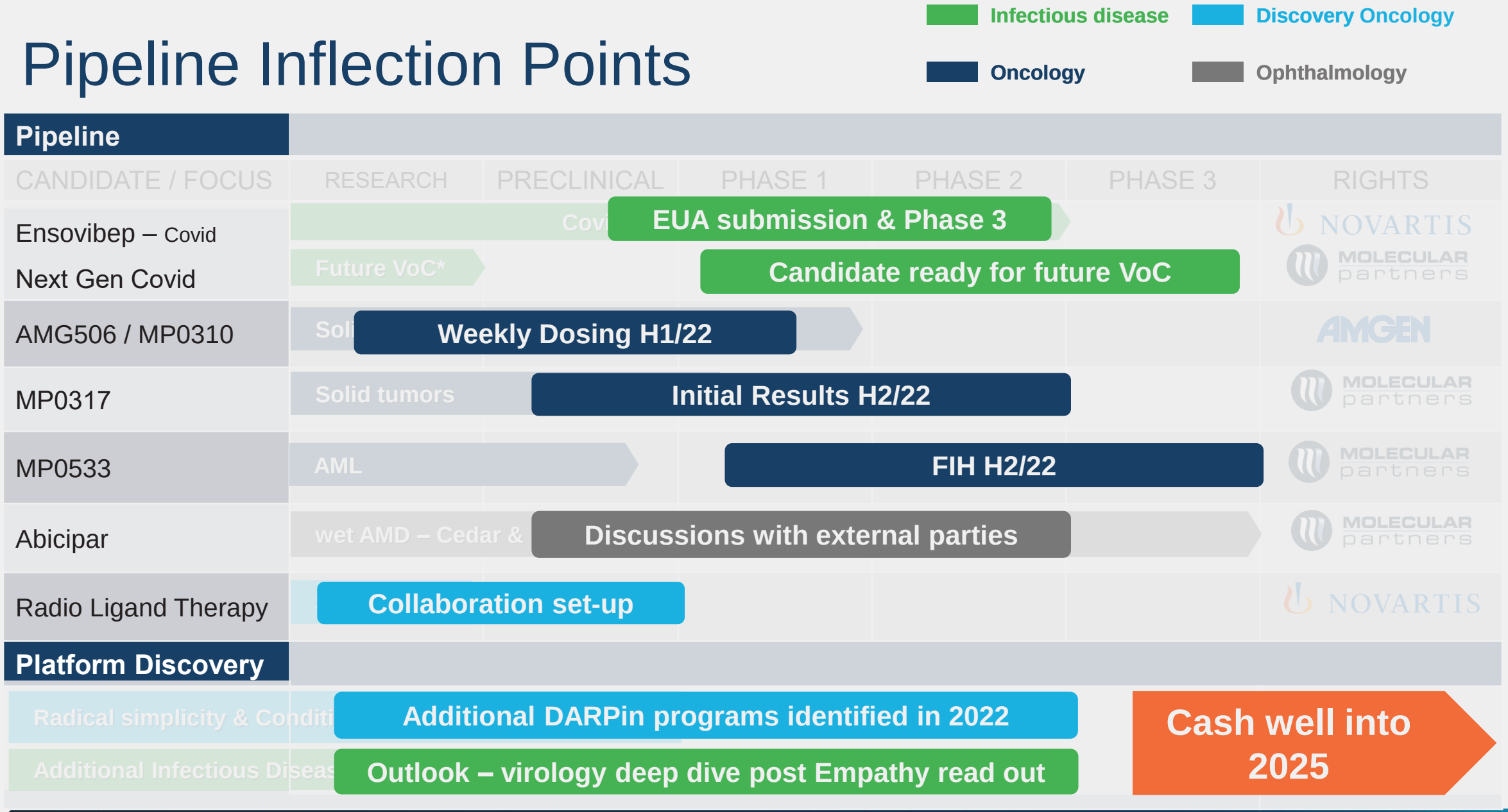
CANDIDATE / FOCUS	RESEARCH	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	RIGHTS
Ensovibep – Covid	Covid ambulatory – Empathy					NOVARTIS
Next Gen Covid	Future VoC*					MOLECULAR partners
AMG506 / MP0310 FAP x 4-1BB	Solid tumors					AMGEN
MP0317 FAP x CD40	Solid tumors					MOLECULAR partners
MP0533 CD3 x CD33+CD70+CD123	AML					MOLECULAR partners
Abicipar VEGF	wet AMD – Cedar & Sequoia					MOLECULAR partners
Radio Ligand Therapy	Solid tumors					NOVARTIS

Platform Discovery

Radical simplicity & Conditional Activation	MOLECULAR partners
Additional Infectious Diseases	

* VoC = Variant of Concern

Pipeline Inflection Points



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