Molecular Partners: Building Tomorrow's Breakthroughs

Cowen and Company 39th Annual Healthcare Conference

Patrick Amstutz, CEO

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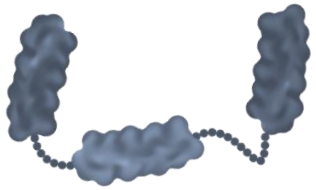
Molecular Partners:
A Swiss Biotech developing innovative protein drugs



DARPin® ENGINE

DARPin® platform as source of mono/multi-specific protein drugs
Rapid cycle of innovation to test novel therapeutic design
Validation in >1.8k patients treated to date (mainly Abicipar)

DARPin® PIPELINE

Abicipar: Phase 3 in wet AMD
MP0250: Phase 2 in MM and NSCLC
MP0274: Phase 1 in Her2 positive cancer indications
MP0310: First-in-human in multiple cancer indications in 2019

TEAM WORK

130 co-workers – purpose driven, evolutionary organization
Partnership with Allergan on Abicipar, ophthalmology assets
New partnership with Amgen on MP0310

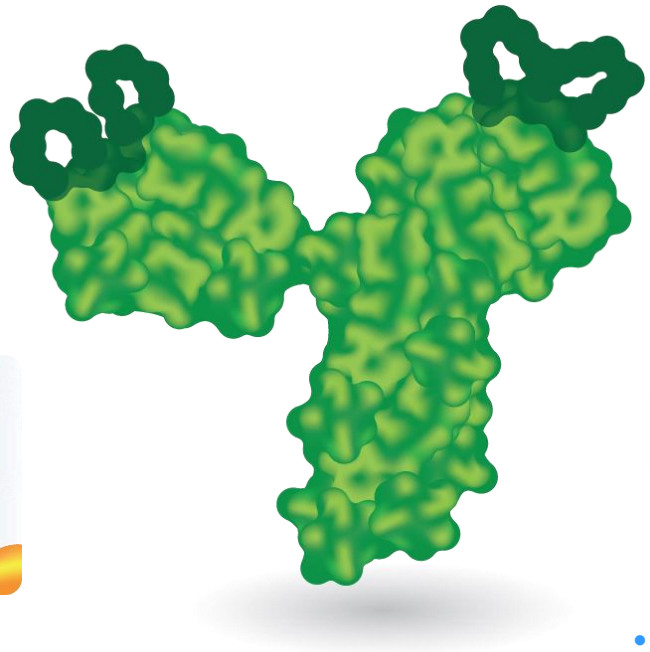
CAPITAL

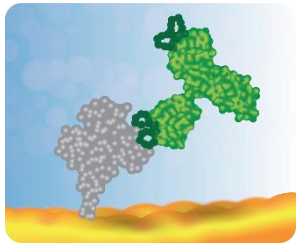
Multiple near-term catalysts with significant value creation potential
Well financed: on-track to steady income with Abicipar launch (2020e)

DARPin® Proteins: Nature's Choice for Multi-Specific Binding

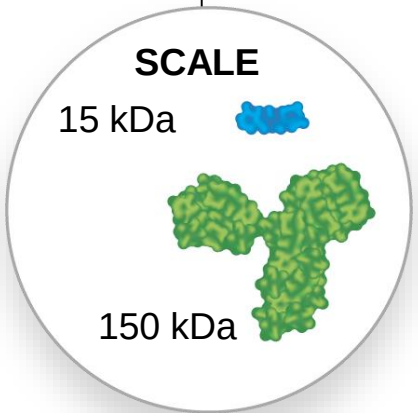
MONOCLONAL ANTIBODIES

Binding regions / specificity





- Large size: 150 kDa
- Complex architecture: 4 proteins with 12 domains
- Target binding via flexible surface loops (CDRs)

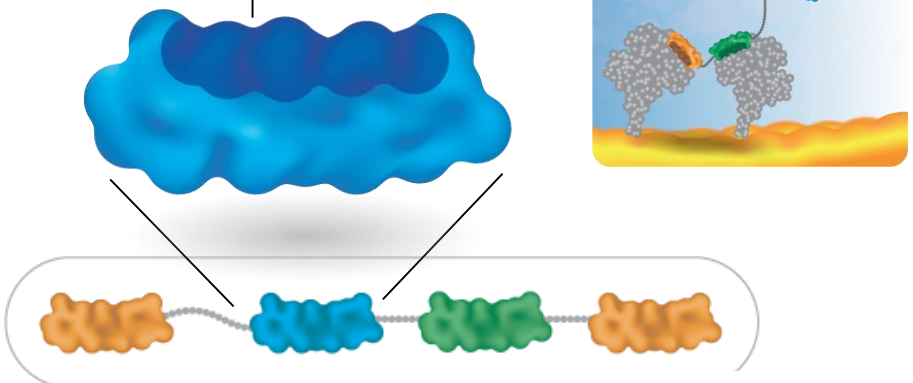


- High affinity and specificity
- Low immunogenicity potential
- Tunable half life

DARPin® Protein(s)

DARPin® module

Binding region / specificity



Multi-DARPin® product candidate

- Small size: 15 kDa (1/10 of monoclonal antibody)
- Simple architecture: 1 protein with 1 domain
- Target binding via rigid surface structure

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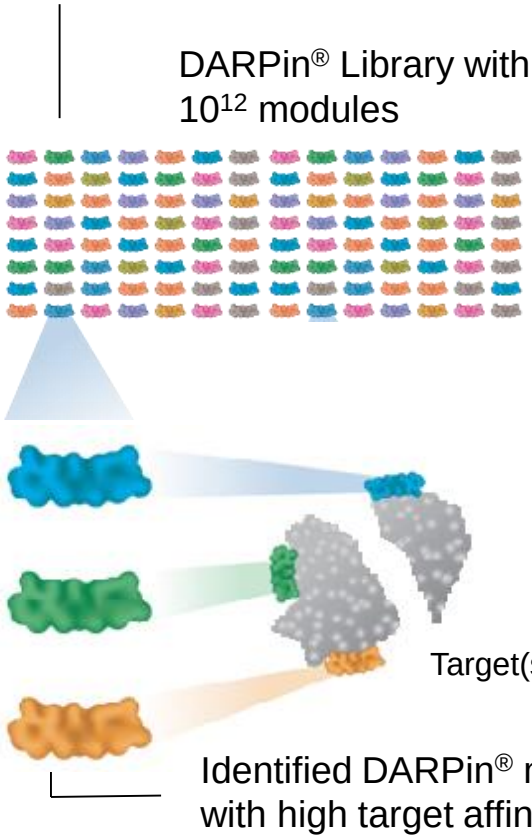
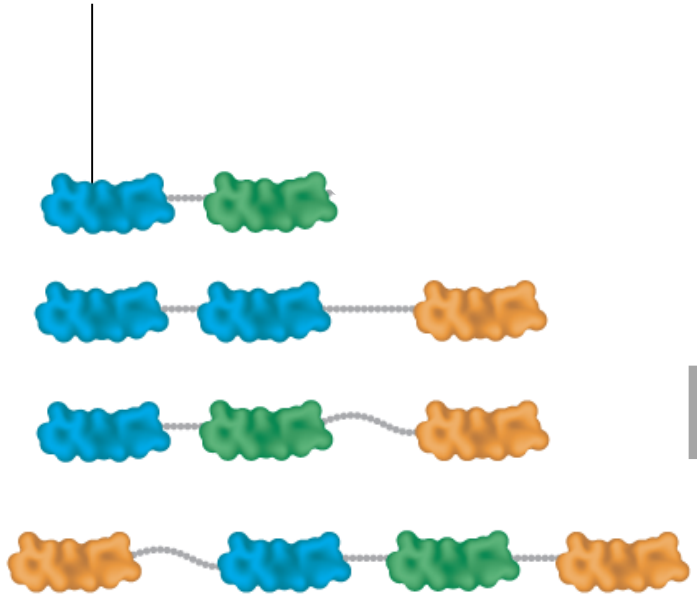
DARPin® Engine: Selecting Novel Therapeutic Designs to Match Desired Function

DARPin® module selection

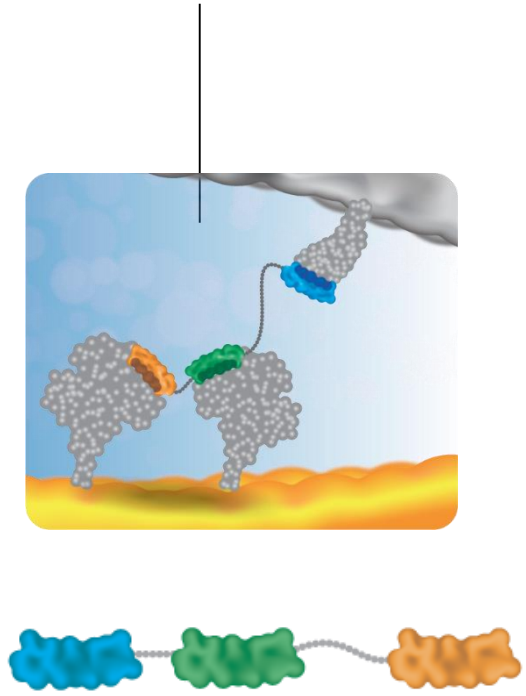


Opening novel Therapeutic Design Space



Multi-DARPin® product candidates

Selecting the «optimal» Therapeutic Design



Therapeutic Design matches its function

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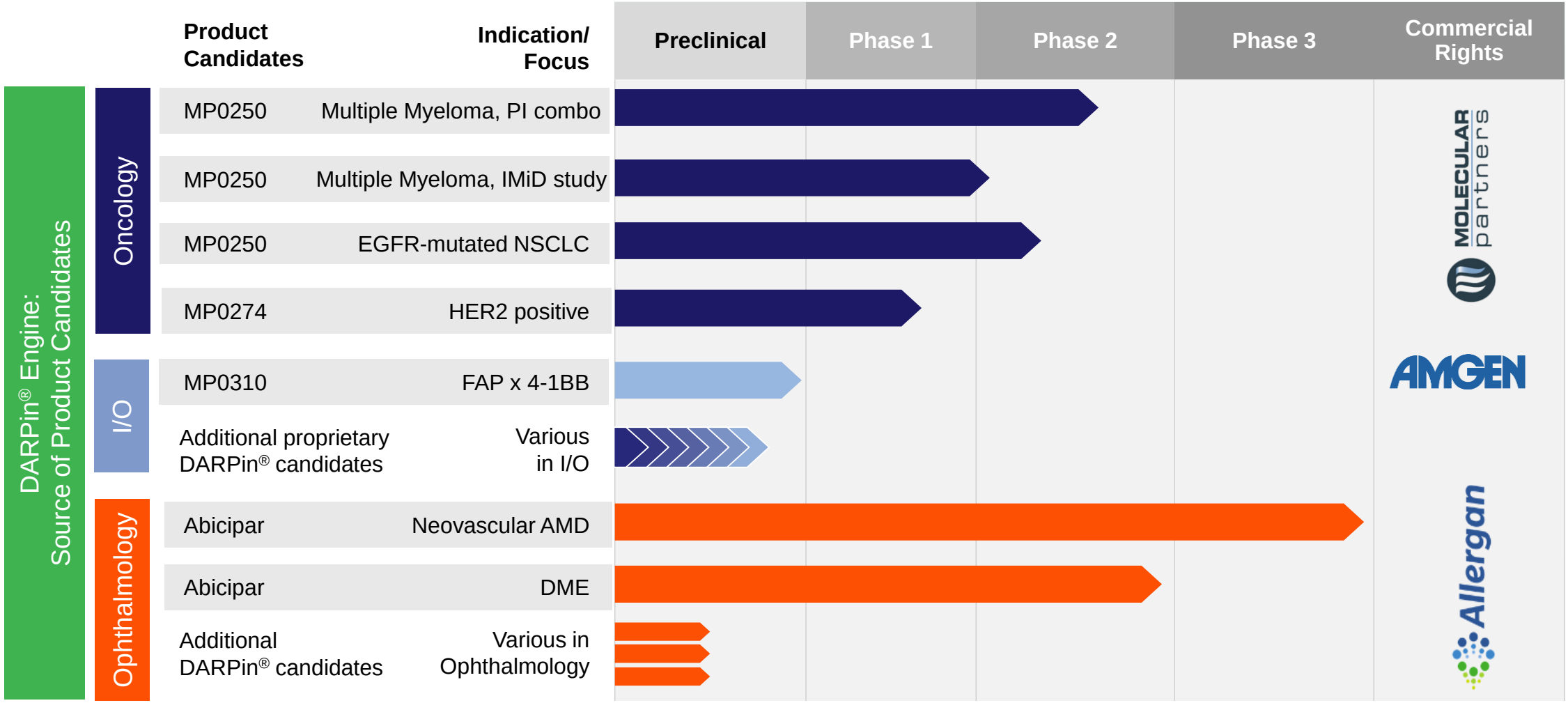
A Balanced and Robust Portfolio



AMD: age-related macular degeneration; DME: diabetic macular edema; NSCLC: non-small cell lung cancer

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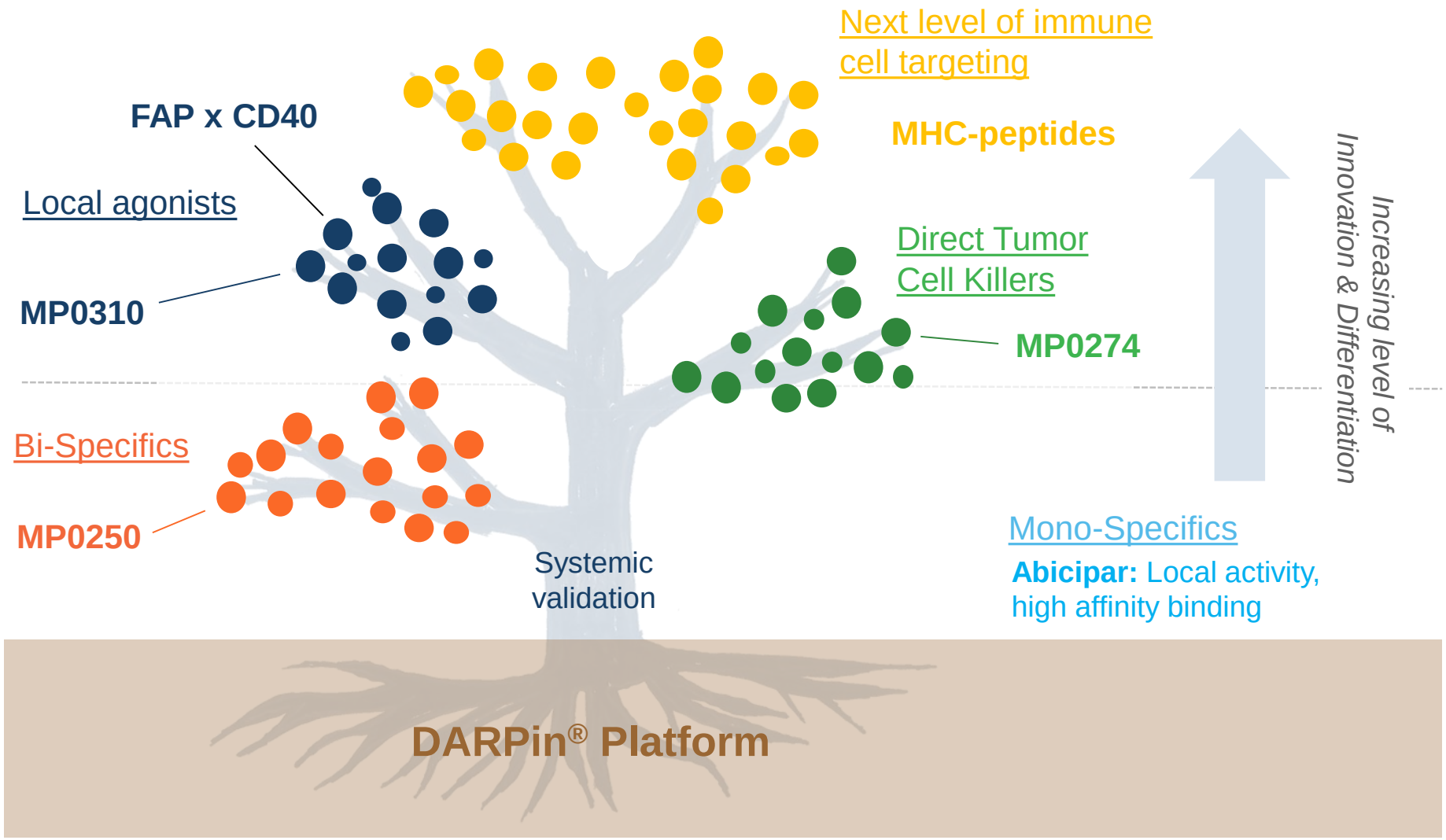
Tree of Evolution of DARPin® Approaches



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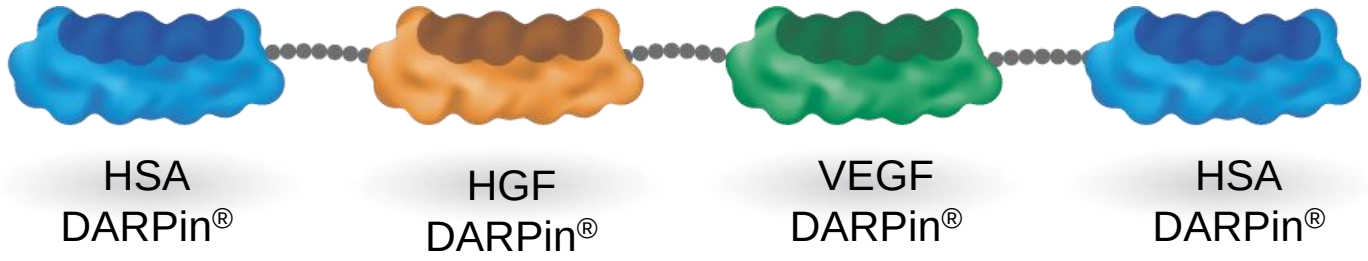
Oncology Deep Dive: MP0250, MP0310, Research

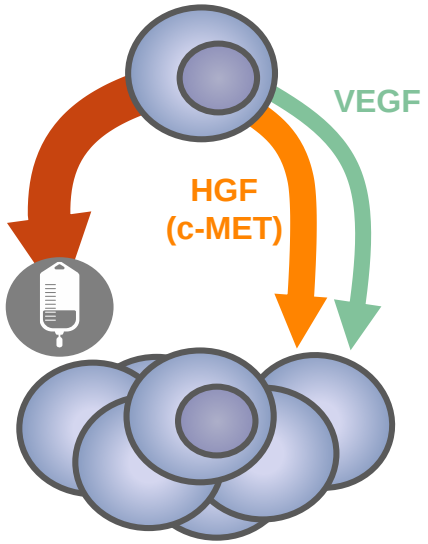
MP0250: Our First Multi-DARPin® Product Candidate



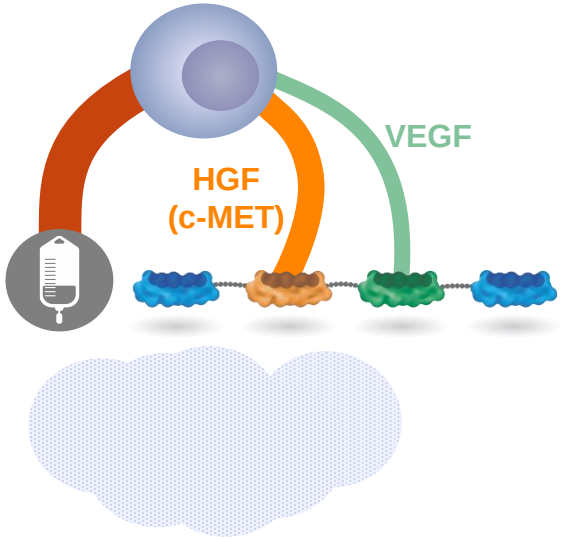
- Medical Need: Some tumors develop adaptive resistance to SOC by up-regulating VEGF and HGF
- MoA: MP0250 inhibits both VEGF and HGF simultaneously

  Blocking these adaptive escape pathways may restore clinical sensitivity to SOC
- Status: Phase 2 in MM and NSCLC ongoing
  - ✓ Phase 1: safe up to 8 mg/kg/3weeks

Upregulation of escape pathways after SOC



Medical need: Agents that block escape pathways to SOC



SOC, standard of care; HSA, human serum albumin.

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MP0250: Potential to Treat Several Indications MM and EGFR-mut NSCLC selected initially

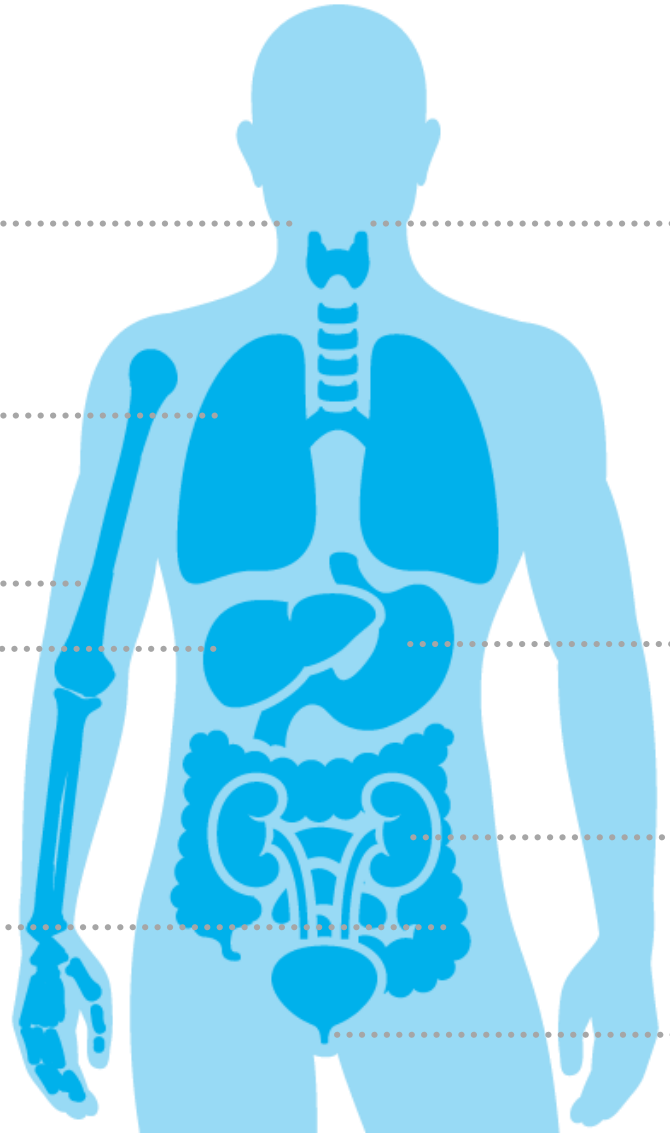
Head and neck squamous cell

EGFR-mutated NSCLC

Multiple myeloma

Hepatocellular carcinoma

Colorectal cancer



Nasopharyngeal

Gastric cancer

Renal cancer

Anal cancer

INCIDENCE:[1]

- <50,000
- 50,000 – 100,000
- >100,000

1) Including US/5EU/JP. Datamonitor.

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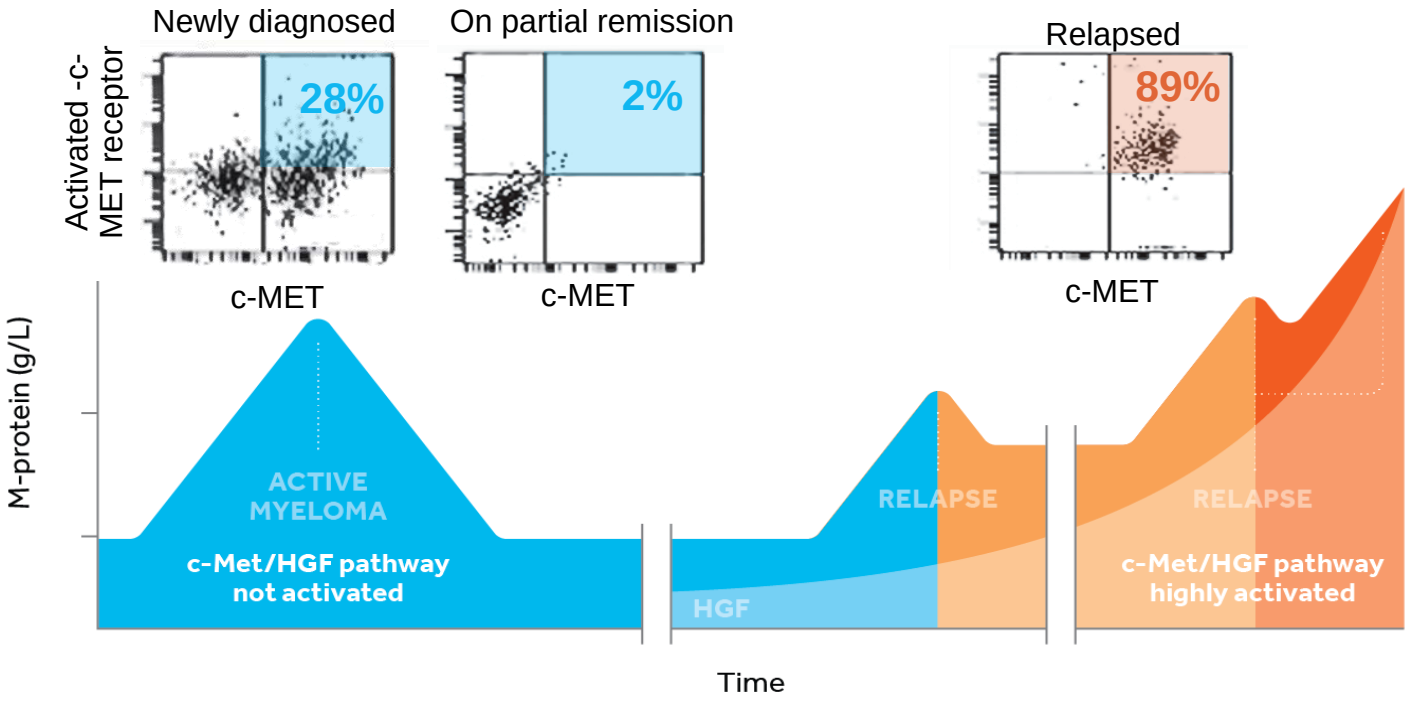
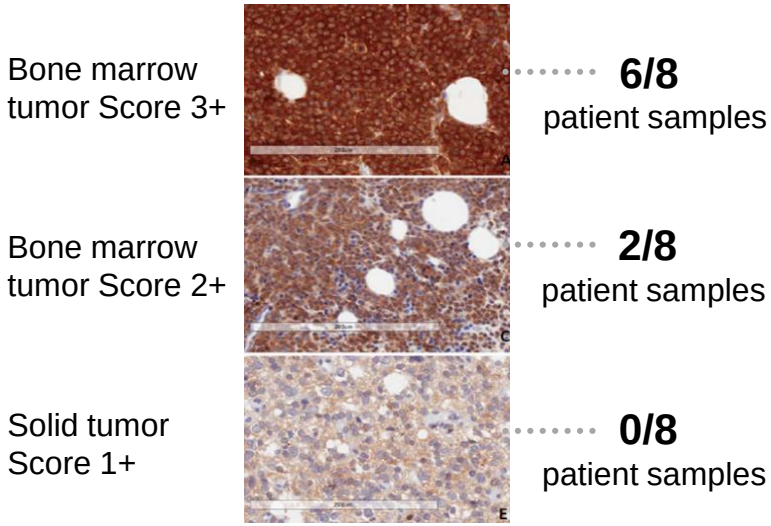
Unmet Medical Need in Multiple Myeloma (MM)

Dynamic activation of the HGF pathway during disease progression[1].



HGF is highly overexpressed in bone marrow biopsies of multiple myeloma patients



MM remains incurable for most patients as cells acquire adaptive resistance to currently available therapies

- Relapse inevitable
- Time to relapse shortens with every treatment cycle
- Quality of response tends to diminish

No current drug in MM is addressing adaptive VEGF and HGF resistance

1. Moschetta M, et al. Clin Cancer Res 2013;19:4371-82

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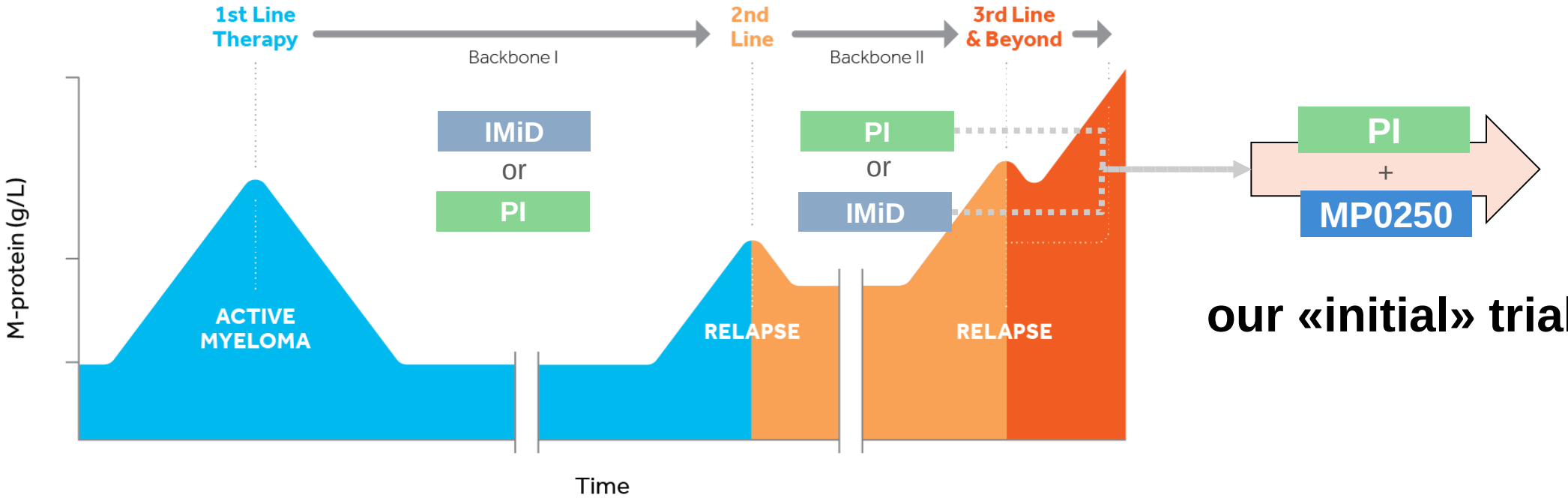
Testing how MP0250 can revert Adaptive Resistance in MM

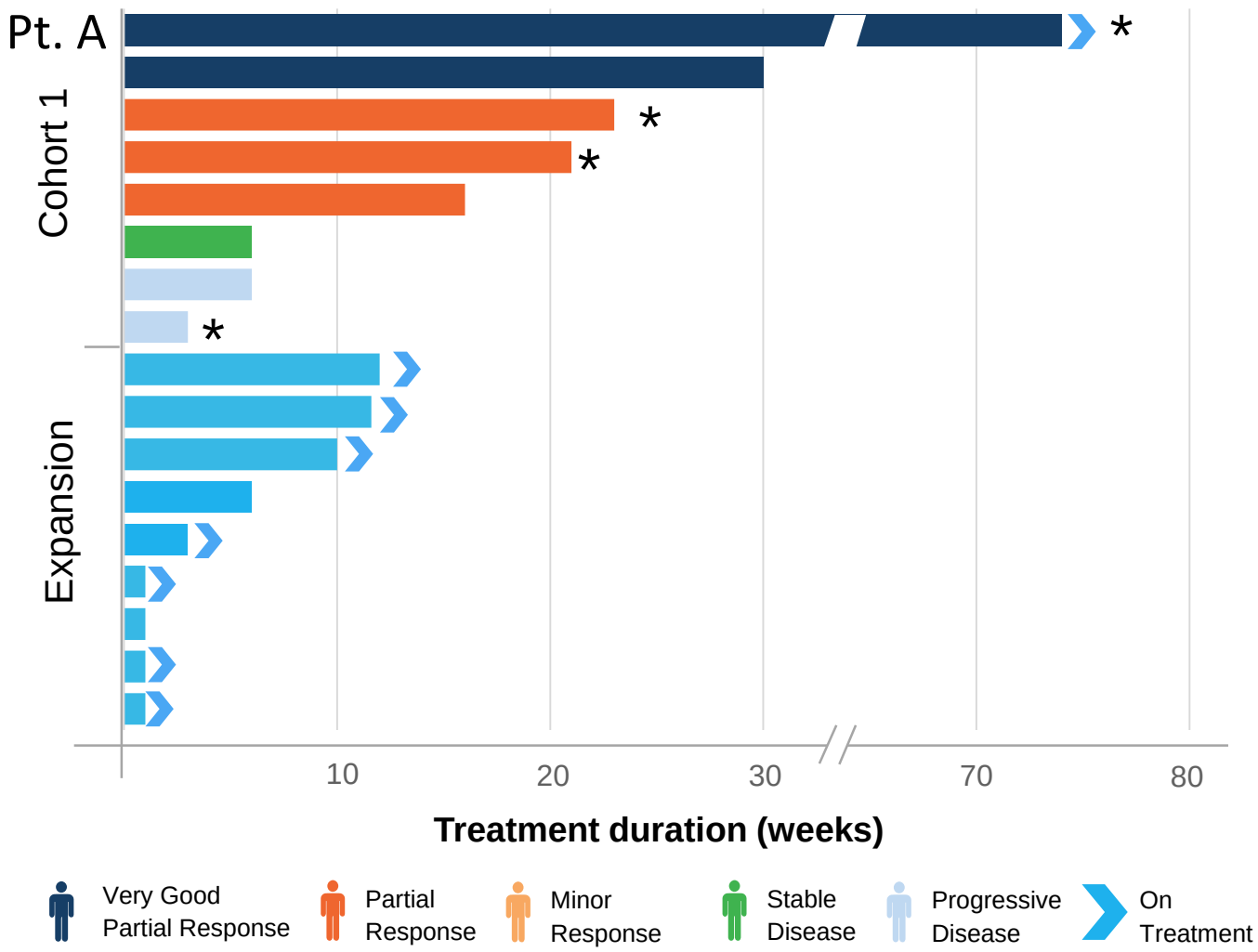
Illustrative course of disease of a MM patient[1]



our «initial» trial

1) 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).

MP0250 Phase 2 Study in MM: Promising Signs of Efficacy



- Patient population: Patients with MM with ≥ 2 prior lines of treatment, including IMiD and PI, and no response or early relapse
- Treatment regimen: Velcade®/Dexamethasone plus MP0250
- 5 of 8 patients with objective responses (cohort 1)
- 3 of 4 patients coming directly from a PI-based regimen responded in cohort 1 (*)
- Durable remission observed in heavily pretreated patients
- MP0250 (8mg/kg) combined with Velcade® has shown tolerable safety profile
- Study ongoing with additional patients (■)

Data cut-off: 31 January 2019. dose level: 8mg/kg/3weeks.

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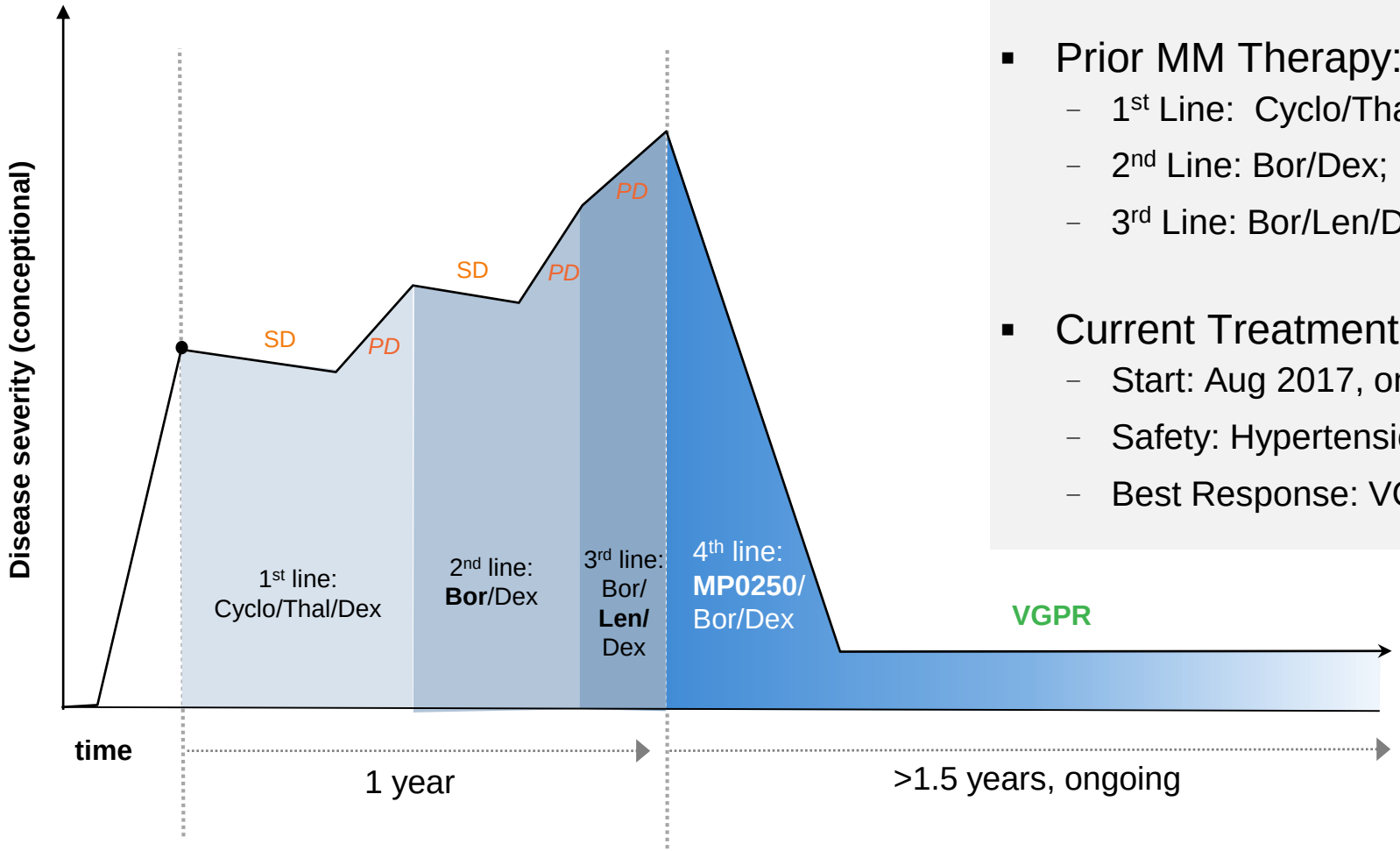
Case Study: Patient A (4th line, coming from PI)



- Female 63y, MM IgG kappa diagnosed in May 2016
- Prior MM Therapy:
  - 1st Line: Cyclo/Thal/Dex; Best Response: SD
  - 2nd Line: Bor/Dex; Best Response: SD
  - 3rd Line: Bor/Len/Dex; Best Response: PD
- Current Treatment: 4th line - MP0250
  - Start: Aug 2017, ongoing
  - Safety: Hypertension, Polyneuropathy
  - Best Response: VGPR, ongoing

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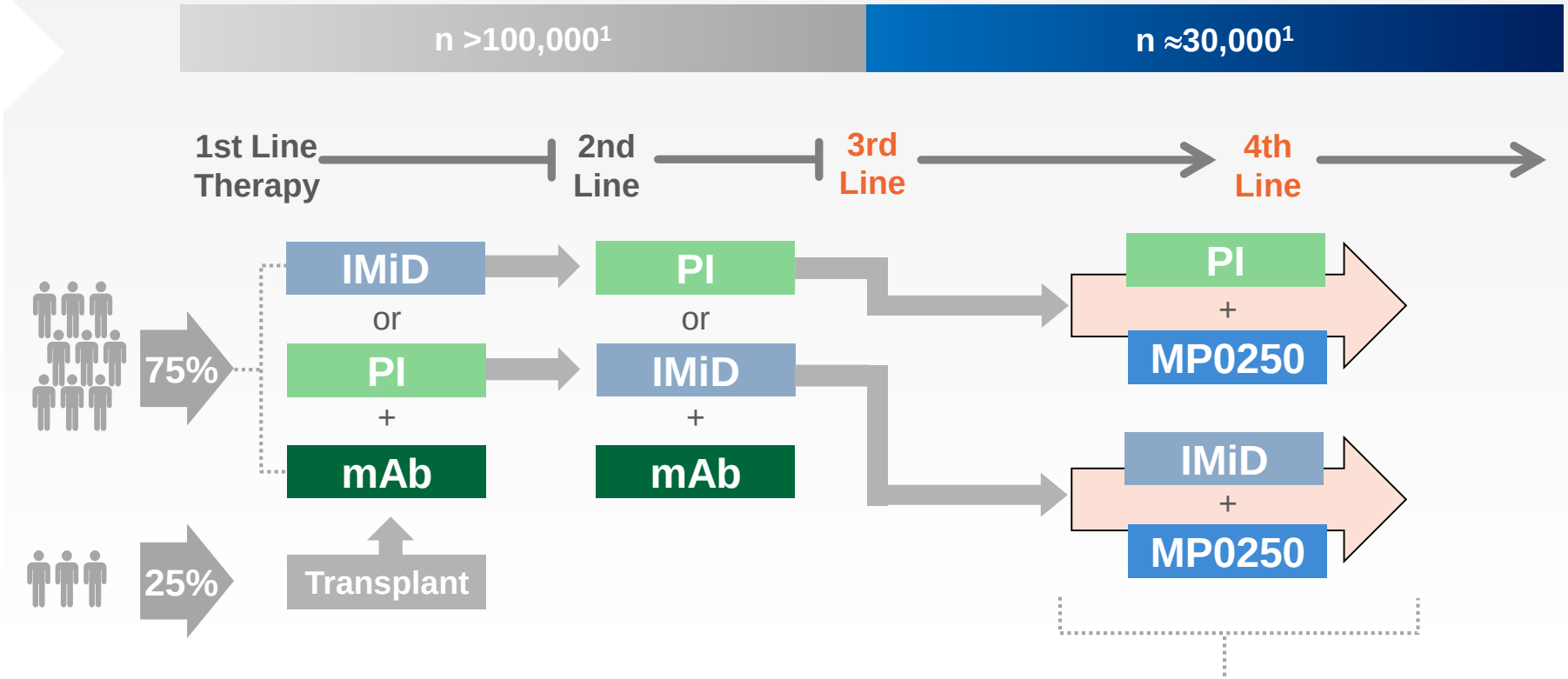
MP0250 Positioning in MM and Our «planned» Trials

Multiple myeloma:
2nd most common blood cancer

Global market value of MM treatment:
$13 billion

expected to exceed
$20 billion by 2022

(CAGR: 13%)[1]



MP0250 has the potential to become backbone for later lines of treatment

our «planned» trials

1. Including US/5EU/JP. Datamonitor, August 2018.

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DARPin® Strategy in Oncology

Antigen-presenting cells, T cells

PRIME & ACTIVATE

Localized Immune Modulators

T cells

ENGAGE

Cytotoxic Immune Cells

Tumor cells

DIRECT KILL

Direct Tumor Cell Killing

Tumor / Stromal cell interactions

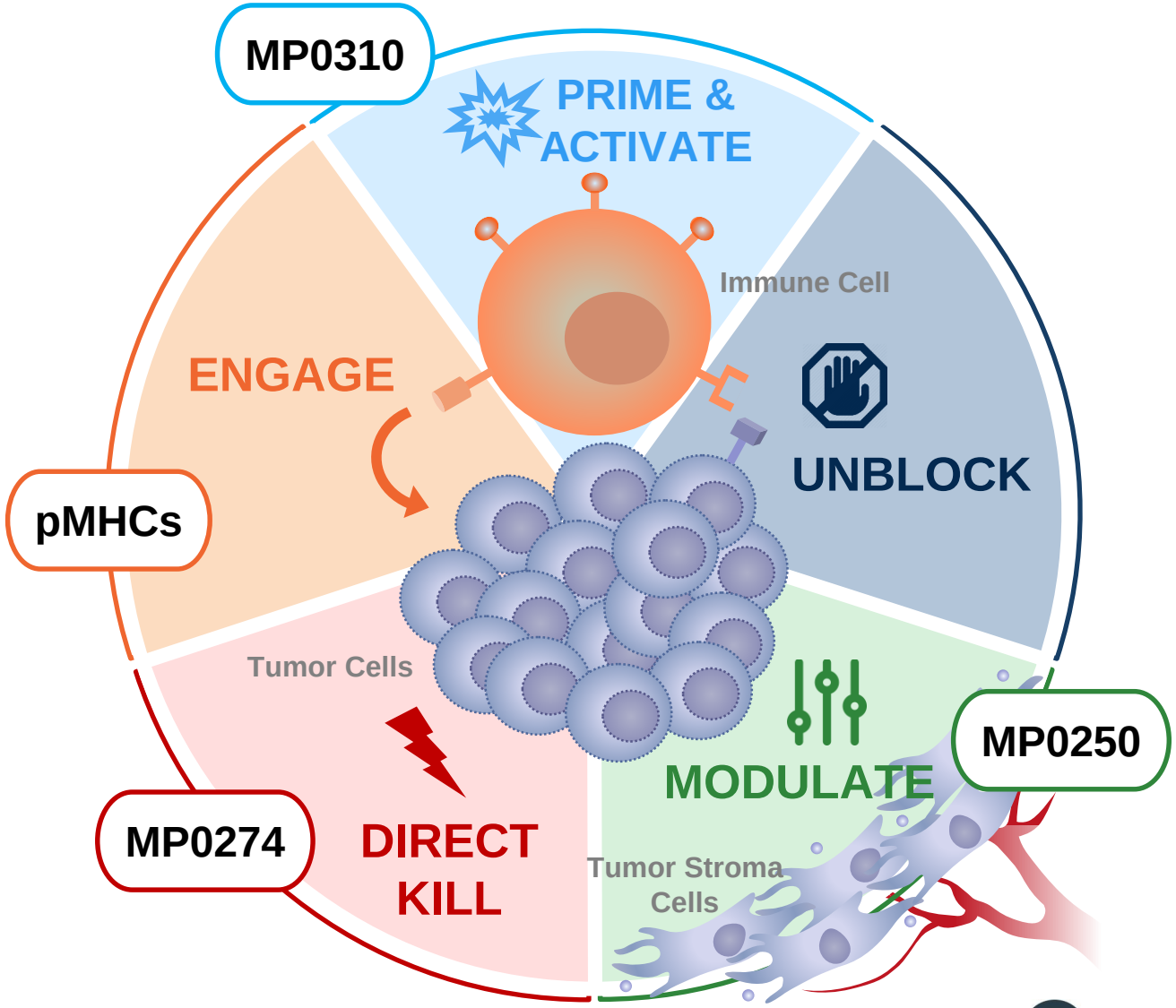
MODULATE

Tumor Microenvironment Modulators

T cells

UNBLOCK

Checkpoint Approaches



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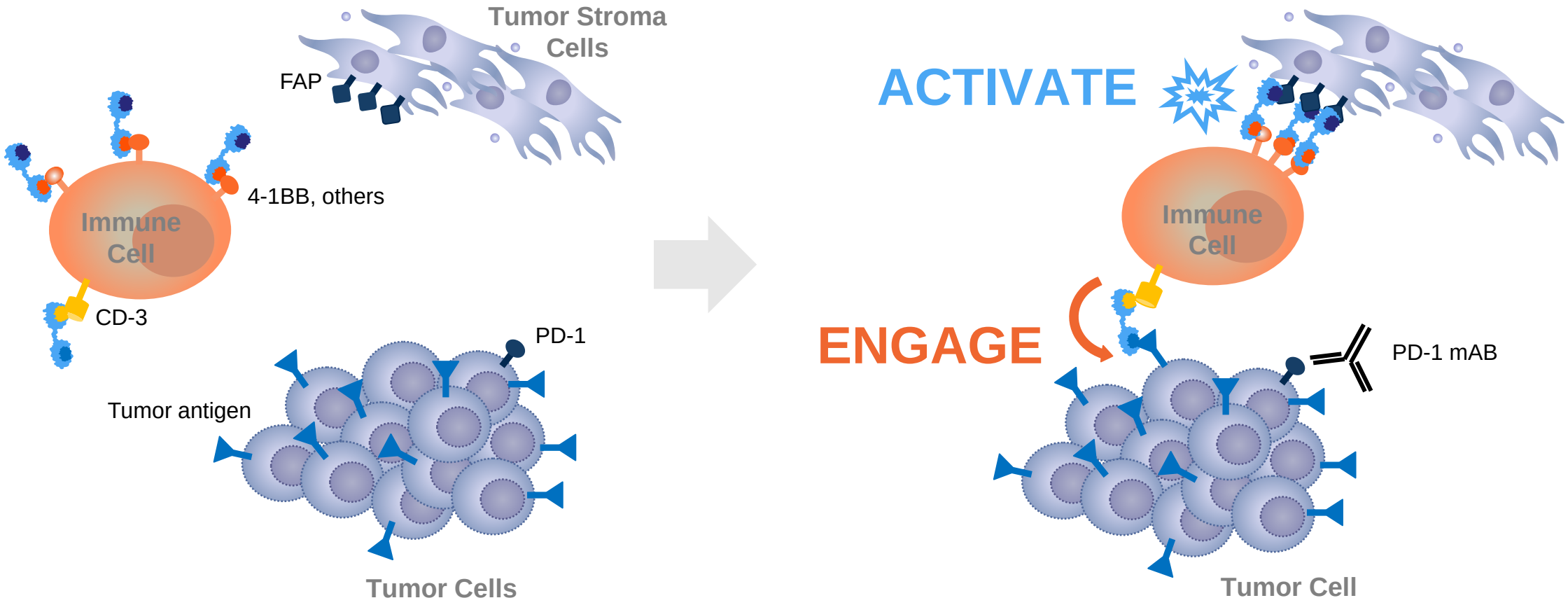
DARPin® Strategy in Immuno-Oncology



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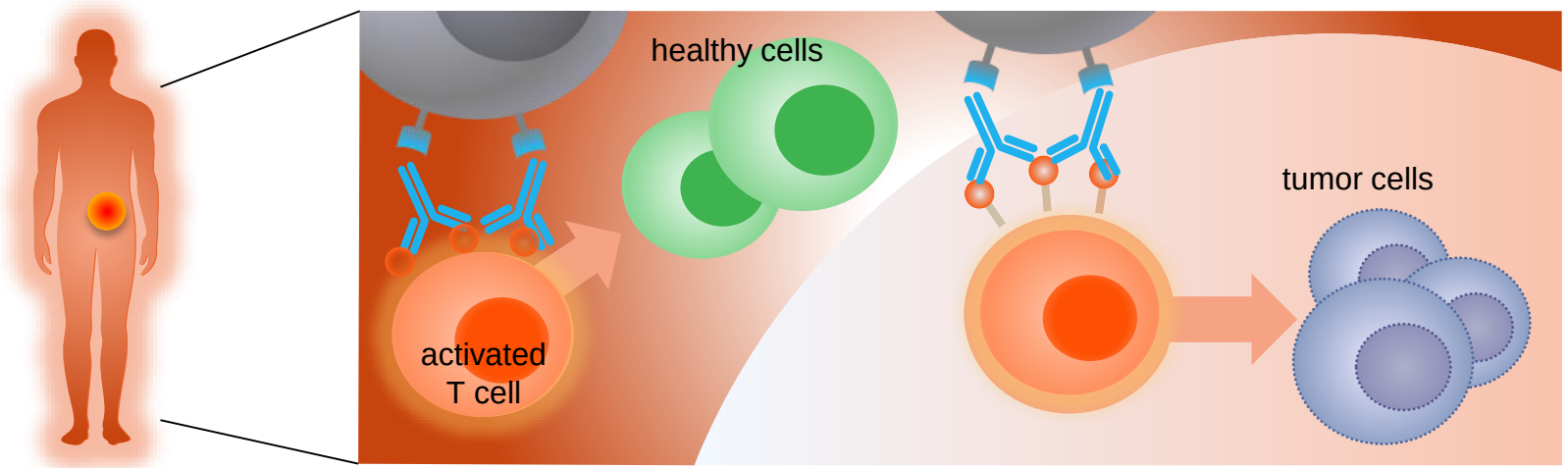
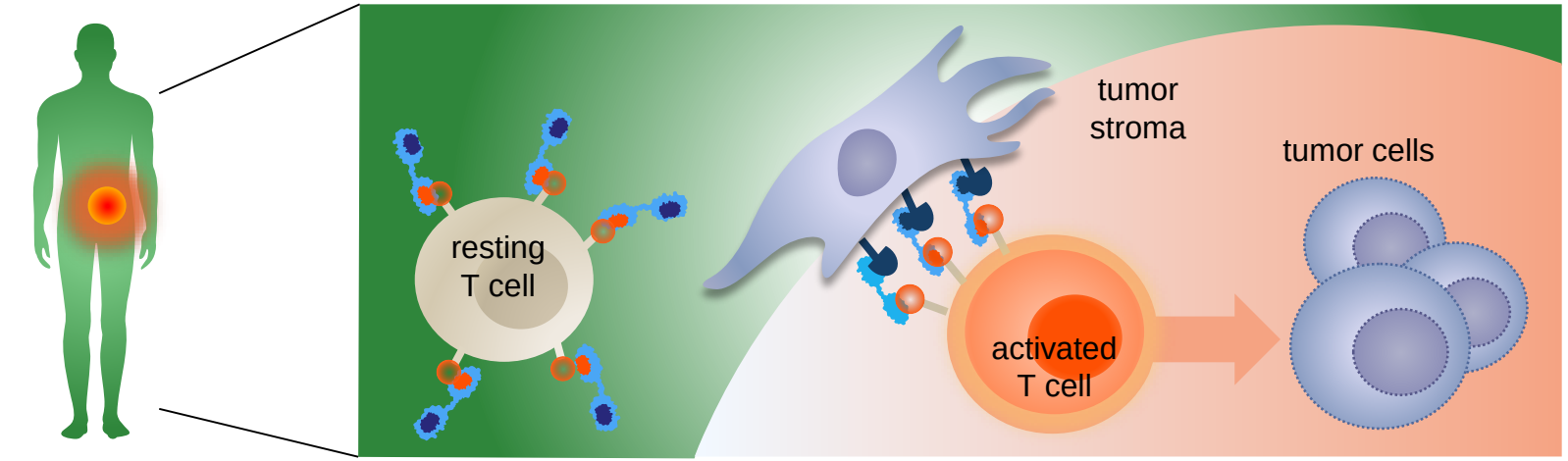
Our Vision to Expand the Therapeutic Window Through Tumor-Localized Immune Modulation

Current IO therapeutics that activate the immune system (agonists) throughout the body show systemic side effects that can limit the effective dosing



Tumor-localized IO therapeutics that activate immune cells preferentially within the tumor may both increase efficacy and reduce systemic toxicities



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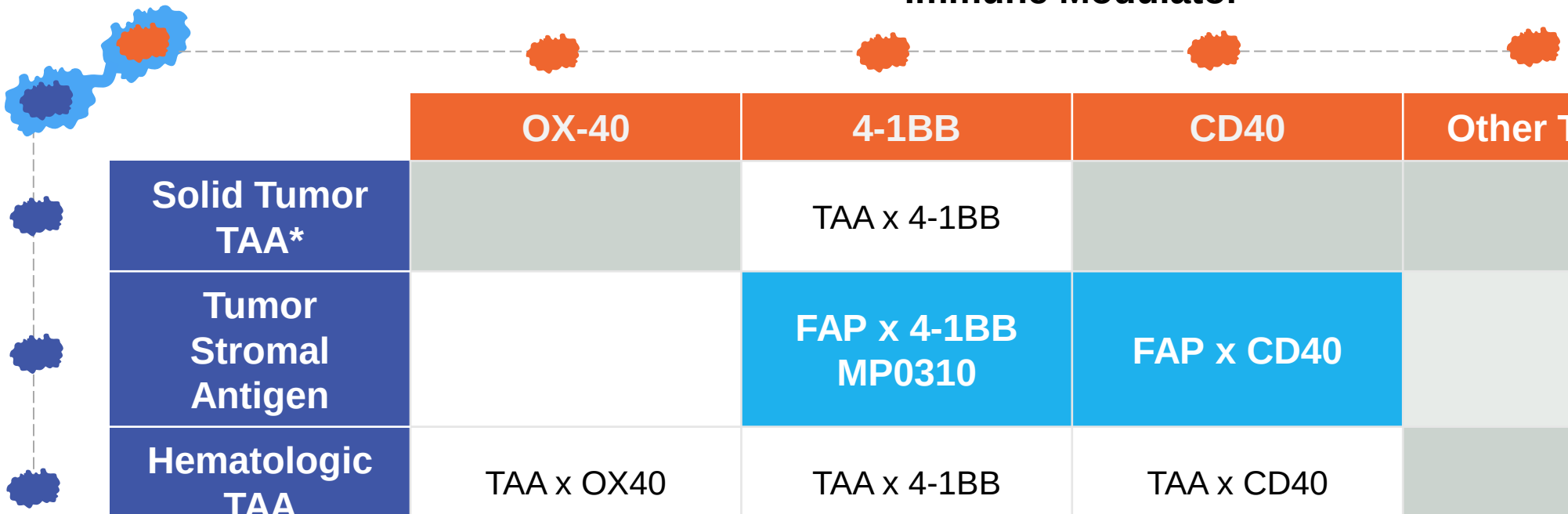
DARPin® Toolbox: Tumor-Localized Immune Modulators

Tumor-localized immune modulators – overcoming the limitation of systemic side effects



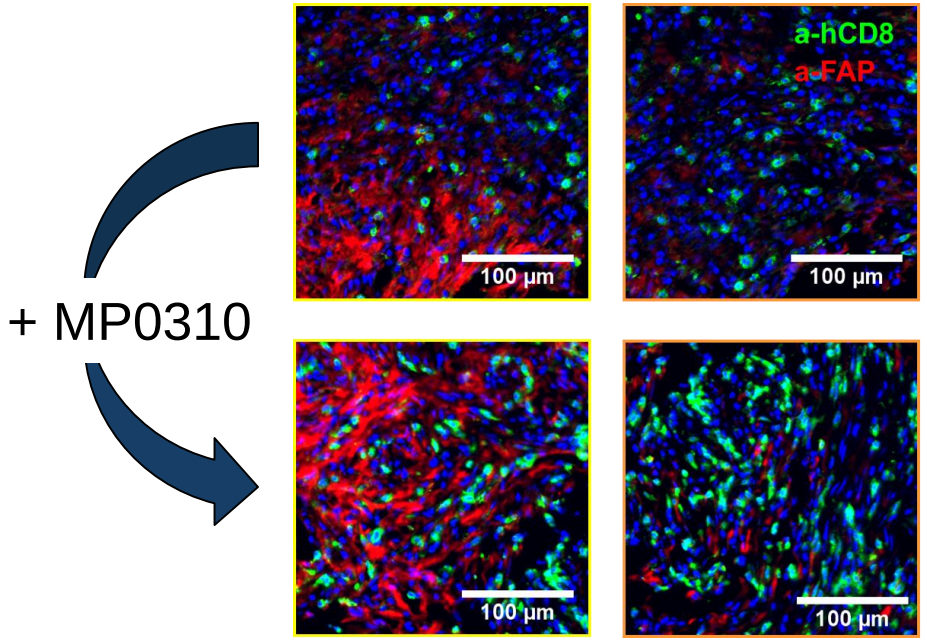
Localizer \ Immune Modulator	OX-40	4-1BB	CD40	Other Targets
Solid Tumor TAA*		TAA x 4-1BB		
Tumor Stromal Antigen		FAP x 4-1BB MP0310	FAP x CD40	
Hematologic TAA	TAA x OX40	TAA x 4-1BB	TAA x CD40	

*Tumor-Associated Antigen (TAA)

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

	Immune modulator	Localizer	Half-life extender
MP0310 DARPin® modules	4-1BB DARPin®	+ FAP DARPin®	+ HSA DARPin®
Illustrative graphic			

- Medical need: most current 4-1BB agonists activate T-cells and NK cells systemically and are limited by side-effects
- MoA: MP0310 uses binding to FAP – a tumor stromal target – to cluster and activate T-cells primarily in the tumor
- Status: MP0310 is in preclinical development and partnered with Amgen. Phase 1 to start in H2 2019



HSA, human serum albumin.

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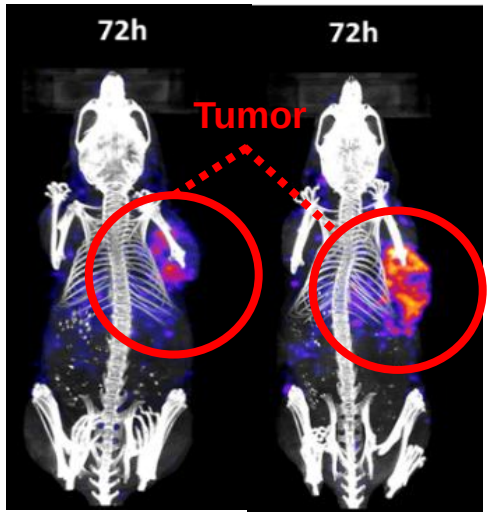
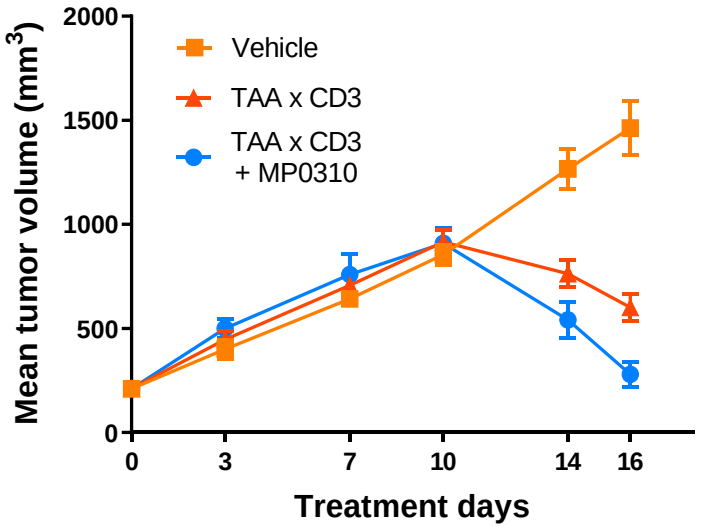
Combined Therapy with MP0310 and TAA x CD3 Bi-Specific Results in Significant Increase of Intratumoral CD8+ T Cells

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

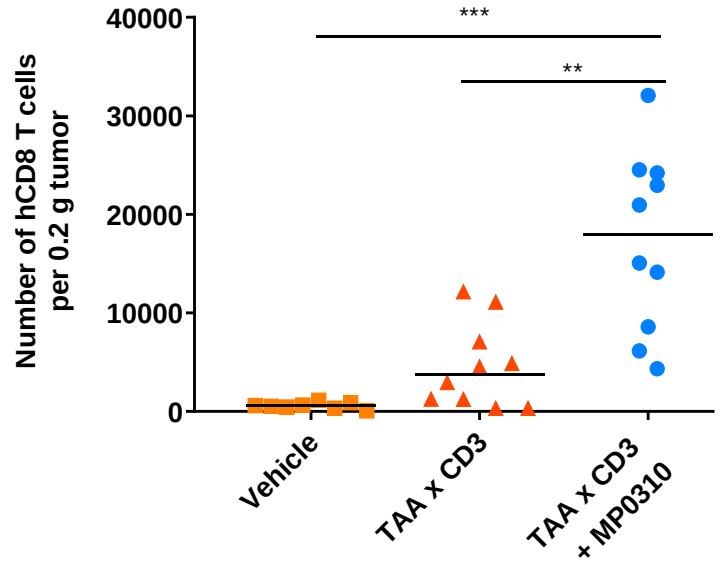


no-FAP x 4-1BB **mFAP x 4-1BB**

Tumor growth inhibition
PBMC humanized HT-29 xenograft model



Intratumoral CD8 T cells



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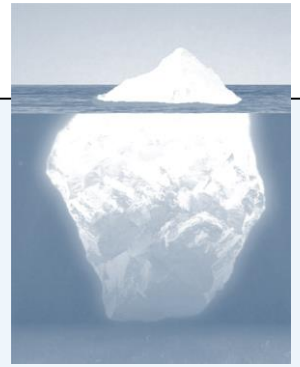
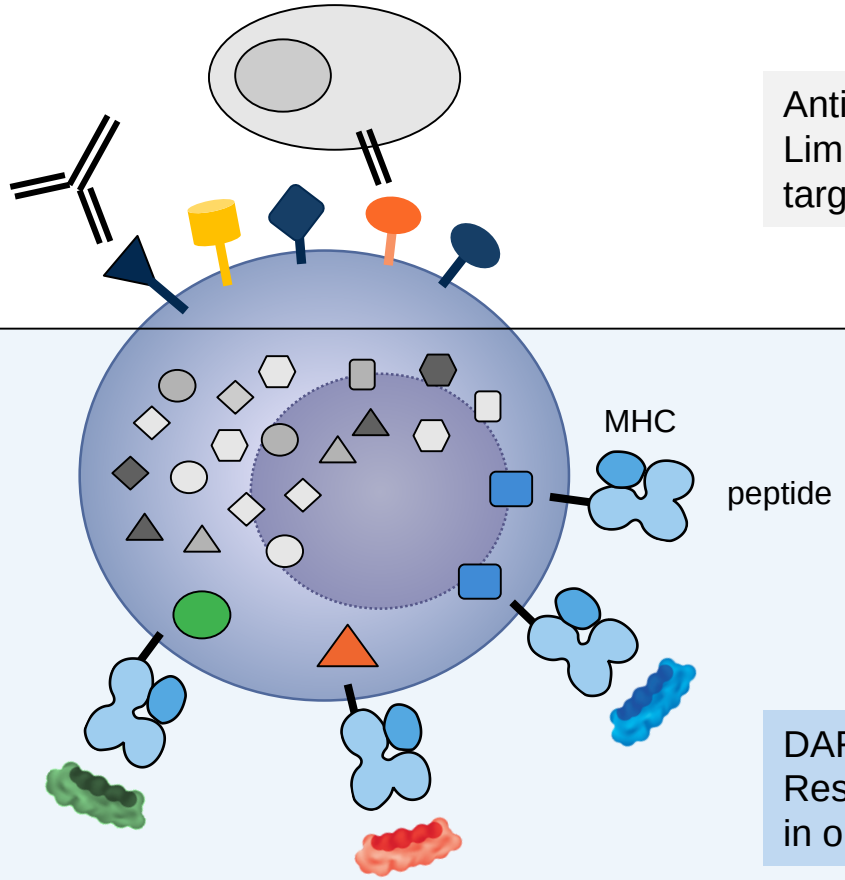
Peptide-MHCs – DARPin® approach for «un-accessible» targets



Extracellular targets

Intracellular targets



Antibody-based approaches:
Limited success with mAbs, BiTEs, CAR-T cell, etc. to target pMHC complexes

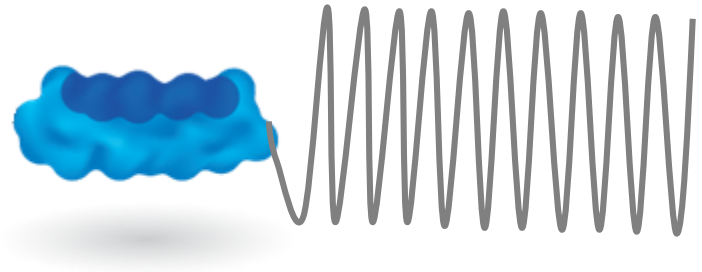
Soluble T cell receptor approaches:
limited by biophysical characteristics and rather low affinity to pMHCs

DARPin®-based approaches:
Research projects to test DARPin® binders to pMHCs in oncology and virology

Most targets are in the intracellular space and not accessible with antibody-based approaches

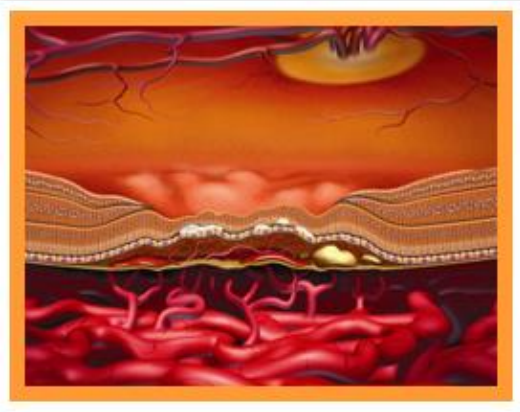
Program Deep Dive: Abicipar

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



- Medical Need: current anti-VEGFs in nAMD are mostly dosed monthly or extended to bi-monthly, leading to high patient burden and under-dosing in real-world settings
- MoA: Abicipar is the only long-acting anti-VEGF and has shown to be the first fixed 12-week nAMD drug, lowering patient burden given full effectiveness in real world setting
- Status: Allergan plans FDA filing in H1 2019 and launch in 2020 and plans to start DME Phase 3 in H2 2019

Choroidal Neovascularization

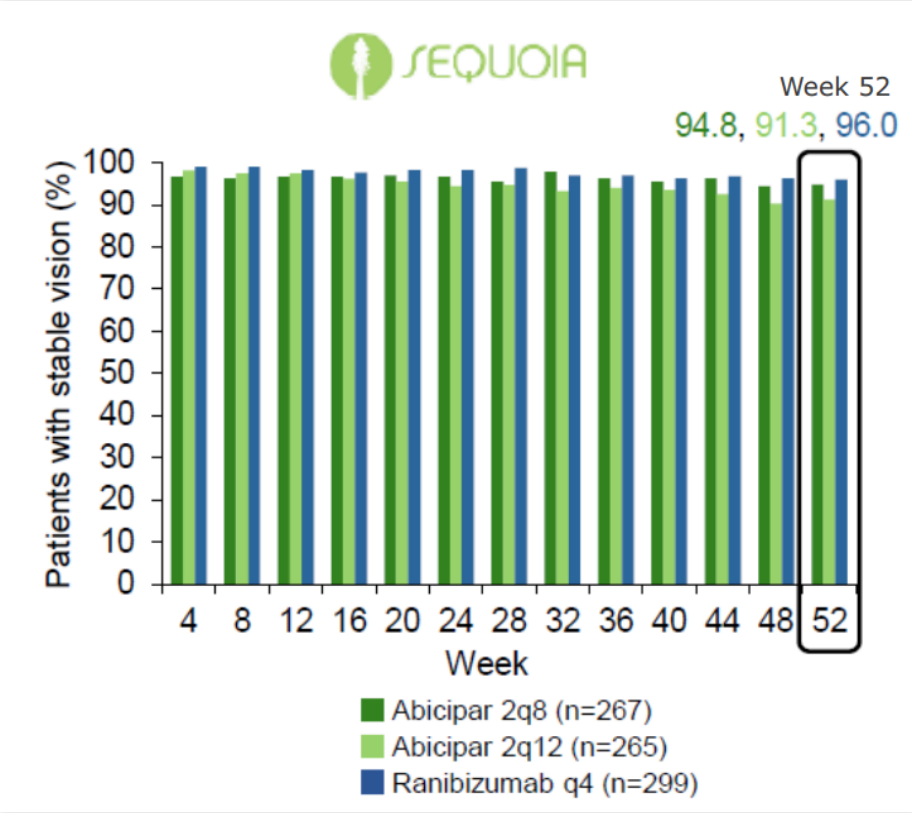


OCT in nAMD

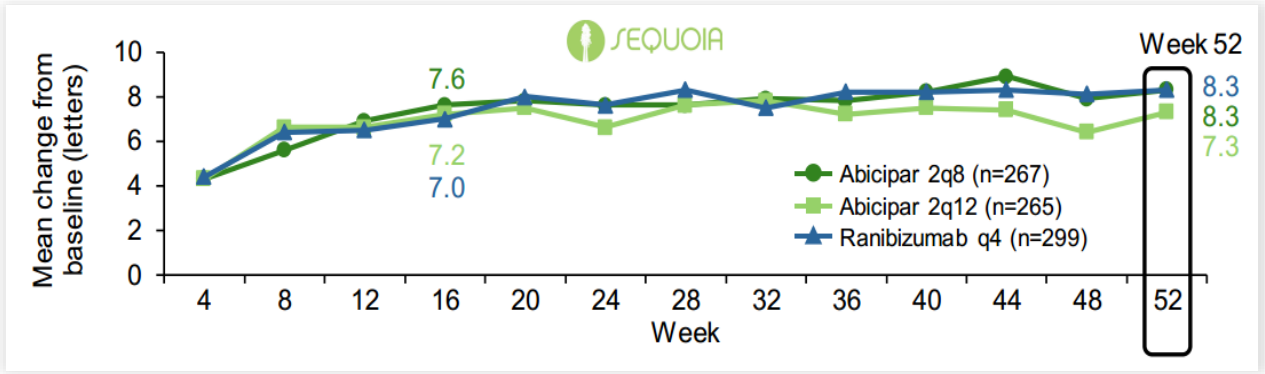
VA defect in nAMD

- Source: Allergan presentation, 06 Dec 2018, VA visual acuity, OCT optical coherence tomography

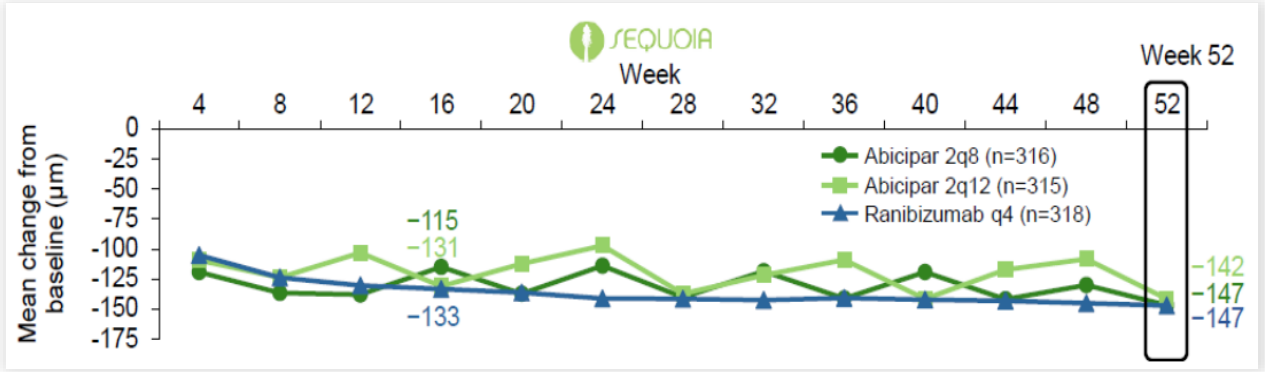
Phase 3 Efficacy Results (SEQUOIA study, 1yr data)



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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Allergan is further optimizing the material for potential launch 2020

- Primary and secondary endpoints support abicipar potential to become the first fixed 12-week anti VEGF in nAMD

- Overall safety events between abicipar and ranibizumab were comparable
  - Intraocular inflammation potential was higher for Abicipar (15%) vs ranibizumab (< 1%)
  - Majority of inflammation was mild to moderate and were treated with topical corticosteroids

- Further optimized Abicipar material was produced and is currently being tested in clinical trial (MAPLE) – Allergan expects results in H1 2019

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Partnerships

Leveraging our DARPin® Engine via Partners

Strategy: Broaden and accelerate our activities & cross-finance our proprietary pipeline

Allergan

Partnership to leverage the DARPin® candidates in ophthalmology (no cost share)

- Total of USD 360m in potential future milestones
- Tiered royalties: Low double-digit to mid-teens

AMGEN

Partnership to test MP0310 in combination with other IO drug candidates (cost share for some clinical trials)

- USD 50mio upfront payment, USD 497mio in clinical, regulatory and commercial milestones
- Double-digit, tiered royalties up to the high teens

AstraZeneca

Collaboration to test MP0250 combination with Tagrisso® in EGFR-mut NSCLC

- No MP0250 rights attached

GILEAD

Gilead-supports research project to test if DARPin® molecules can specifically bind to peptide-MHC complexes

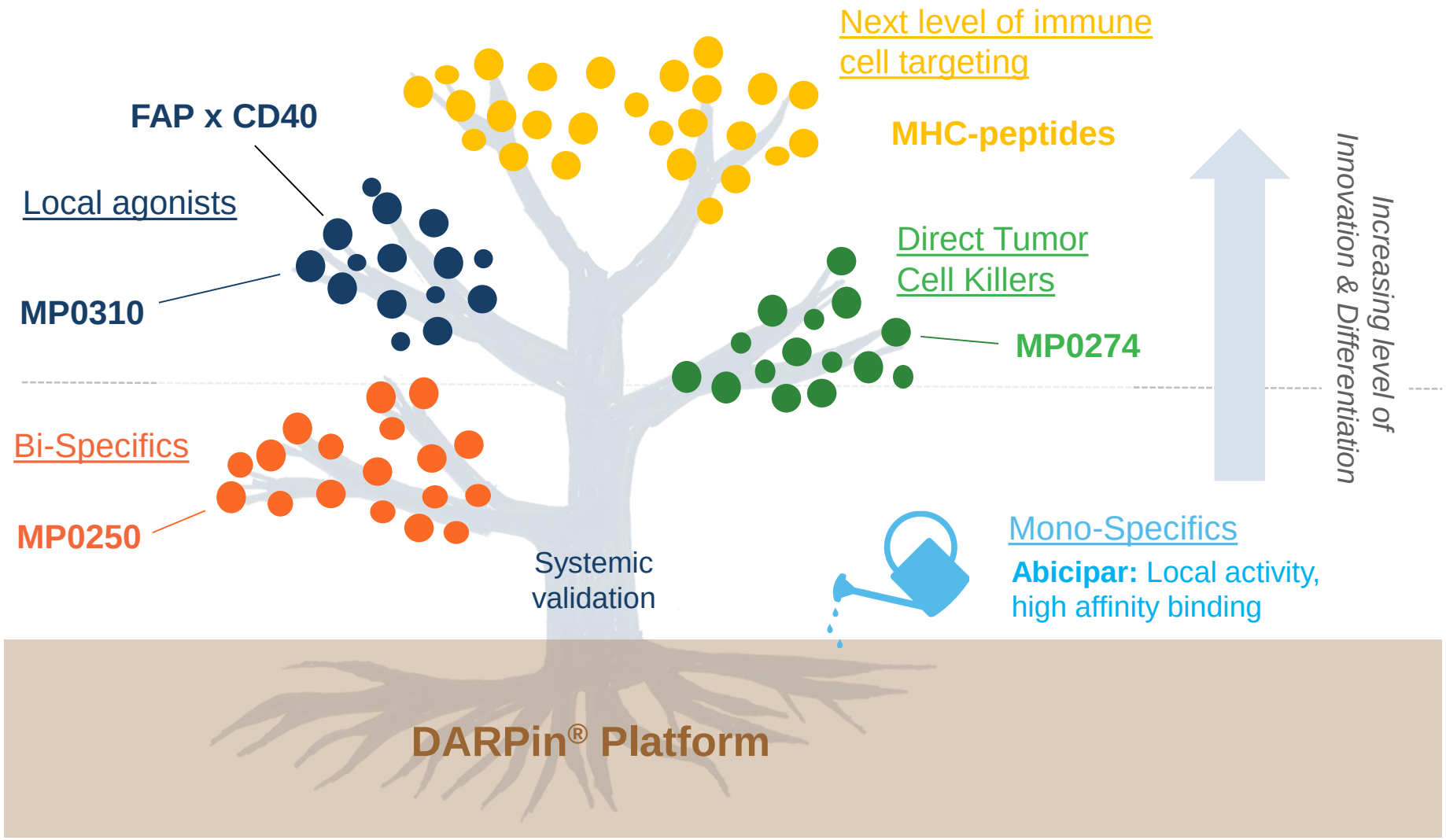
Outlook & Conclusions

Accelerating Progress in 2019 and Beyond

	2019	2020
Abicipar	▪ BLA filing planned (H1) ▪ DME: P3 start ▪ MAPLE: data of further optimized material (H1)	▪ nAMD Launch
MP0250	▪ Additional data: ongoing P2 MM trial ▪ Start of P2 PI and IMiD-combo trial in MM ▪ Interim results from P2 NSCLC trial	▪ Interim P2 data: PI-combo trial ▪ Interim P2 data: IMiD-combo trial
MP0274	▪ First safety & interim efficacy data	
MP0310	▪ FIH with MP0310 (mono therapy)	▪ MP0310 combination trials
Research	▪ Advance DARPin® candidates ▪ Establish novel therapeutic designs	
Capital	Funding into H2 2020 (excl. any future proceeds related to Abicipar and partnerships)	

MOLECULAR partners

Tree of Evolution of DARPin® Approaches



MOLECULAR partners

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IR Agenda

March 15, 2019	Expected Publication of Annual Report 2018
April 16, 2019	Annual General Meeting
May 9, 2019	Publication of Q1 Interim Management Statement