Molecular Partners:

Novel Therapeutic Designs Applied

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Molecular Partners AG, Switzerland (SIX: MOLN)

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Molecular Partners in Brief

Pipeline Progress

- ✓ **Abicipar** first true 12-week dosed anti-VEGF in wAMD; **BLA** of **accepted** for review summer 2019
- ✓ **MP0250** focused on MM with activity in patients that did not benefit from other treatments
- ✓ **MP0310/AMG 506**: first tumor-localized immune agonist progressing in Phase 1
- ✓ New development candidate, **MP0317 (FAPxCD40), added to pipeline**
- ✓ First DARPin® candidates binding **peptide-MHC** passed specificity threshold

Strengthened Team

- ✓ **Nicolas Leupin** joined as **CMO** from Argenx

Three newly nominated board members

- ✓ **Vito Palombella**, CSO Surface Oncology
- ✓ **Michael Vasconcellas**, CMO Flatiron
- ✓ **Sandip Kapadia**, CFO Intercept Rx

Flexible Business Model

- ✓ **Allergan** collaboration on **Abicipar: USD 360m** in potential MS; DD royalties to mid-teens
- ✓ **Partnership** with **Amgen** to co-develop **MP0310** – USD 497m in potential MS; DD royalties to high-teens
- ✓ Well financed through mid-2021, **on-track towards recurring income** with expected abicipar launch in 2020 by Allergan

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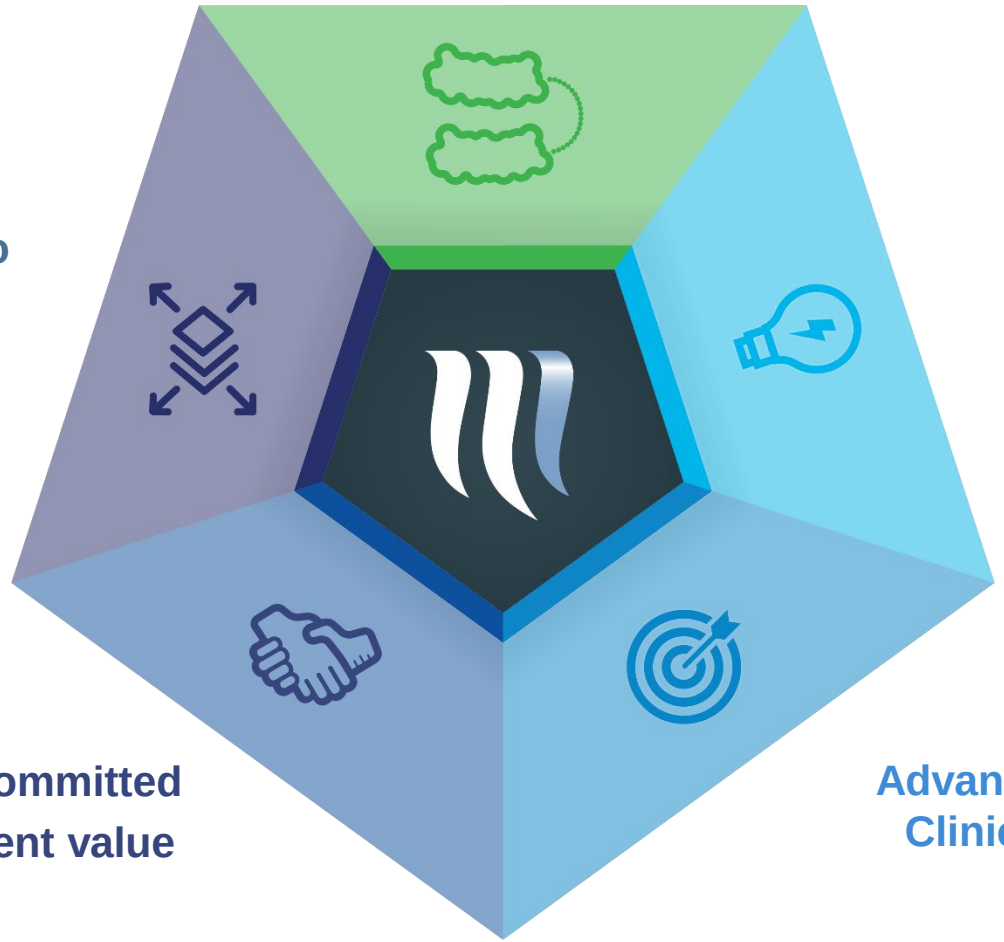
Key Advantages of Molecular Partners

Validated source of DARPin® Candidates

Flexible business model to maximize product value



Novel Therapeutic Designs

1. Tumor-local immune agonists
2. pMHC targeting platform
3. Next Gen T-cell engagers

Strong team committed to deliver patient value

Advanced and balanced Clinical Development Portfolio

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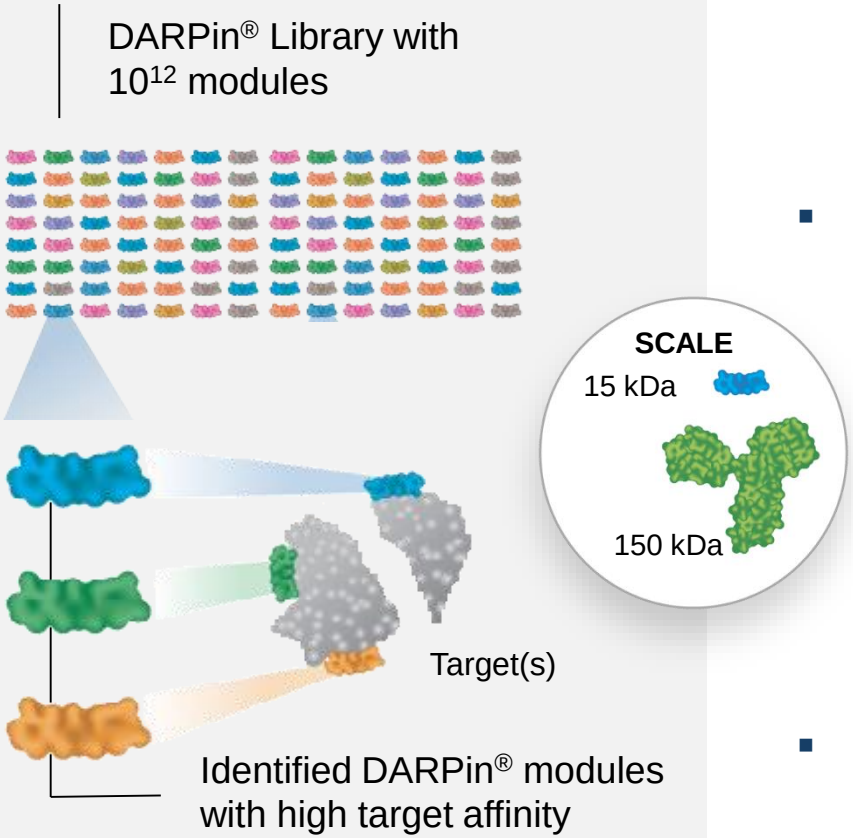
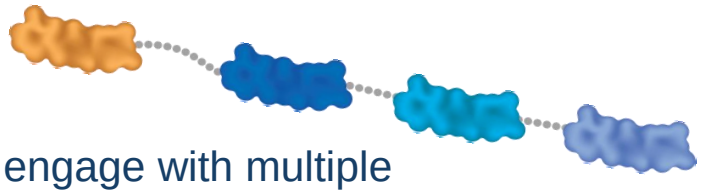
DARPin® Platform: A Validated Source for Drug Candidates

DARPin® module selection



- **Abicipar: Ophthalmic validation**
  - Demonstrated safety and activity in >1,500 patients
  - Manufacturing at commercial scale established
  - Regulatory applications accepted by FDA and EMA

- **MP0250: Systemic validation**
  - Long half-life (HSA DARPin binder, 12 day half-life)
  - Low immunogenicity



  - Proof of multi-DARPin® potential to engage with multiple targets simultaneously

- **Novel Therapeutic Designs (NTD) applied**
  - Phase 1 enrolling for MP0310 (AMG 506)

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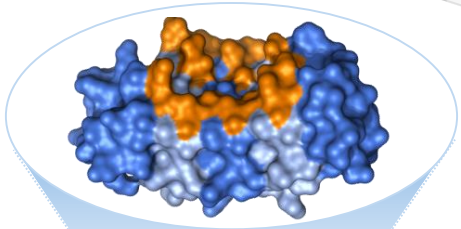
Differentiated Products by Therapeutic Design

DARPin® Features

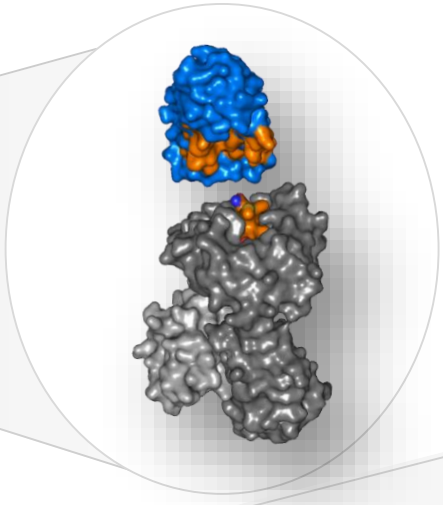
Rigid-body target binding

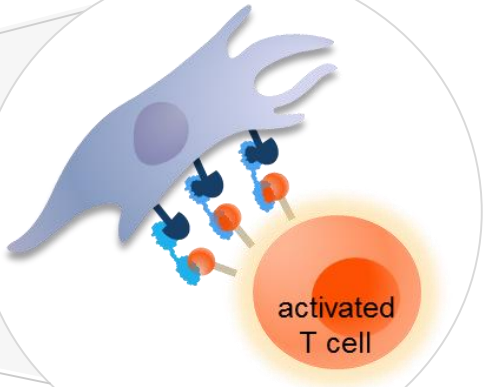


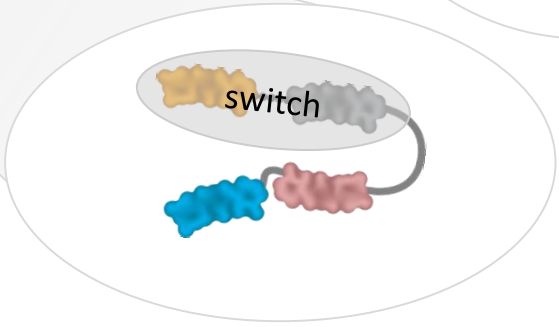
DARPin® domain

Multi-DARPin® formatting

- Small size: 15 kDa
- Simple repetitive architecture: 1 polypeptide
- High affinity and specificity
- Tunable half-life







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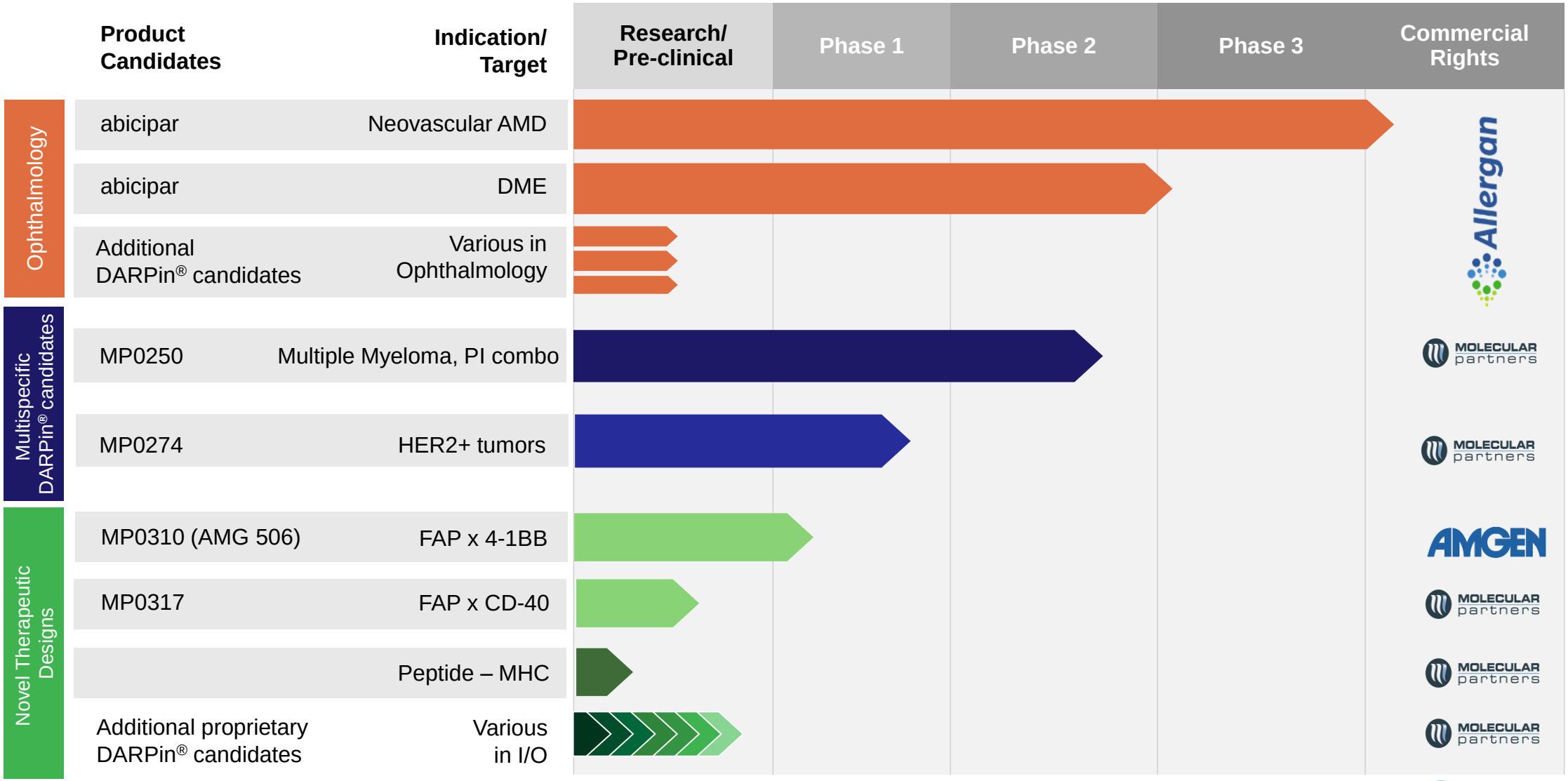
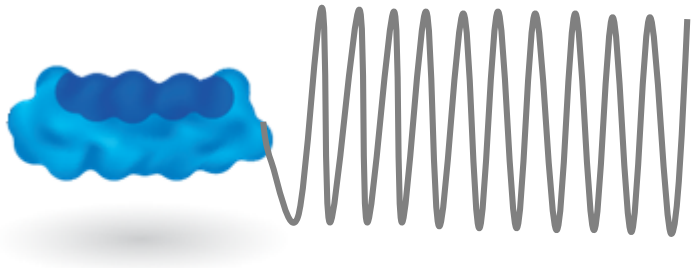
A Balanced and Robust Portfolio



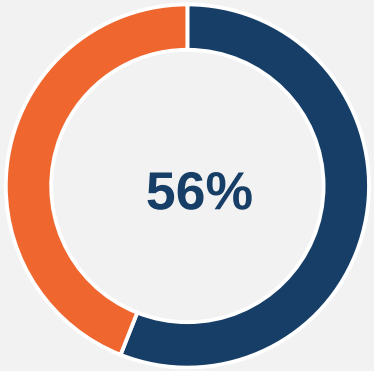
Abicipar has Potential to be First Fixed 12 Week anti-VEGF



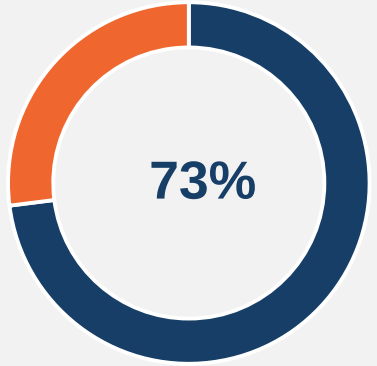
- Long-acting anti-VEGF
- Fix 12-week dosing
- On file with FDA and EMA
- PDUFA date: summer 2020

What Retina Specialists are looking for when treating nAMD patients:

Long-acting / sustained delivery

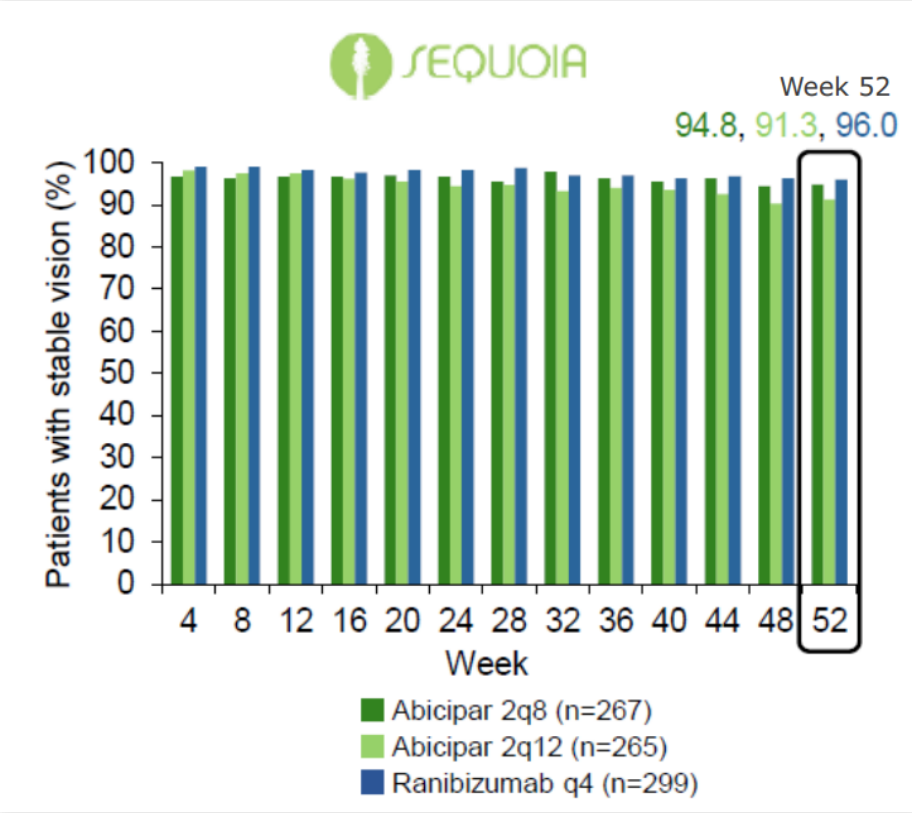


Reduced Treatment Burden

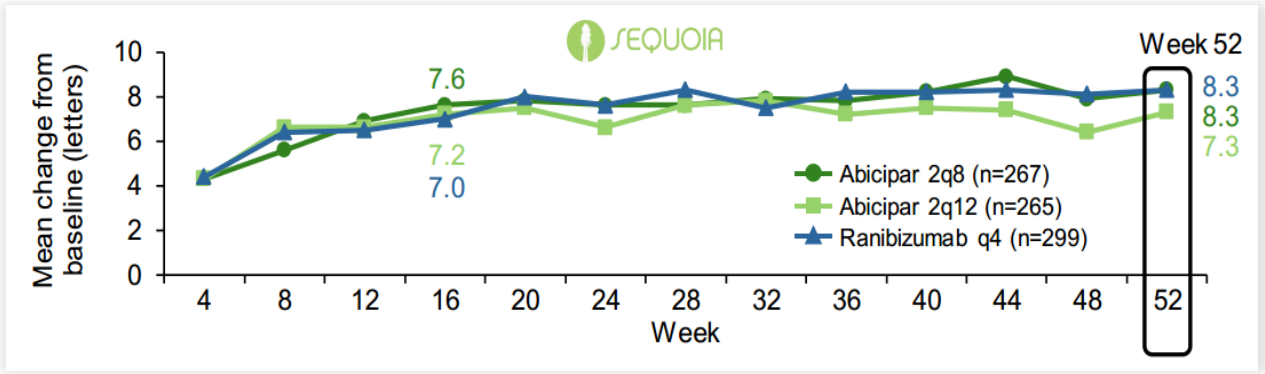


American Society of Retina Specialists Preferences and Trends (PAT) Survey.

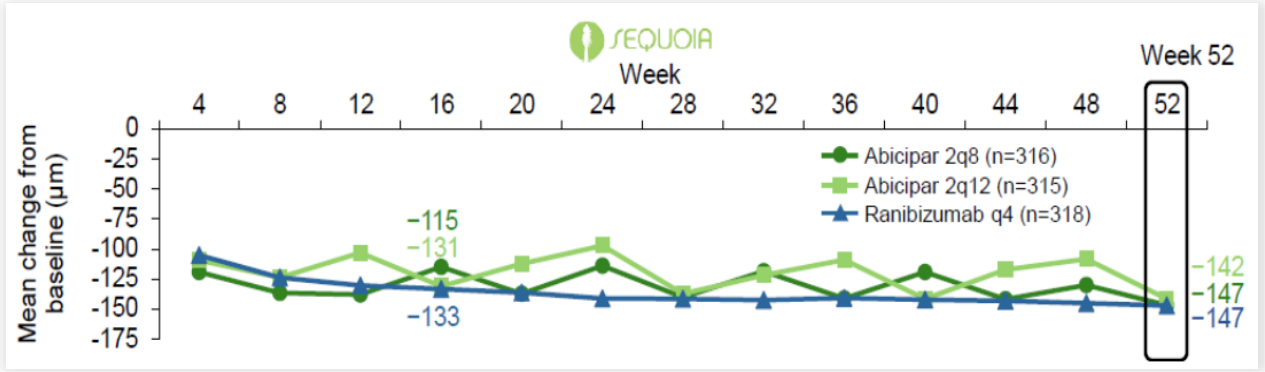
Phase 3 Efficacy Results (SEQUOIA study, 1yr data)



Primary Endpoint: STABLE VISION Abicipar Q8 and Q12 Non-Inferior to Ranibizumab Q4



Secondary Endpoint: Change in BCVA From Baseline Abicipar Q8 and Q12 in SEQUOIA Non-Inferior to Ranibizumab



Secondary Endpoint: Change in CRT similar across in all groups

- Source: Allergan July, 2018 and October 2018

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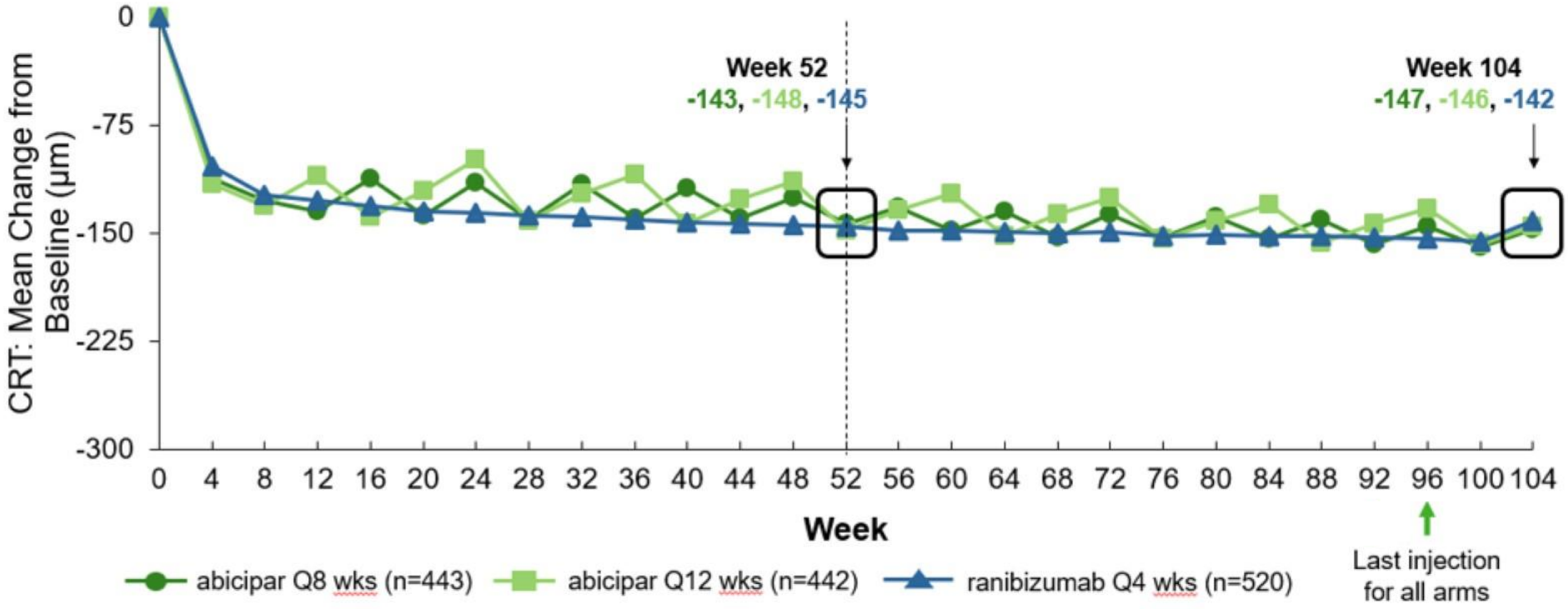
Secondary Endpoint: Mean Change in CRT From Baseline at Weeks 52 and 104

Phase III CEDAR & SEQUOIA



CRT improvement after initial doses were maintained to Week 104 with quarterly abicipar injections (10) vs. monthly ranibizumab injections (25)

CRT = central retinal thickness

Abicipar is under investigation and the safety and efficacy of this product have not been established.

1. Khurana RN, et al. Presented at AAO 2019 Annual Meeting in San Francisco, CA, USA; Oct 12-15, 2019.

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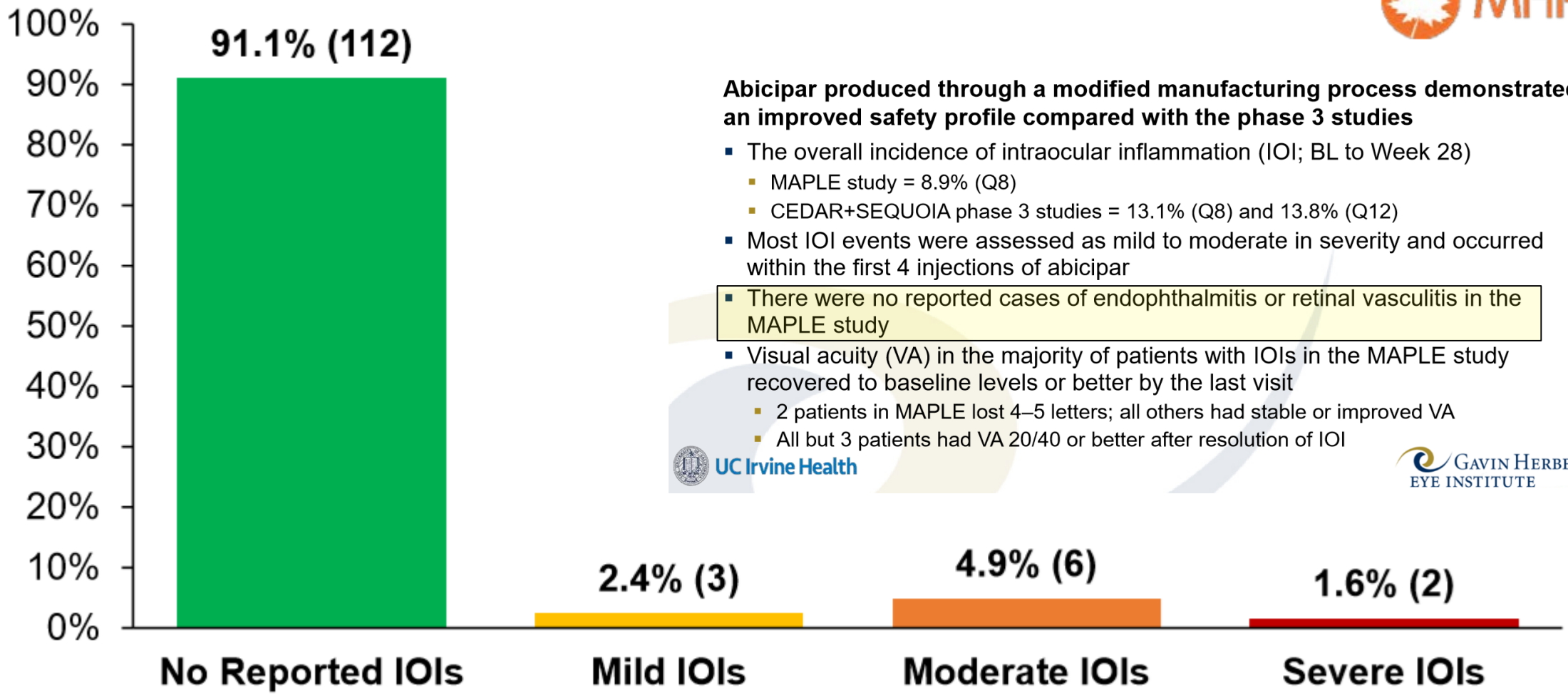
Intraocular Inflammation by Maximum Severity in MAPLE (123pts)

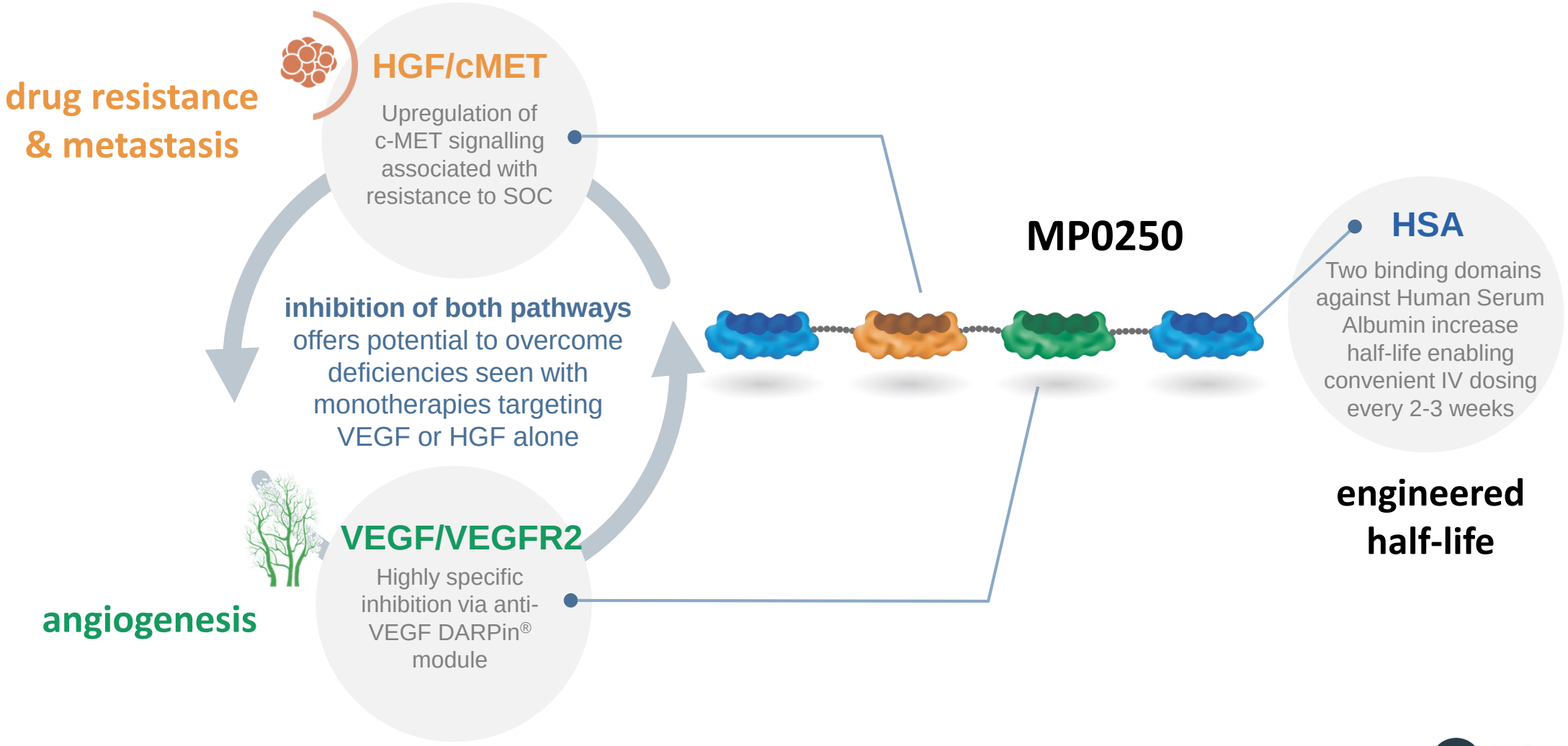


Abicipar produced through a modified manufacturing process demonstrated an improved safety profile compared with the phase 3 studies

- The overall incidence of intraocular inflammation (IOI; BL to Week 28)
  - MAPLE study = 8.9% (Q8)
  - CEDAR+SEQUOIA phase 3 studies = 13.1% (Q8) and 13.8% (Q12)
- Most IOI events were assessed as mild to moderate in severity and occurred within the first 4 injections of abicipar
- There were no reported cases of endophthalmitis or retinal vasculitis in the MAPLE study
- Visual acuity (VA) in the majority of patients with IOIs in the MAPLE study recovered to baseline levels or better by the last visit
  - 2 patients in MAPLE lost 4–5 letters; all others had stable or improved VA
  - All but 3 patients had VA 20/40 or better after resolution of IOI

Severity was reported according to investigator assessment

MP0250: Our First Multi-DARPin® Product Candidate



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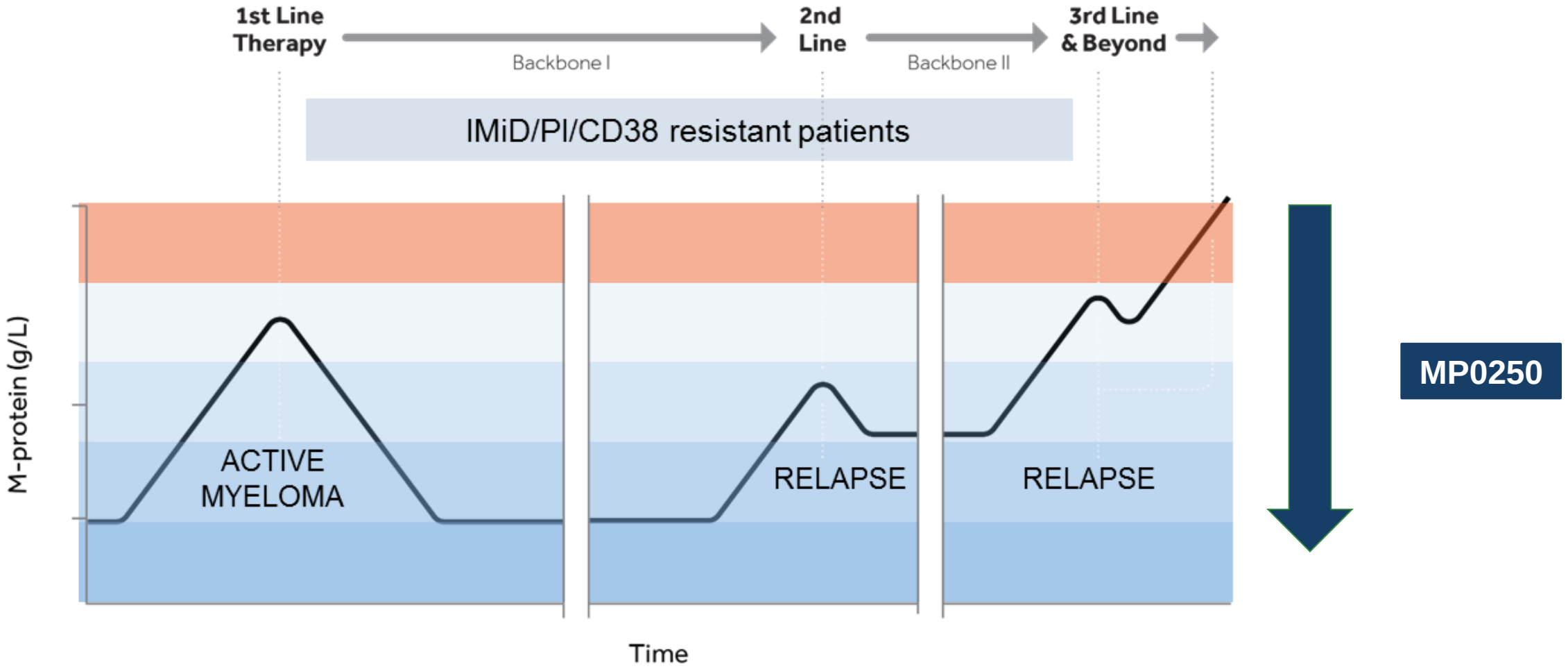
Illustrative course of disease of a MM patient*



* adapted from: Hajek, R. Strategies for the Treatment of Multiple Myeloma in 2013: Moving Toward the Cure. In “Multiple Myeloma: A Quick Reflection on the Fast Progress” (2013).

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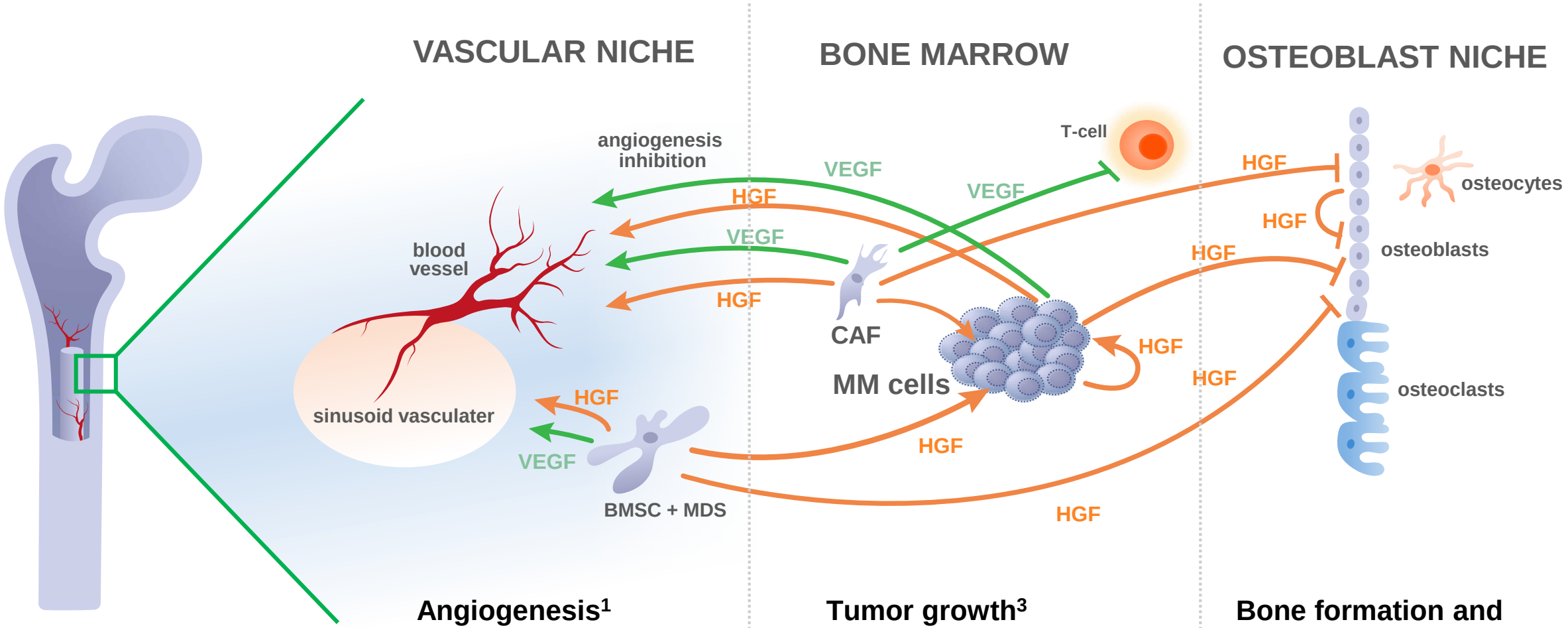
Paradigm Shift from “Chasing Clones” to Tackling Underlying Disease



1. Ria et al., 2011; Ferrucci et al., 2014
2. Xu et al., 2018; Toscani et al. 2015; Ghorial et al., 2018; Wang et al., 2019
3. Nass & Efferth, 2018; Palumbo et al., 2011; Rampa et al., 2014; Gotwals et al. 2017

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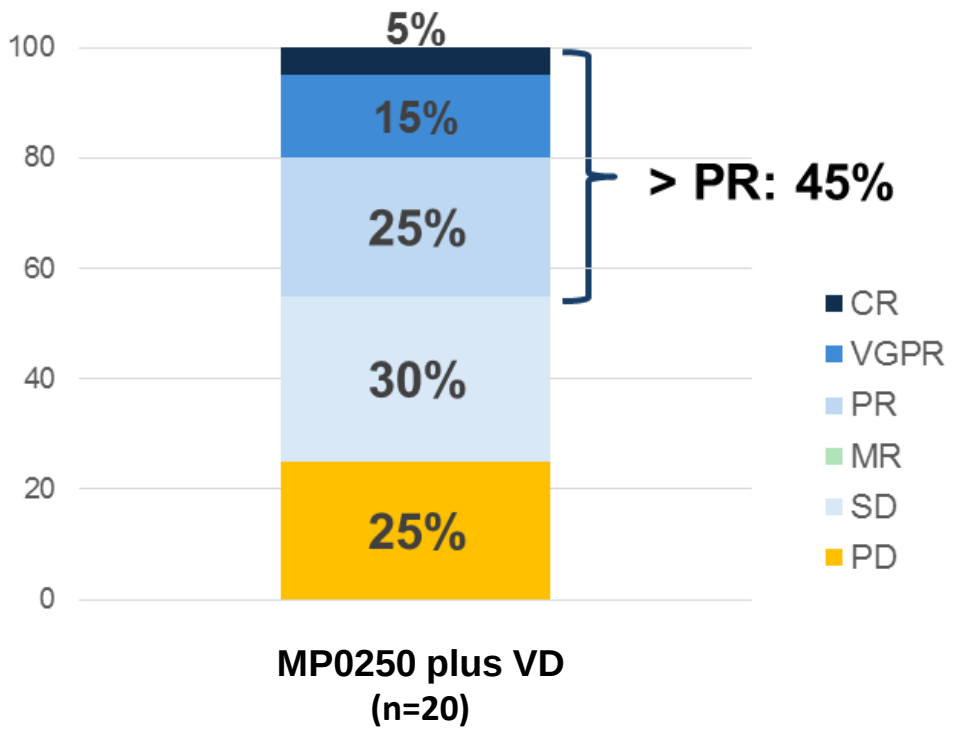
MP0250: Durable & Deep Responses in Diverse MM Phenotypes

CP-201 trial: MP0250 in combination with bor/dex in R/RMM patients



MP0250 plus VD (n=20)

MP assessment based on IMWG criteria data cut-off Sep 2019; Update presented at ASH 2019

- **Heavily pretreated patients**, representative of typical RRMM population; median of 4 prior lines (n=20)
- **Responses** in patients who had **never responded**
- 4/6 patients coming **directly from Dara** had clinical benefit (incl. 4/5 Dara-refractory patients)
- 3/7 **patients with 1q** gain (poor outcome cytogenetics) had clinical benefit, 2 responded well
- Patients with **17p deletion** progressed quickly

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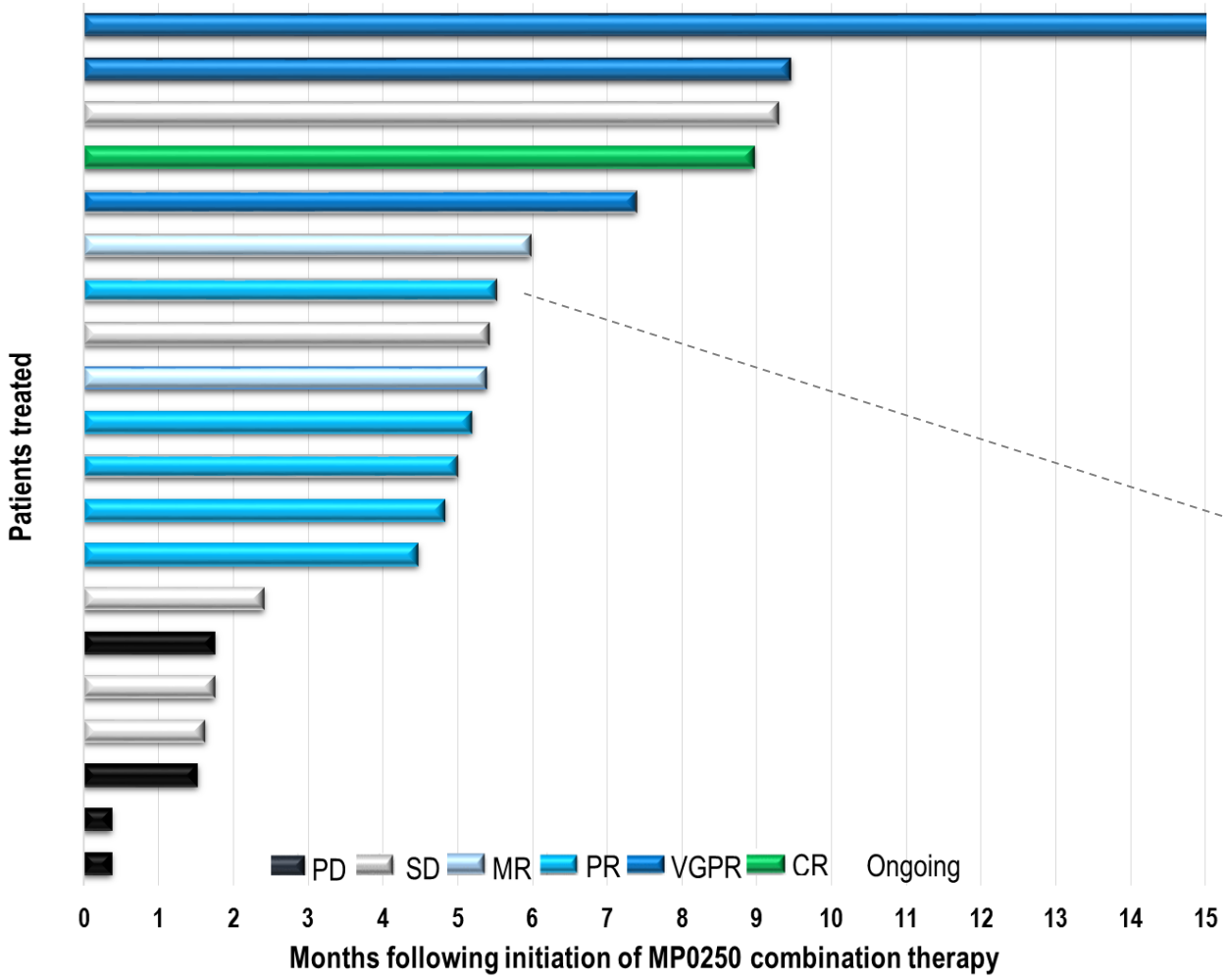
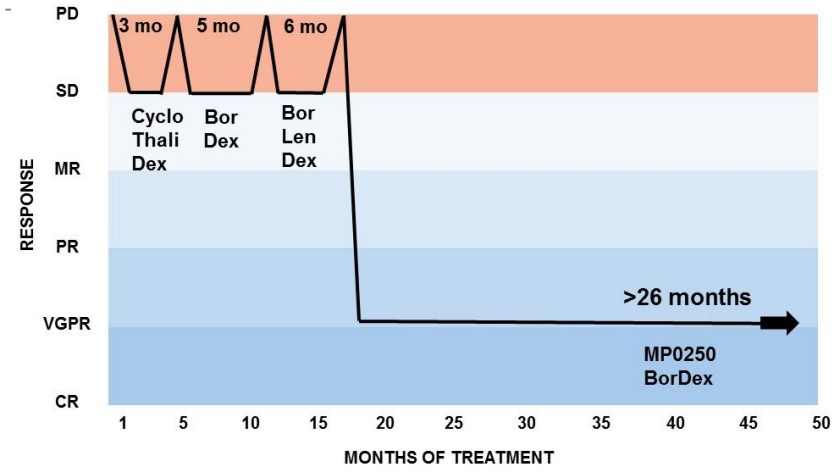
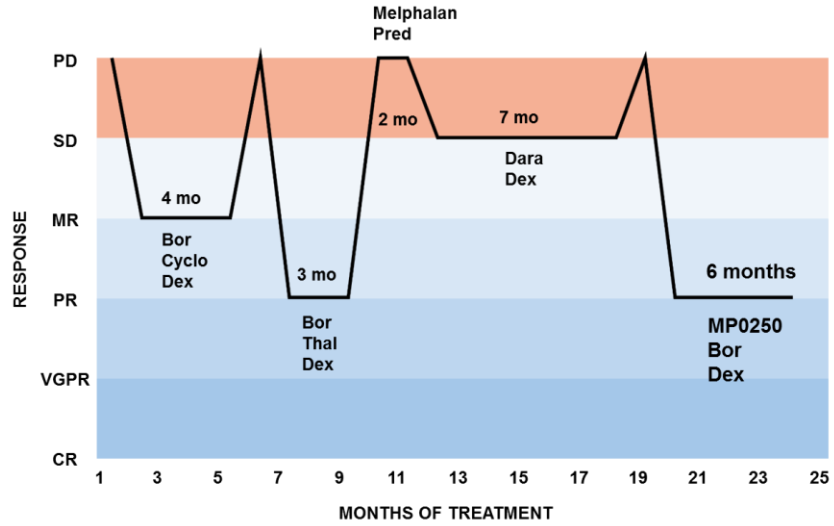
MP0250: Deep and Durable Responses







as presented at ASH 2019

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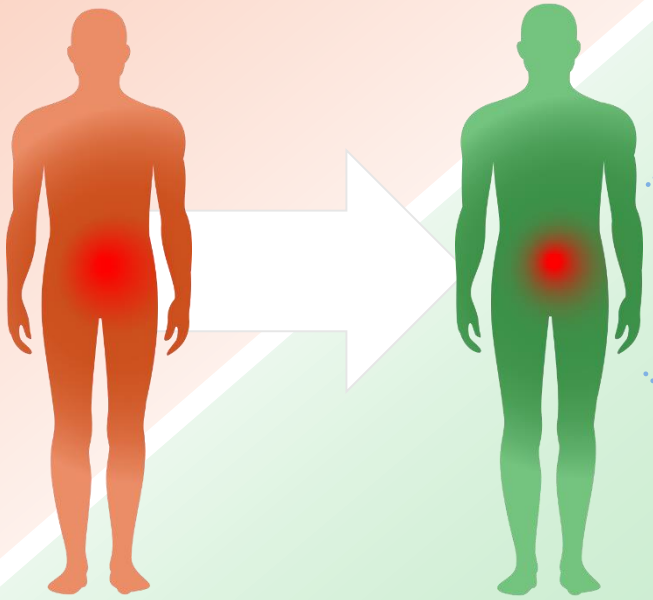
Novel Therapeutic Designs Applied – Our Approach

Classical Antibodies & SMEs

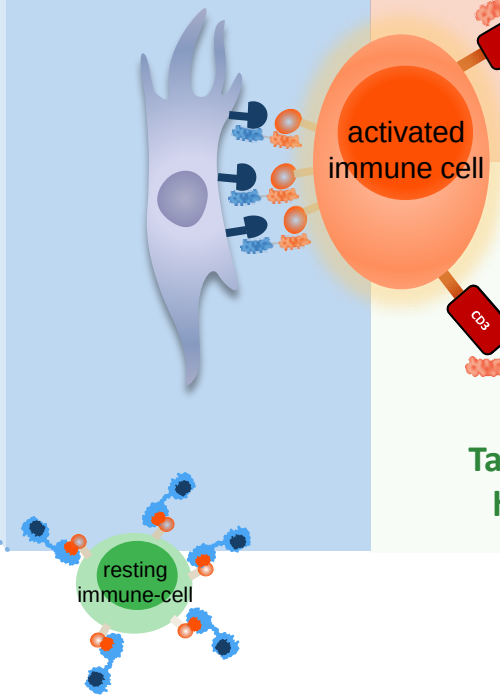
- Systemic activity
- Dose-limiting toxicities



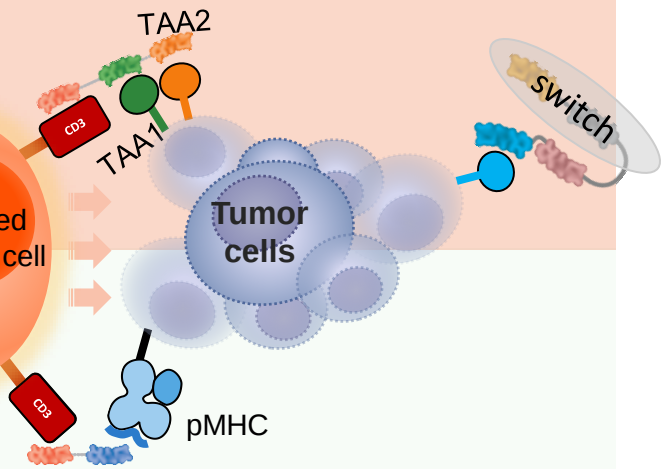
Novel Therapeutic Designs

- Local (super) activity
- Minimal systemic toxicity

Tumor-localized immune cell activation



Next-generation T-cell engagers



Targeting peptide MHC complexes, historically "inaccessible" targets

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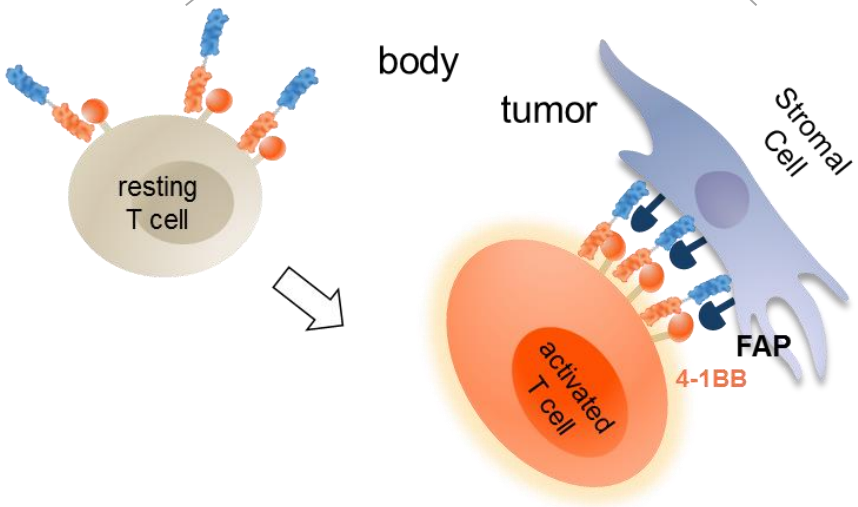
MP0310 (AMG 506; FAP x 4-1BB): Activating T cells in the Tumor

MP0310 (AMG 506)
DARPin® modules

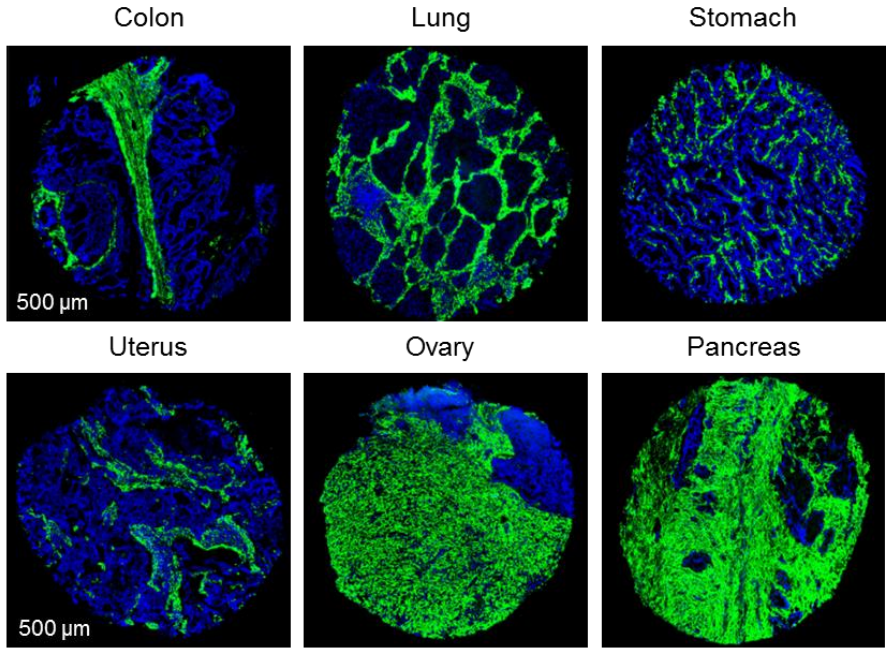
Immune modulator | Localizer | Half-life extender

4-1BB + FAP + HSA

Illustrative graphic



FAP expression in human tumor sections



Human FAP, DAPI

HSA, human serum albumin.

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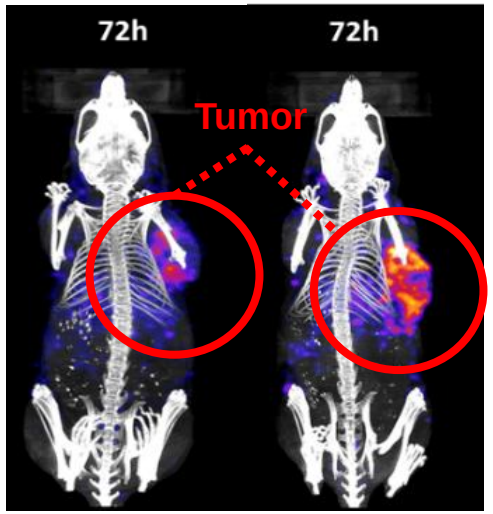
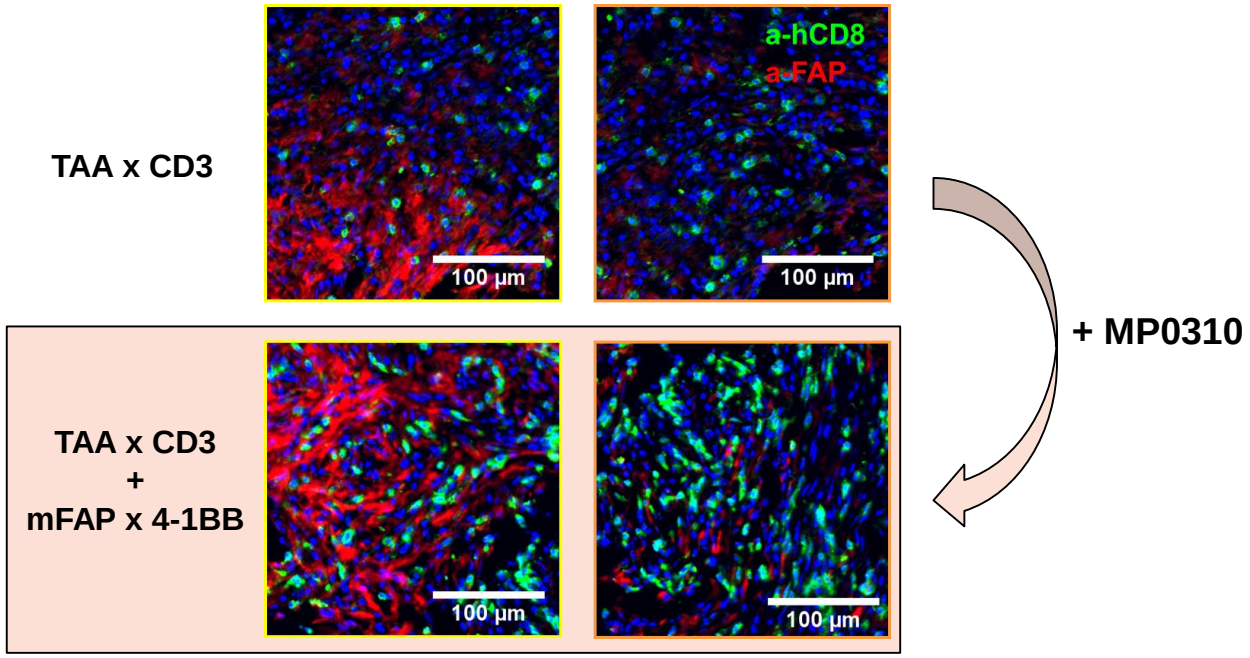
Combined Therapy with MP0310 and TAA x CD3 Bi-Specific Results in Significant Increase of Intratumoral CD8+ T Cells

FAP-Mediated Tumor Accumulation of MP0310
HT-29-T-implanted NSG mice



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

Intratumoral CD8 T cells



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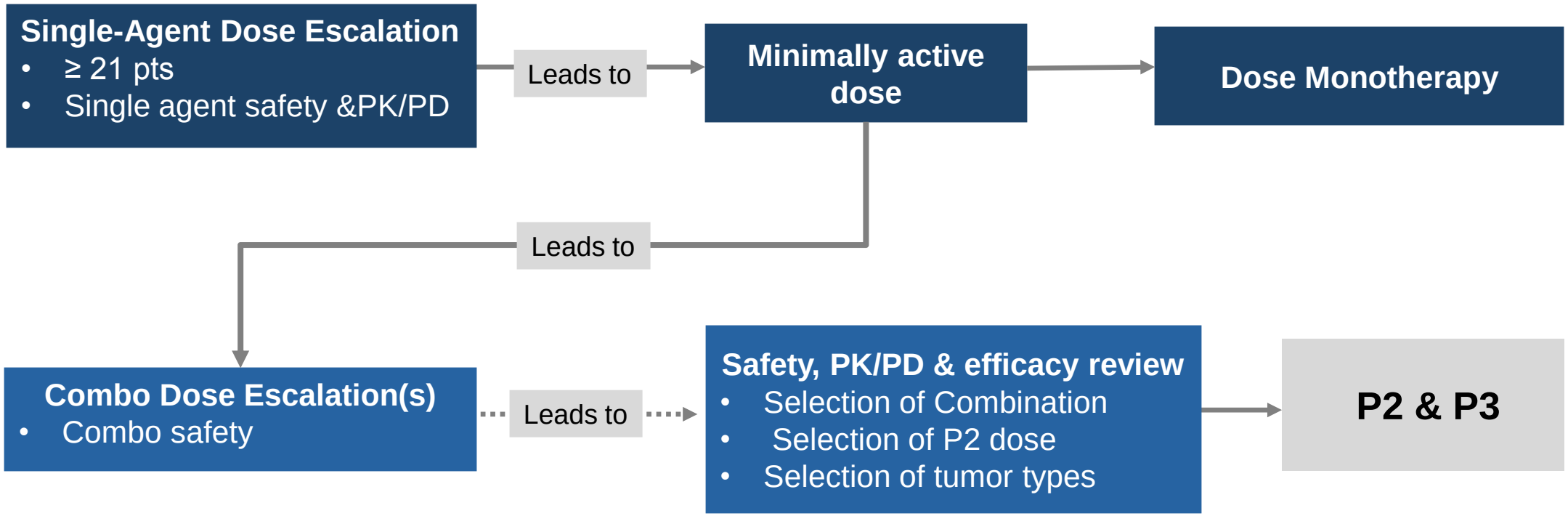
MP0310 (AMG 506) Study Design



- Dose escalation ongoing
- Expected to start MP0310 (AMG 506) combination trials in 2020

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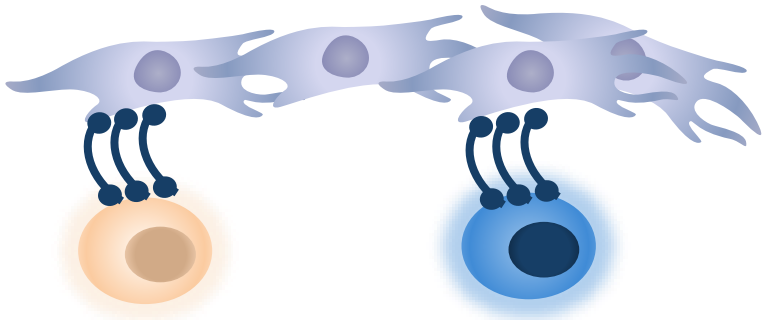
Clustering Event as Tumor-Localized Immune Modulation of the Innate and Adaptive Arms of the Immune System

FAP x 4-1BB
(MP0310 / AMG 506)

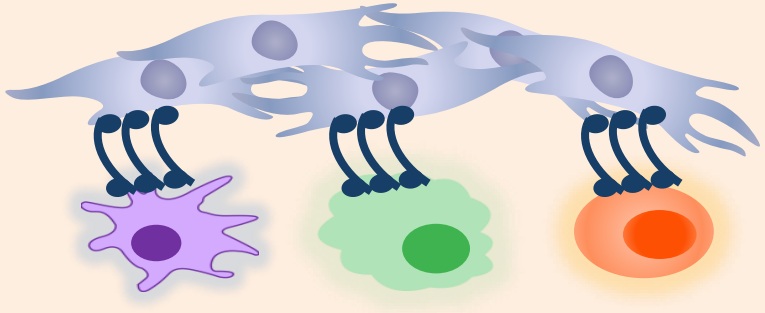
4-1BB + FAP + HSA



T Cell NK Cell

FAP x CD40
(MP0317)

CD40 + FAP + HSA



Dendritic Cell Macrophage B Cell

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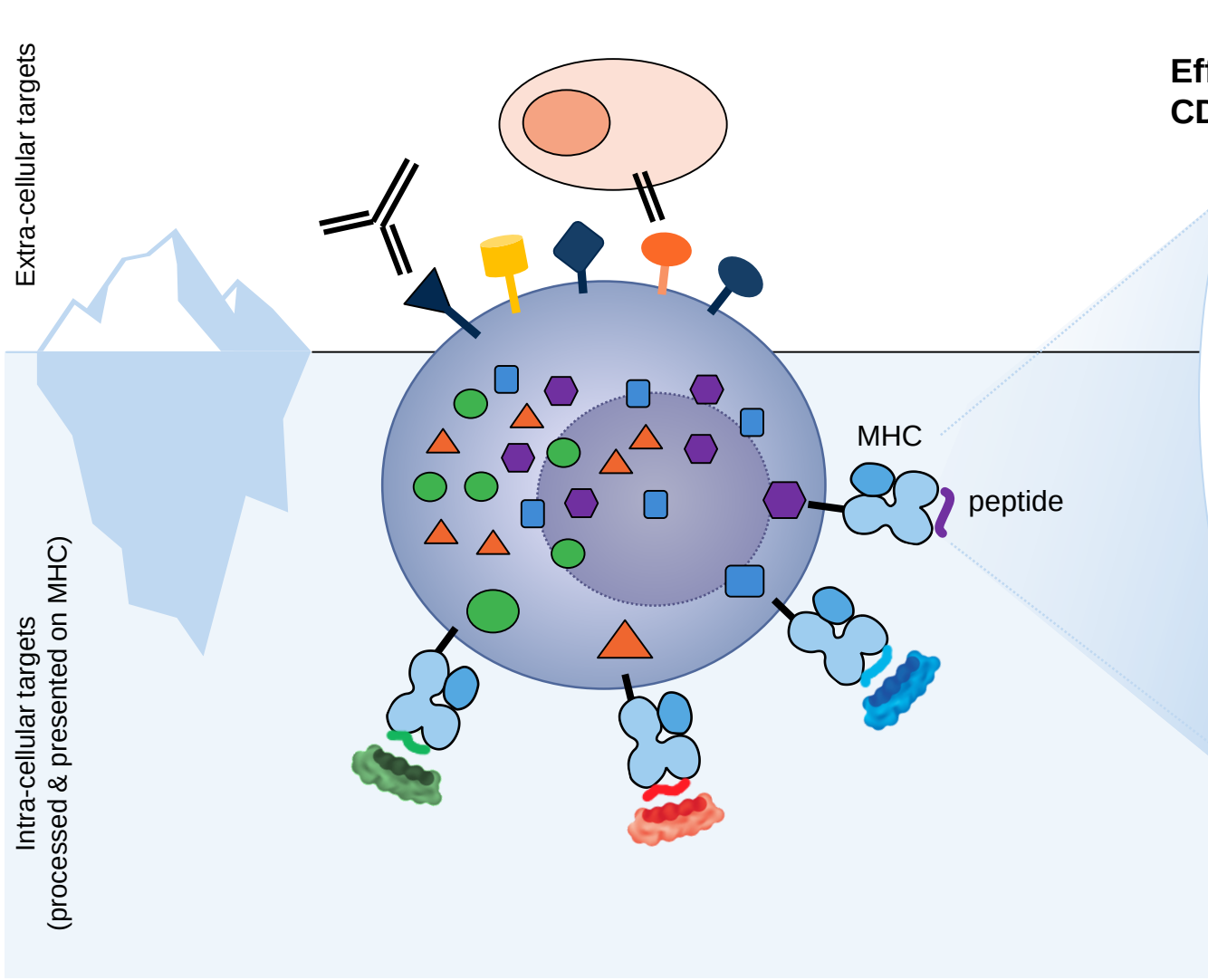
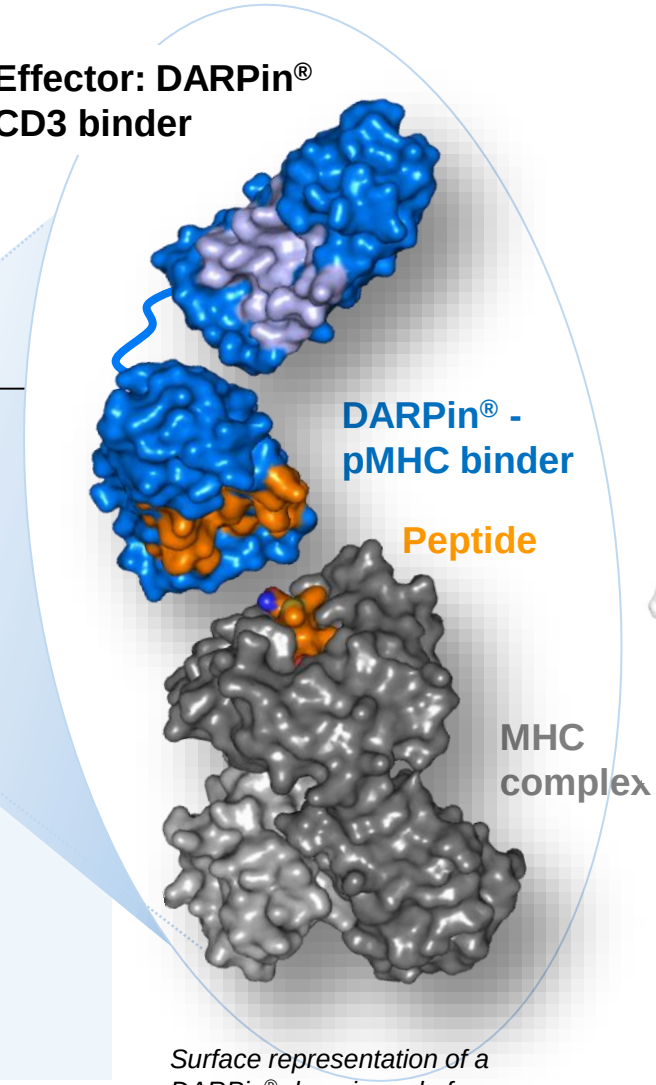
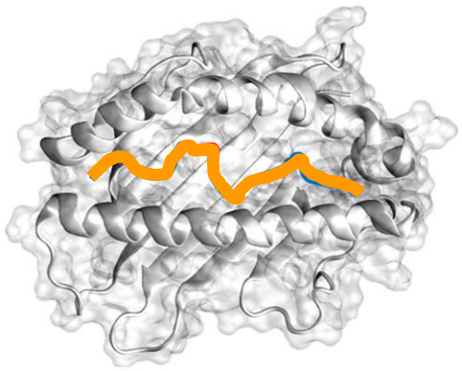
pMHC: Approach for “Inaccessible” Highly Selective Targets







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

Surface representation of a DARPin® domain and of a MHC-peptide crystal structure

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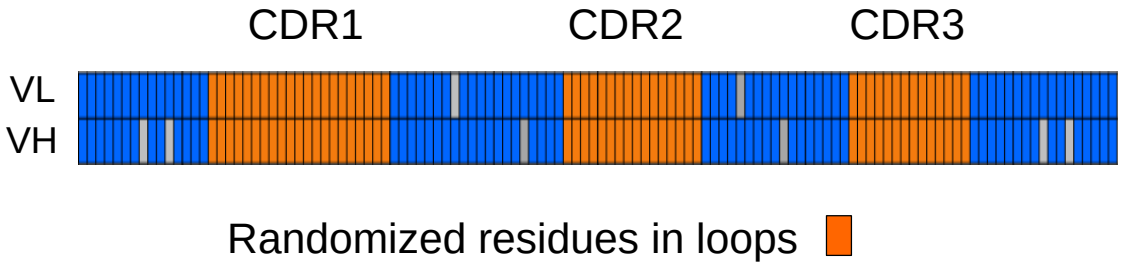
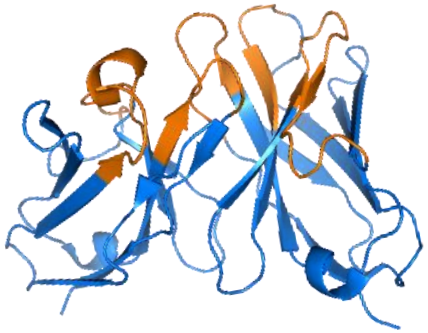
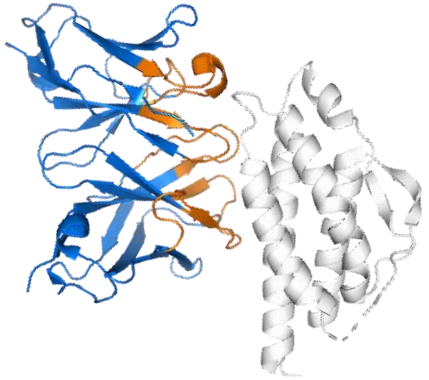
Leveraging DARPin® Features for pMHC

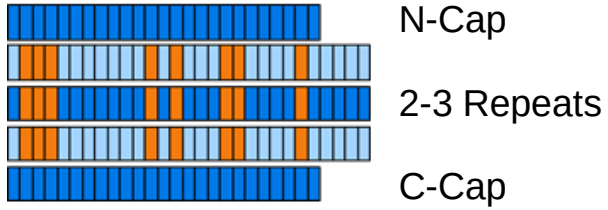
Antibody (Ig-) Domain: binding via flexible loops

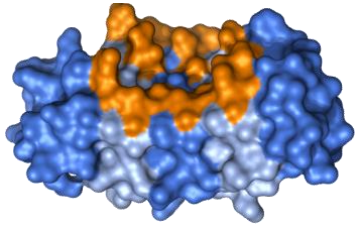


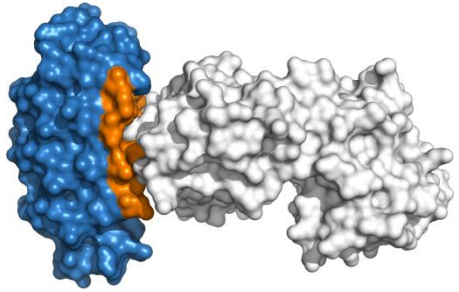




DARPin® Domain: binding via rigid surface



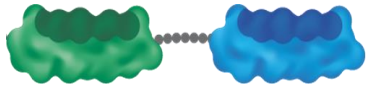




MOLECULAR partners

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

DARPin® candidate



anti-pMHC anti-CD3

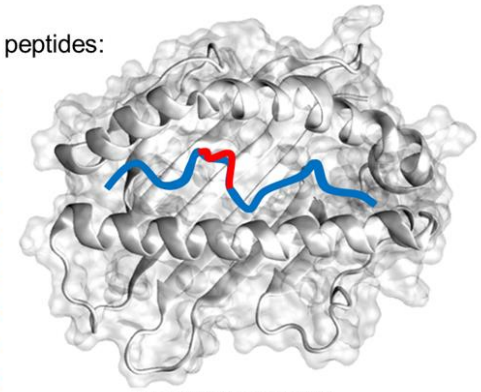
The Alanine Scanning Approach

Wild-type peptide embedded in MHC comples:

RIMYFIENA

Alanine mutated peptides:

AIMYFIENA
RAMYFIENA
RIAYFIENA
RIMAFIENA
RIMYAIENA
RIMYFAENA
RIMYFIANA
RIMYFIEAA
RIMYFIENA

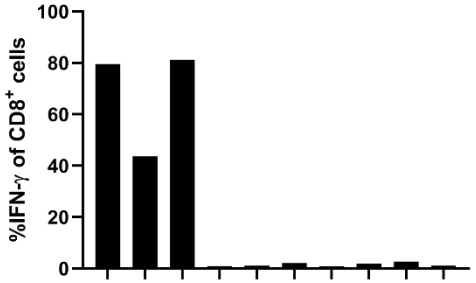


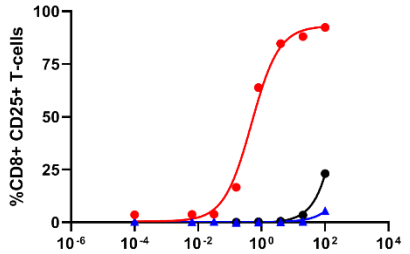
adapted from ***Knapp B et al.*** *2014, PLOS Computational Biology*

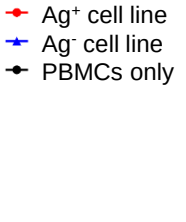
Selectivity
(binding pattern by Alanine scanning)

Activity & Selectivity
(T cell activation assay)

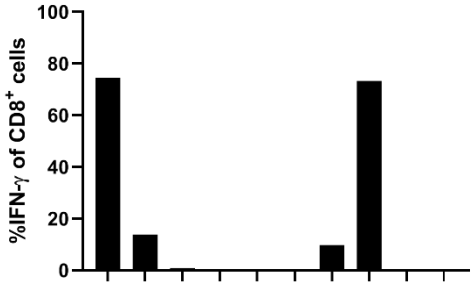
pMHC-A x CD3

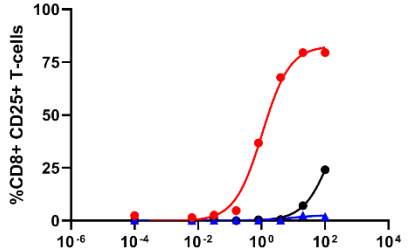


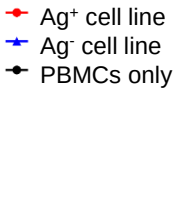




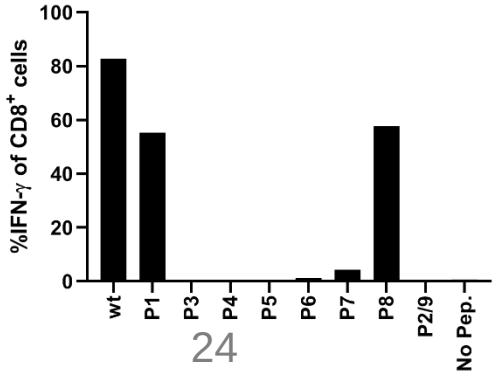
pMHC-B x CD3

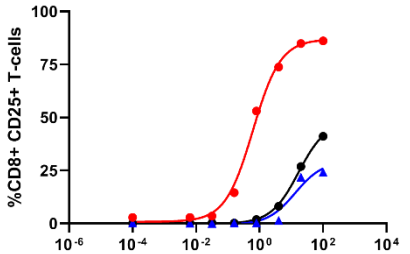


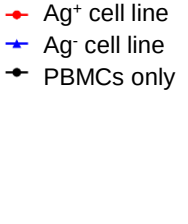




pMHC-C x CD3





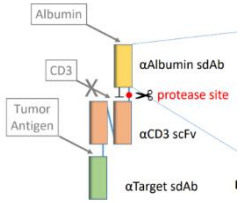


DARPin® T-cell engager [nM]

MOLECULAR partners

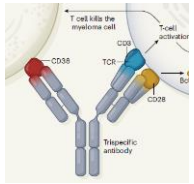
Building Next Generation of DARPin® T-Cell Engagers

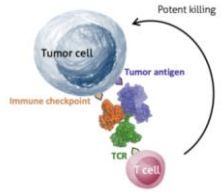
T-cell engager field is progressing to the next level to address key limitations



Tumor Activate T-Cell Engager
(e.g. Prodrug by Harpoon)

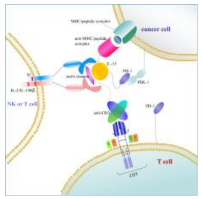
Co-stimulate T Cell Receptor
(e.g. CD28 by Sanofi)





Block Checkpoint in Synapse
(e.g. LocATE by CDR-life)

Integrate Stimulating Features
(e.g. TriTE by TIMMUNE: IL-15 fusion)



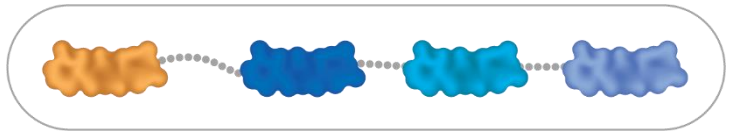
Improving Safety

Boosting Activity

Removing Brake

Sustained Activity

Multi-DARPin® T-Cell Engagers for better safety and increased efficacy



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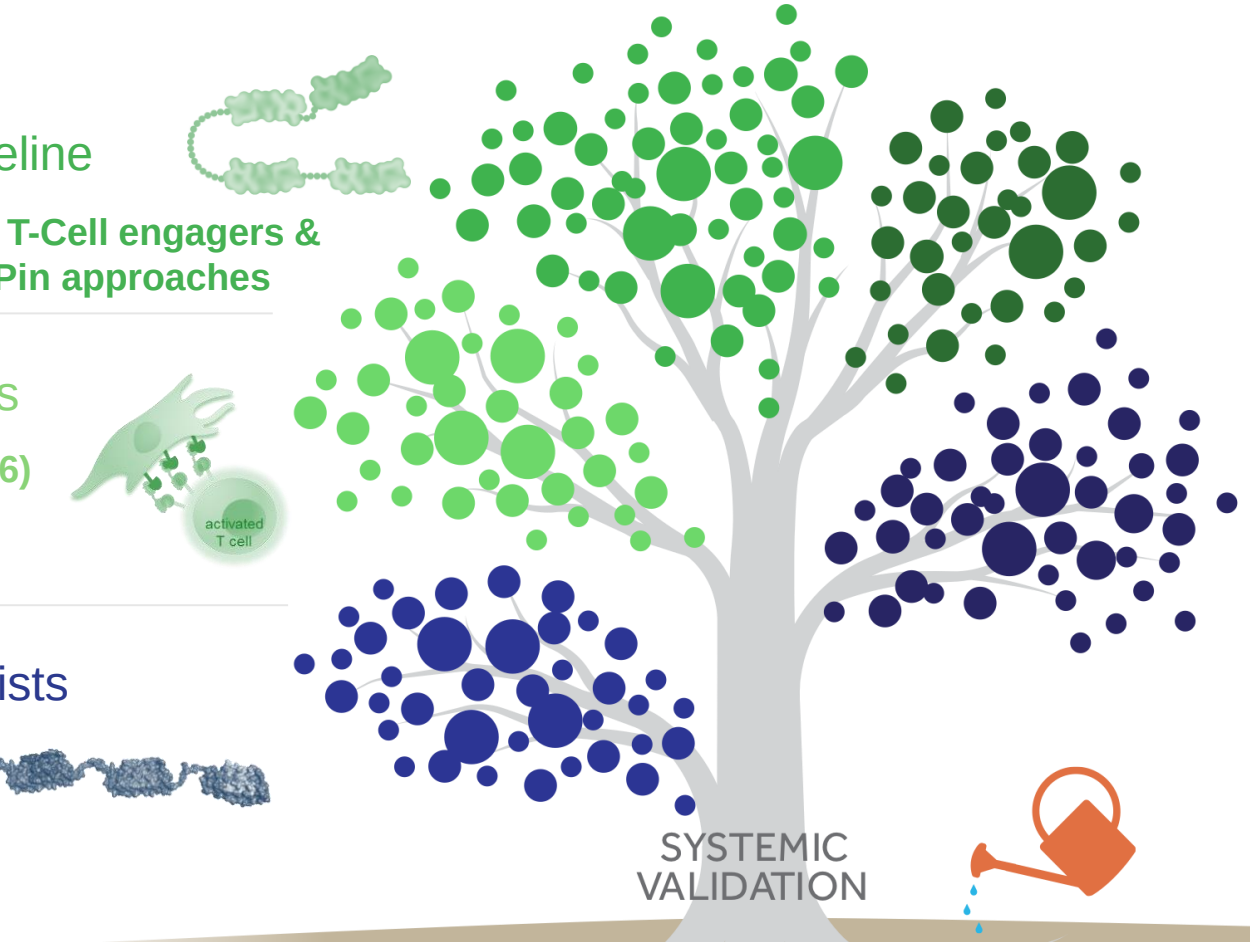
Tree of Evolution of DARPin® Approaches



Research Pipeline

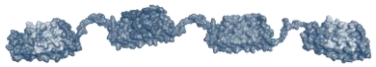
Next-Generation T-Cell engagers & other multi-DARPin approaches

Local Agonists

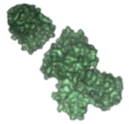
MP0310 (AMG506)
MP0317

Dual Antagonists

MP0250

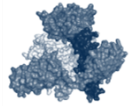


Next level of immune cell targeting



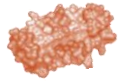
Targeting MHC-peptides

Direct Tumor Cell Killers



MP0274

Mono-Specifics



abicipar

Increasing level of Innovation & Differentiation

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Expected 2020 Catalysts

	2020
Abicipar	▪ Approval and launch in nAMD (US and EU) ▪ Initiation of Abicipar Phase 3 in DME patients
MP0250	▪ Additional P2 data from PI-combo trial ▪ Continued development of MP0250 in partnership
MP0274	▪ Establish dose and define path forward
MP0310	▪ Identify MP0310 dose in ongoing phase 1 ▪ Initiation MP0310 combination trials
Research	▪ Prepare for MP0317 IND submission ▪ Selection of 1st pMHC candidate for development ▪ Multiple updates at AACR & other international conferences

Funding into H2 2021 (excl. any future proceeds related to Abicipar and partnerships)

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Thank You!

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IR Agenda

April 29, 2020 Annual General Meeting