Corporate Presentation

Half-Year 2024 Earnings Call

August 27, 2024

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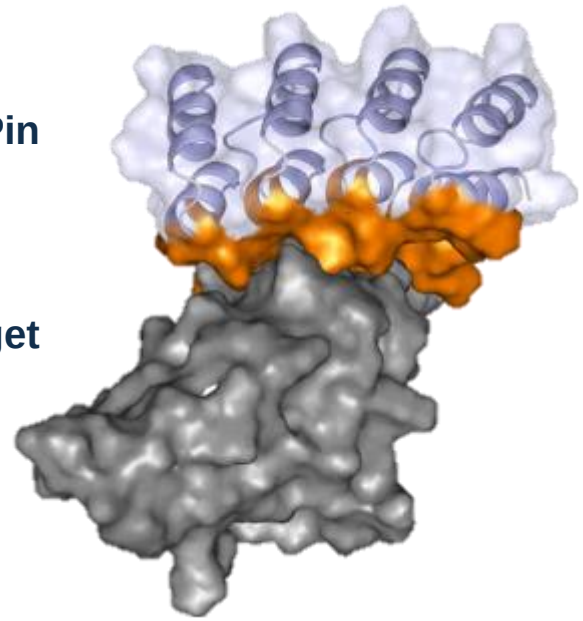
Agenda & Speakers

Welcome & Introduction	Highlights & Outlook 2024	MP0533 & AML	Radio-DARPin & MP0712	Financial Overview
				
Seth Lewis SVP IR & Strategy	**Patrick Amstutz** CEO	**Philippe Legenne** CMO	**Daniel Steiner** SVP Research & Technology	**Robert Hendriks** SVP Finance

The DARPin Modality and Molecular Partners' Strategy



What we invented

- New class of therapeutics: Designed Ankyrin Repeat Proteins **(DARPins)**
- DARPins to **close the gap between small molecules and antibodies**
- 7 clinical-stage compounds, **>2500 patients treated**

How we apply it

- **Unique DARPin solutions** for a defined medical problems not addressable by antibody designs
- Demonstrate **true patient value** with **early clinical readouts**
- Combine our **capabilities with world-class partners** to deliver innovative therapeutics

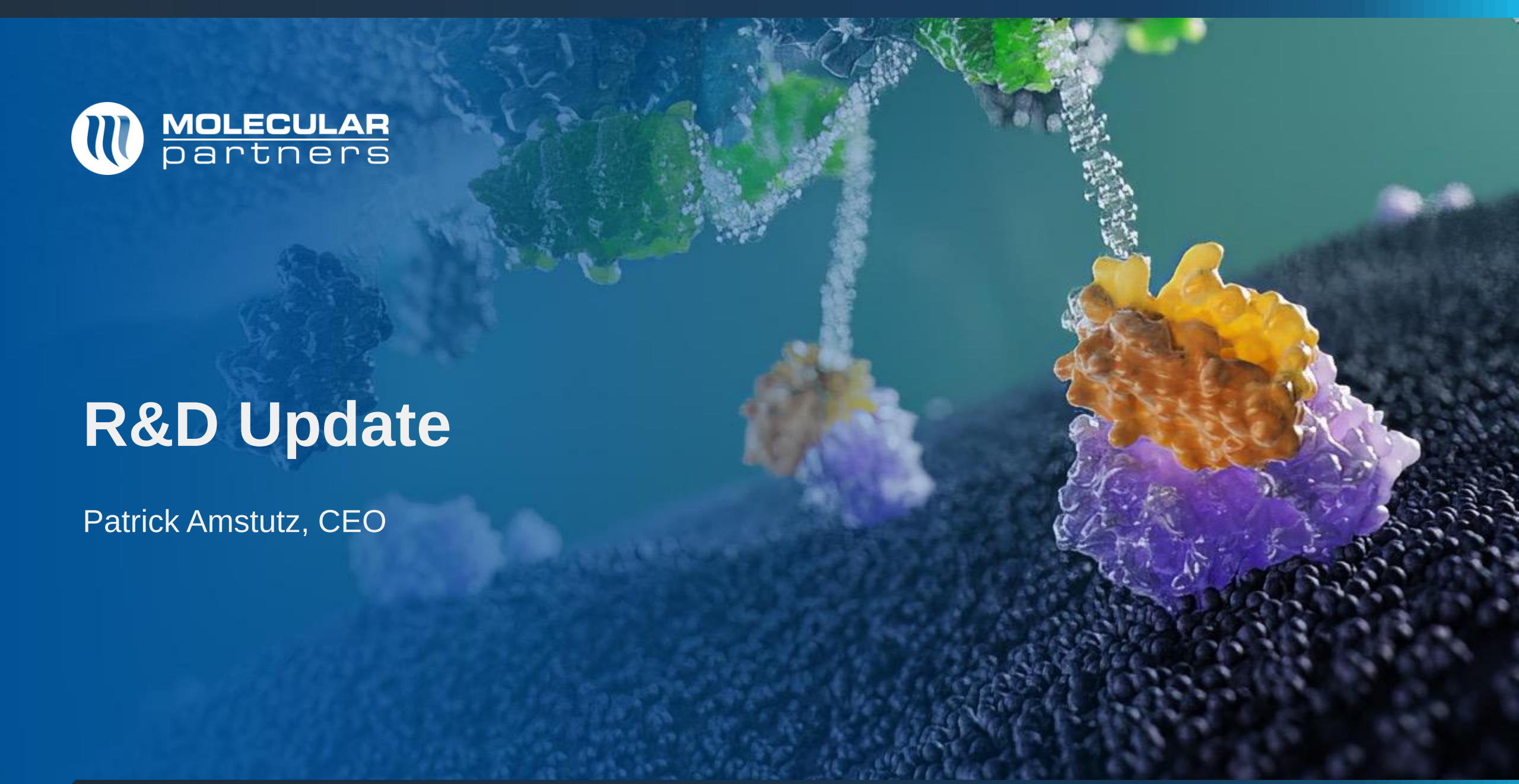
Corporate Highlights – H1 2024

MP0533	• Novel **tetra-specific T-cell engager** for AML patients with high unmet need • **Encouraging initial clinical data** (safety & efficacy) despite suboptimal exposure • Phase 1/2a study on track (**DR 8** open), dose-intensification planned to explore the full potential of MP0533
Radio-DARPin Therapy (RDT) & MP0712	• Successful RDT platform optimization to **reduce kidney accumulation** and **increase tumor uptake** • Announced **MP0712** as **lead DLL3-targeting ^{212}Pb-labelled RDT** to be co-developed with Orano Med • Preclinical data on MP0712 presented at SNMMI 2024: attractive tumor to kidney ratio, efficacy & safety
Switch-DARPin & MP0621	• Demonstrated logic-gated immune activation for **Switch-DARPin platform** • Announced **MP0621**, a **cKit x CD16a x CD47 Switch-DARPin,** for next-generation HSCT conditioning • Initial preclinical data presented at EHA 2024 indicate encouraging efficacy and safety profile
MP0317	• Bi-specific CD40 agonist targeting FAP: **Favorable safety profile** and confirmed tumor-localized CD40 activation leading to **remodeling of tumor microenvironment** in patients presented at ASCO 2024
Operations	• Strong financial position with CHF 159 M in cash as of June 30, 2024, with runway extended **into 2027**

ASCO, American Society of Clinical Oncology; AML, acute myeloid leukemia; DLL3, Delta-like ligand 3; DR, dose-regimen; EHA, European Hematology Association; FAP, fibroblast activation protein; HSCT, hematopoietic stem cell transplantation; SNMMI, Society of Nuclear Medicine and Molecular Imaging.

Philippe Legenne, CMO of Molecular Partners

- Excellent **operational execution** of clinical programs
- Special talent for **KOL** and **investigator engagement** for our trials
- Expert medic with **>20y experience & network in oncology** across a range indications and therapeutic modalities
- **Strong industry background** including leading positions at Novartis, GSK and Amgen
- **Team leader** and **people person**, able to lead and grow the clinical team at Molecular Partners



R&D Update

Patrick Amstutz, CEO

Pipeline

MODALITY	CANDIDATE	RESEARCH	PRE-CLINICAL	PHASE 1	PHASE 2	RIGHTS
Tetra-specific T-cell Engager	**MP0533**	**r/r AML and AML / MDS** *CD33 x CD123 x CD70 x CD3*				MOLECULAR partners
Radio-DARPin Therapy (RDT)	**MP0712**	**SCLC & NETs** *DLL3*	*Co-development**			MOLECULAR partners + oranomed
	Undisclosed Programs	**Solid Tumors**	*In-house programs*			MOLECULAR partners
	Undisclosed Programs	**Solid Tumors**	*2 partnered programs*			NOVARTIS
Switch-DARPin	**MP0621**	**AML / HSCT** *cKit x CD16a x CD47*				MOLECULAR partners
	Undisclosed Program	*Immune cell engager*				
Localized Agonist	**MP0317**	**Advanced Solid Tumors** FAP x CD40				MOLECULAR partners

*The co-development agreement with Orano Med includes up to 3 potential oncology targets including DLL3.
AML, acute myeloid leukemia; DLL3, Delta-like ligand 3; HSCT, hematopoietic stem cell transplant;
MDS, myelodysplastic syndrome; NET, neuroendocrine tumor; r/r, relapsed/refractory; SCLC, small cell lung cancer.

MP0533

Tetra-specific T-cell Engager for AML

MP0533 Phase 1 Dose Escalation in R/R AML Patients

Rapid progress up to cohort 7 with need to explore higher doses

STUDY DESIGN

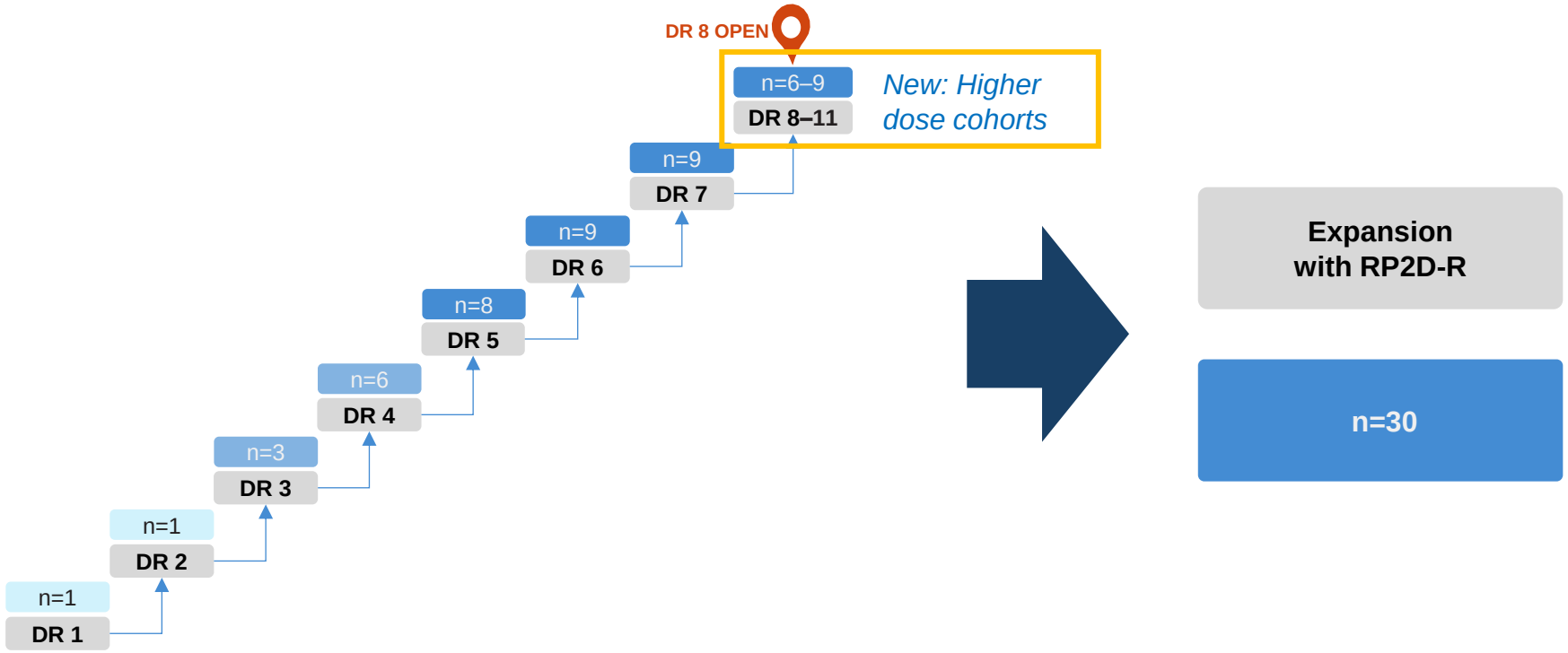
- FIH, single-arm, open-label, Phase 1/2a study of MP0533 monotherapy (NCT05673057)

STUDY OBJECTIVES

- Safety / tolerability
- PK / exposure
- Preliminary activity / PD
  - Clinical response as per ELN (incl. MRD status)
  - Blasts and LSCs counts
  - T-cell activity
  - MP0533 presence in BM
  - Target (co-)expression
  - Evolution of disease clonality

PHASE 1
DR ESCALATION OF MP0533 MONOTHERAPY

PHASE 2A
PoC OF MP0533 MONO- / COMBINATION THERAPY



Study on-going across 9 sites in EU, DR 8 open

BM, bone marrow; DLT, dose limiting toxicity; DR, dose regimen; ELN, European LeukemiaNet; LSC, leukemic stem cell; MRD, minimal residual disease; n, number of patients; PD, pharmacodynamics; PoC, proof of concept; r/r, relapsed/refractory; RP2D-R, recommended phase 2 dose regimen.

MP0533 Phase 1 Patient Characteristics and Safety Profile

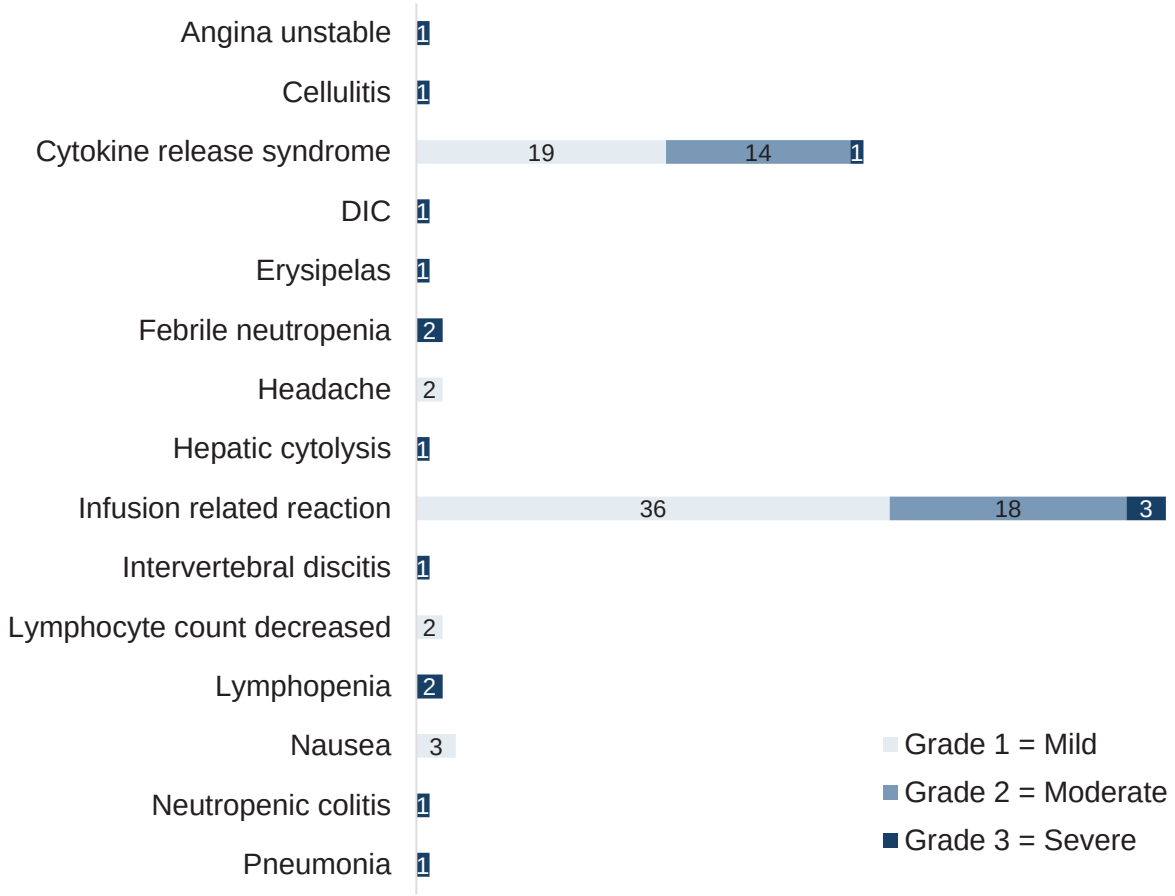
BASELINE CHARACTERISTICS	DR COHORTS 1–6 (n=28)
Sex, n (%)	
Female / male	14 (50) / 14 (50)
Age	
Mean / Median (range)	68 / 74 (22–82)
ECOG PS, n (%)	
0 / 1 / 2	11 (39) / 15 (54) / 2 (7)
Hematologic malignancy, n (%)	
AML / MDS/AML	19 (68) / 9 (32)
ELN risk category, n (%)	
Intermediate / adverse	4 (14) / 24 (86)*
No. of prior systemic treatment lines, n (%)	12 (43) / 10 (36) / 6 (21)
1 / 2 / ≥3	

*TP53 mutated: 7 (25%)

Acceptable safety profile for MP0533 reported for DR 1-6‡:

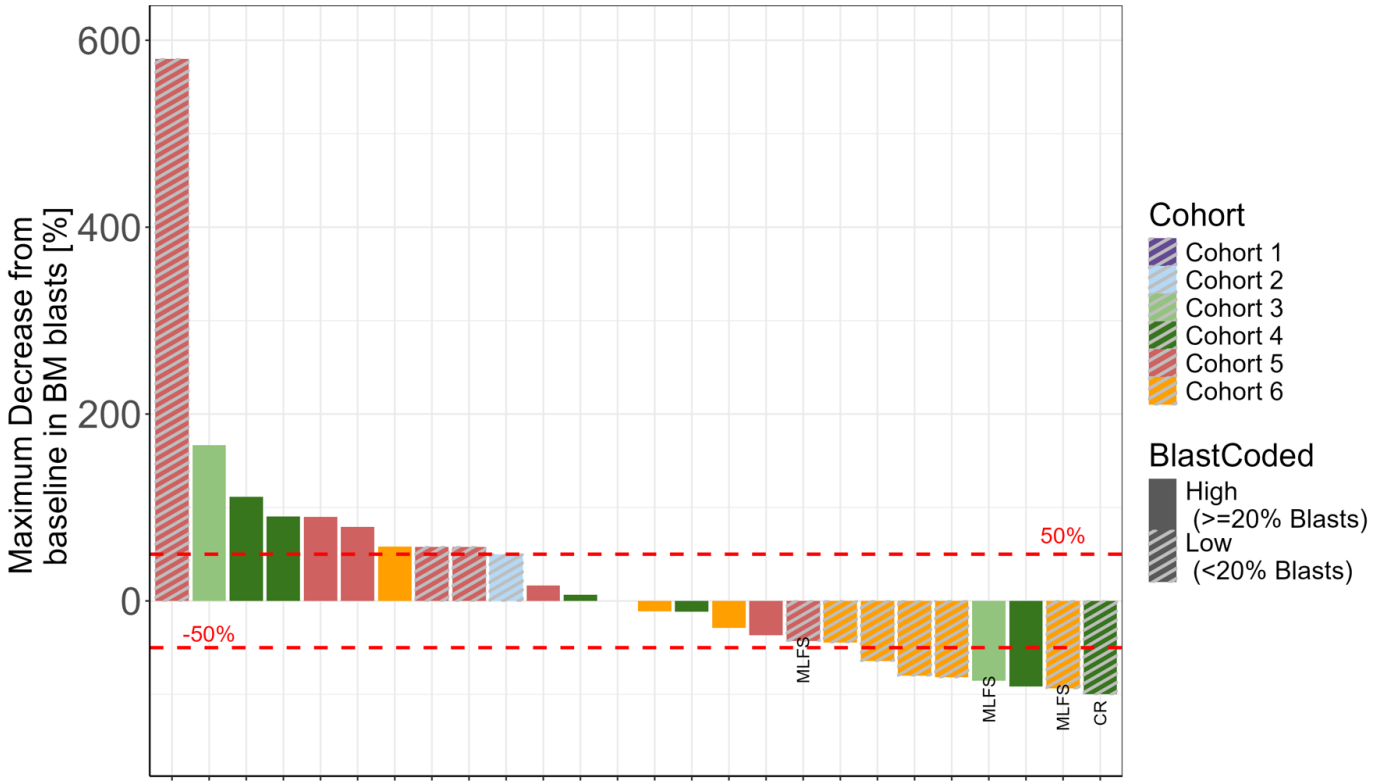
- IRR and CRS are the most frequent MP0533-related TEAEs (mostly Grade 1-2, occasional Grade 3)
- No DLTs up to DR 6

MP0533-RELATED TEAEs‡

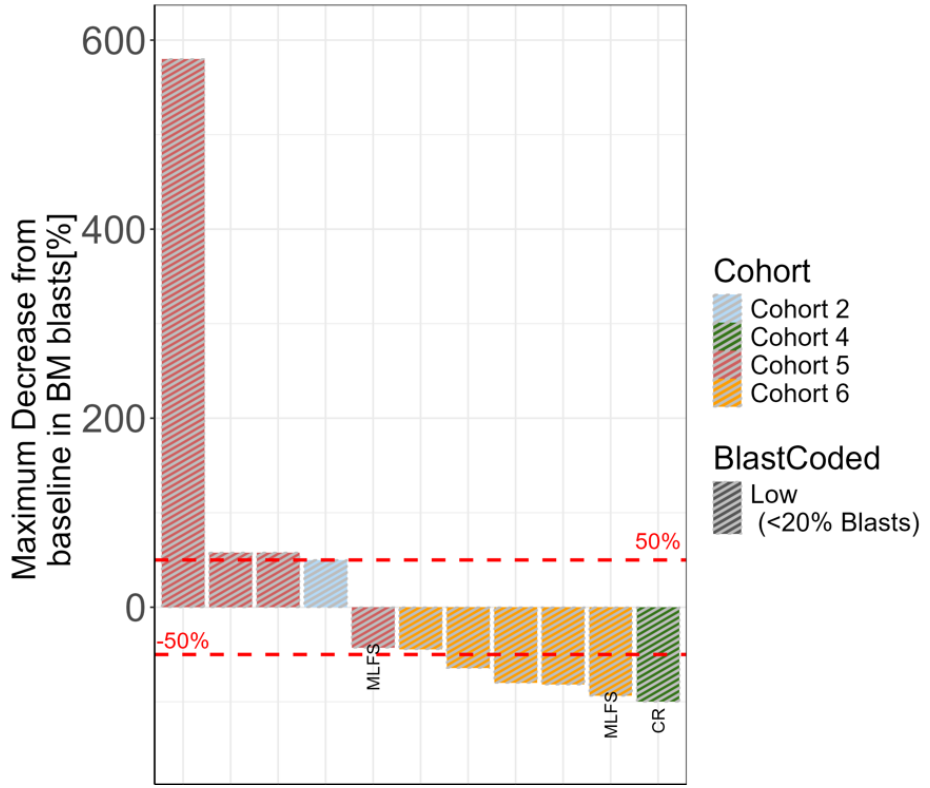


Encouraging Blast Reduction Observed, Particularly in Patients with Lower Disease Burden*

7 of 26 evaluable patients displayed >50% blast reduction in the bone marrow



5 of 11 patients with **lower disease burden*** displayed blast reduction >50 %



Data cut-off: 29 July 2024

Preliminary data as study is ongoing, subject to final data validation.

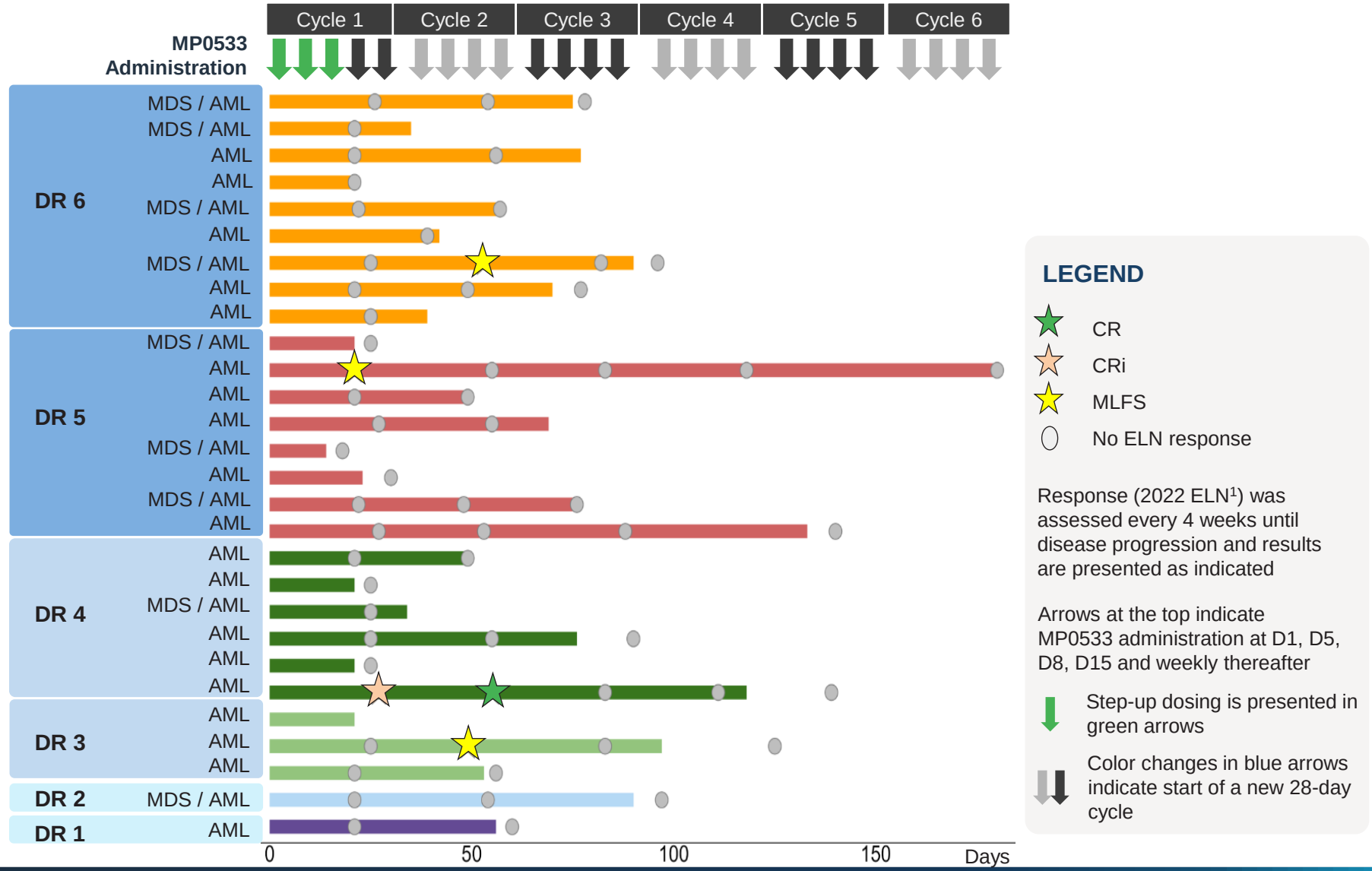
*Lower disease burden defined as patients with baseline blast <20% in bone marrow.
CR, Complete Remission; MLFS, Morphological Leukemia Free State.

MP0533 Treatment & Clinical Response

Four responders reported in DR 3-6:

- CR in 1 patient at DR 4
- MLFS in 3 patients, 1 each at DR 3, DR 5 and DR 6

DR 8 open; data collection & analysis on-going for DR 7



LEGEND

- CR
- CRi
- MLFS
- No ELN response

Response (2022 ELN[1]) was assessed every 4 weeks until disease progression and results are presented as indicated

Arrows at the top indicate MP0533 administration at D1, D5, D8, D15 and weekly thereafter

- Step-up dosing is presented in green arrows
- Color changes in blue arrows indicate start of a new 28-day cycle

Data cut-off: 29 July 2024

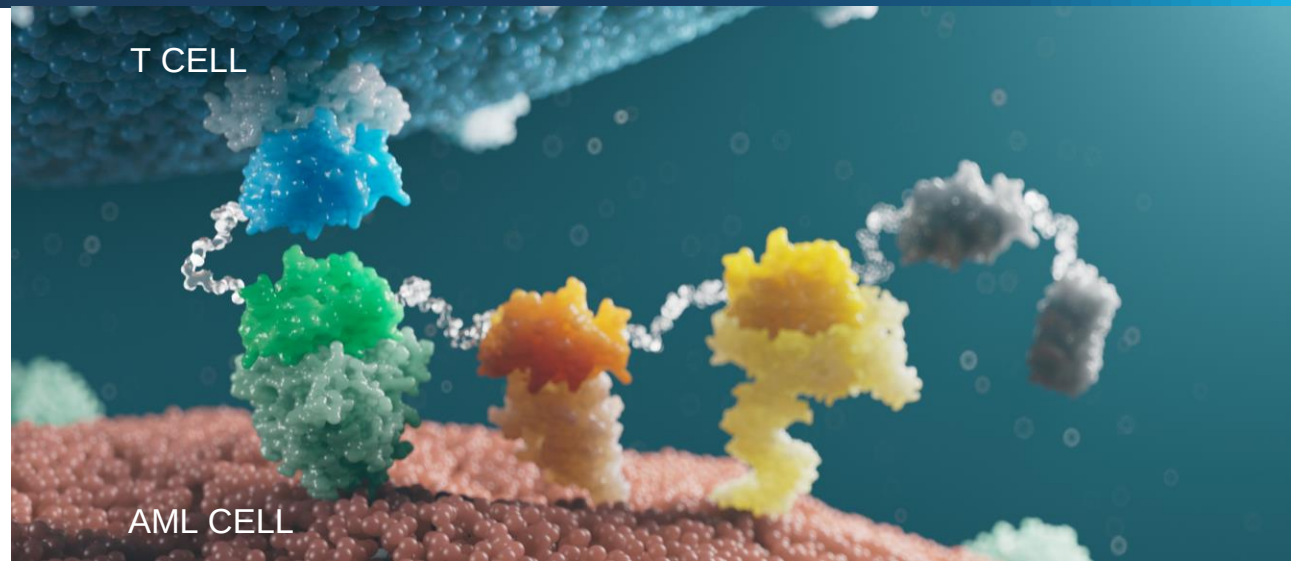
Preliminary data as study is ongoing, subject to final data validation.

1. Döhner et al. Blood 2022;140(12)1345-77.

CR, complete response; CRi, CR with incomplete hematologic recovery; ELN, European LeukemiaNet; MLFS, morphologic leukemia-free state.

MP0533 Summary

- **Rapid progress of MP0533 phase 1** with engaged clinical experts & sites
  - DR 8 open, 28 patients treated in DR 1–6
- **Acceptable safety profile** supports higher dosing
  - IRRs & CRS as most frequent MP0533-related TEAEs
- **Encouraging initial antitumor activity** in highly heterogeneous r/r AML population
  - 4 responders reported (1 responder per cohort, DR 3–6)
  - Encouraging reduction in BM blasts observed
- Need to **improve suboptimal exposure** to **unleash the full potential of MP0533**
  - Increase response rate, depth and durability



MP0533 Outlook

- Protocol being amended for **both higher & more frequent dosing** (in first weeks)
- Clinical update on the program in H2 2024 and on the **amended dosing scheme in 2025**
- **Results** from these activities will **gate future development**

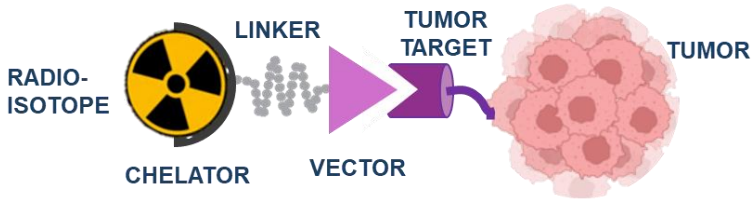
AML, acute myeloid leukemia; BM, bone marrow; CRS, cytokine release syndrome; DR, dose regimen; IRR, infusion-related reaction; r/r, relapsed / refractory; TEAE, treatment-emerging adverse event.

Radio-DARPin Therapy & MP0712 as first program

Platform & Pipeline

Targeted Radiotherapy: “Old” Modality Turned Hot Through Precision

A TARGETED RADIOTHERAPEUTIC:

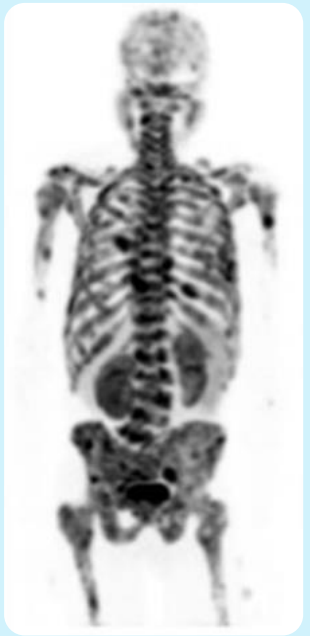


- Potential to **“see what you treat”** and **“treat what you see”** in a powerful and targeted manner
- Proven clinical **benefit for oncology patients**;
  - Therapies with beta emitters established, data with alpha emitters on the rise
- **Supply chain** challenges remain

- **Opportunity**: **Broaden the target & indication space with vectors** amenable to selective tumor uptake

Example of a prostate cancer patient with extensive bone metastasis treated with ^{225}Ac-PSMA-617:

IMAGE → THERAPY → IMAGE



^{225}Ac-PSMA-617

8 MBq →

7 MBq →

8 MBq →

July 2017, PSA = 782 ng/ml
PET/CT, 68Ga-PSMA-11

May 2018, PSA = 0.04 ng/ml
PET/CT, 68Ga-PSMA-11

PET/CT scan pictures adapted from Sathekge M, et al. 225Ac-PSMA-617 in chemotherapy-naive patients with advanced prostate cancer: a pilot study. Eur J Nucl Med Mol Imaging 46, 129–138 (2019). https://doi.org/10.1007/s00259-018-4167-0.

DARPins Have the Potential to Broaden the Target Space

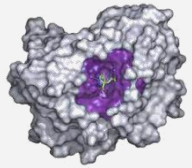
LMW Molecules

Generally good affinity and tumor uptake, low accumulation in kidneys

Limited number of targets with cavity where a LMW targeting moiety can be identified

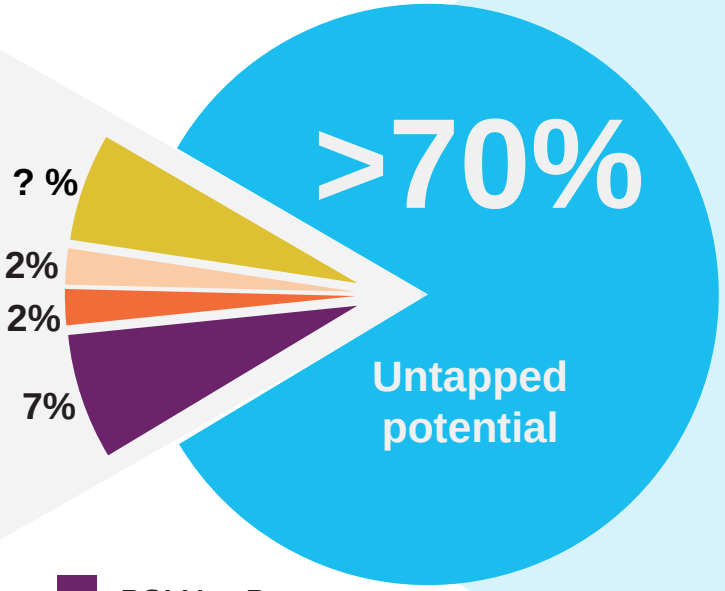
Target Examples:

PSMA
SSTR2



PSMA (1Z8L)

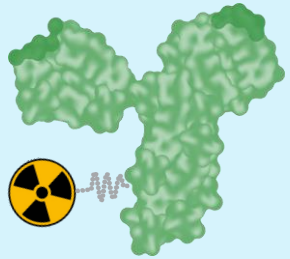
Target Space*



- PSMA + Prostate
- SSTR2 + NETs
- SSTR2 expansion
- Potential other LMW suitable targets**
- Other tumor targets & cancers

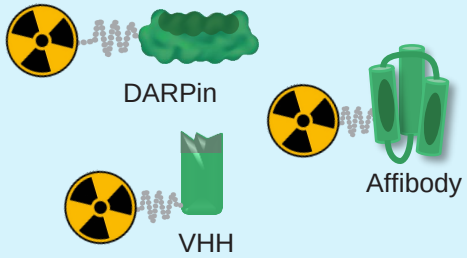
Expanding with other targeting moieties

High affinity & specificity binding of protein surfaces of broad range of tumor targets



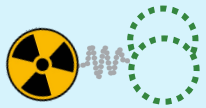
Antibodies

- *Long circulation → risk of bone marrow toxicity*
- *Low tumor penetration*



Small proteins

- *High kidney accumulation → risk of renal toxicity*
- *Suboptimal tumor uptake*



Cyclic-peptides

- *High kidney accumulation → risk of renal toxicity*
- *High affinity & selectivity can be challenging → target space?*

* Source: Guggenheim Securities Report 2023 ** e.g. FAP, CAIX, FOLR1, NTSR1, Eph2A, GPC3, MC2R, GRPR, ITGB6.
LMW, low molecular weight; NET, neuroendocrine tumor; PSMA, prostate-specific membrane antigen; SSTR2, somatostatin receptor 2 .

Opportunity to Evolve DARPins to Radio-DARPins

Enabled by the robust architecture of the DARPin scaffold

Proteins < 60 kDa are reabsorbed by kidneys

Breast cancer patient imaged after treatment with a Her2 DARPin:

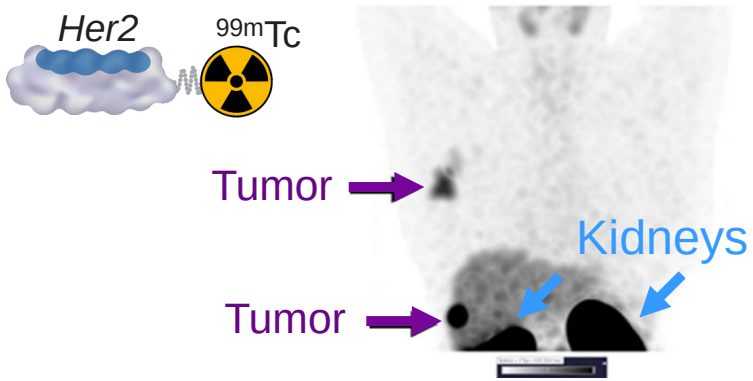
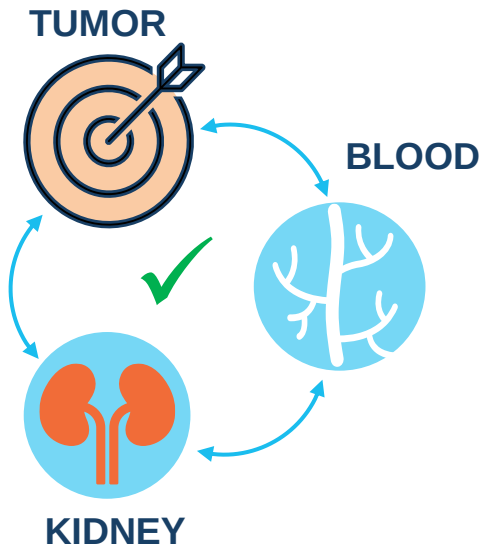


Image kindly provided by Dr. Bragina
Research Centrum for Oncotheranostics, Tomsk

Unlocking DARPins for radiotherapeutic applications

- Increase selective but moderate tumor uptake
- Reduce strong kidney accumulation



Intrinsic DARPin properties

✓ **Small size** (~15 kDa)
→ *Deep tumor penetration*
→ *Short systemic half-life*

✓ **High affinity** (pM range)
→ *Long tumor retention*

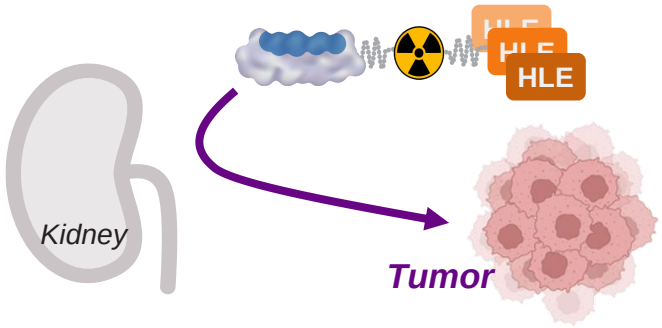
✓ **High selectivity**
→ *Low accumulation in other tissues*

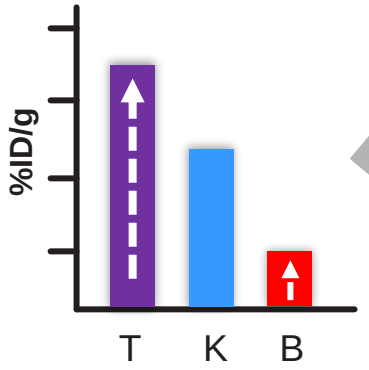
✓ **High stability**
→ *Surface engineering*

Her2, human epidermal growth factor receptor 2; kDA, kilodalton; pM, picomolar; Tc, technetium.

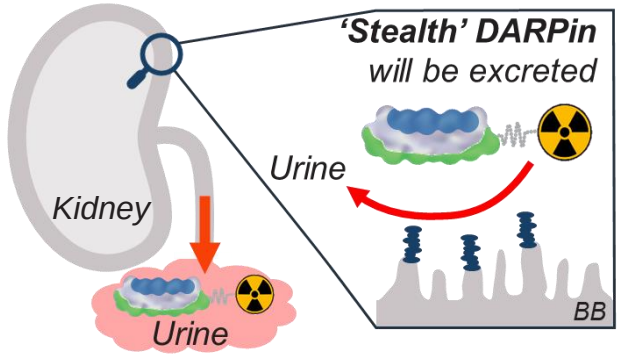
Radio-DARPin Platform Ready to Deliver Product Candidates

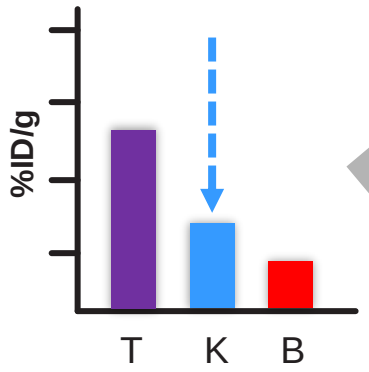
Increased tumor uptake
by half-life extension (*HLE*)*



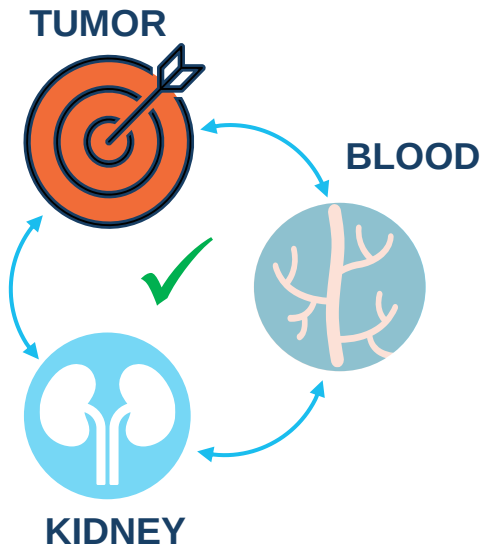


Reduced kidney accumulation
by surface engineering (*Stealth-DARPin*)*





Optimized biodistribution properties



Intrinsic DARPin properties

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  - → *Short systemic half-life*
- ✓ **High affinity** (pM range)
  - → *Long tumor retention*
- ✓ **High selectivity**
  - → *Low accumulation in other tissues*
- ✓ **High stability**
  - → *Surface Engineering*

MOLECULAR partners

BB: Brush border of proximal tubular cells in the kidney with megalin/cubilin receptor complex

*Data presented at various scientific conferences, including: AACR 2023 (Bosshart et al.), SNMMI 2023 (Lizak et al.), EANM 2023 (Lizak et al.), and others.
B, blood; D, dose; HLE, half-life extension; K, kidney; kDA, kilodalton; pM, picomolar; T, tumor.

MP0712: the First ^{212}Pb-DLL3 Targeted Radiotherapy

Combining distinctive DARPin features with the power of ^{212}Pb for efficacious cancer therapy

SCLC as indication

- **Aggressive cancer** with high **unmet medical need**
  - 2L: mPFS ~3m; 5y OS ~3%[1,2]
- **DLL3 is expressed in >85% of patients**[3]

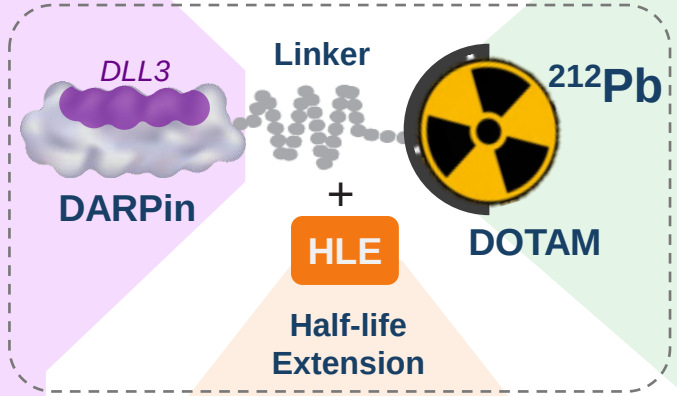
DLL3: a promising target

- **Homogeneous tumor expression**, but low expression level in patients
- No expression in healthy tissues
- **New treatments** with **room for improvement**: Tarlatamab (AMGEN) for 2L+; ORR ~40%

Diverse set of DARPins against DLL3

- **Good developability**
- Specific binding with **high affinity**

Product composition



Tunable albumin binding

^{212}Pb for targeted alpha therapy

- **Strong cytotoxicity** (dsDNA breaks)
- **Single alpha decay** (limited free daughters)
  - → Limited irradiation of healthy tissues
- Relatively **short half-life** (10.6 h)
  - → **Fast energy deposition** (efficacy)
  - → **Easier waste management**

Co-Development with Orano Med

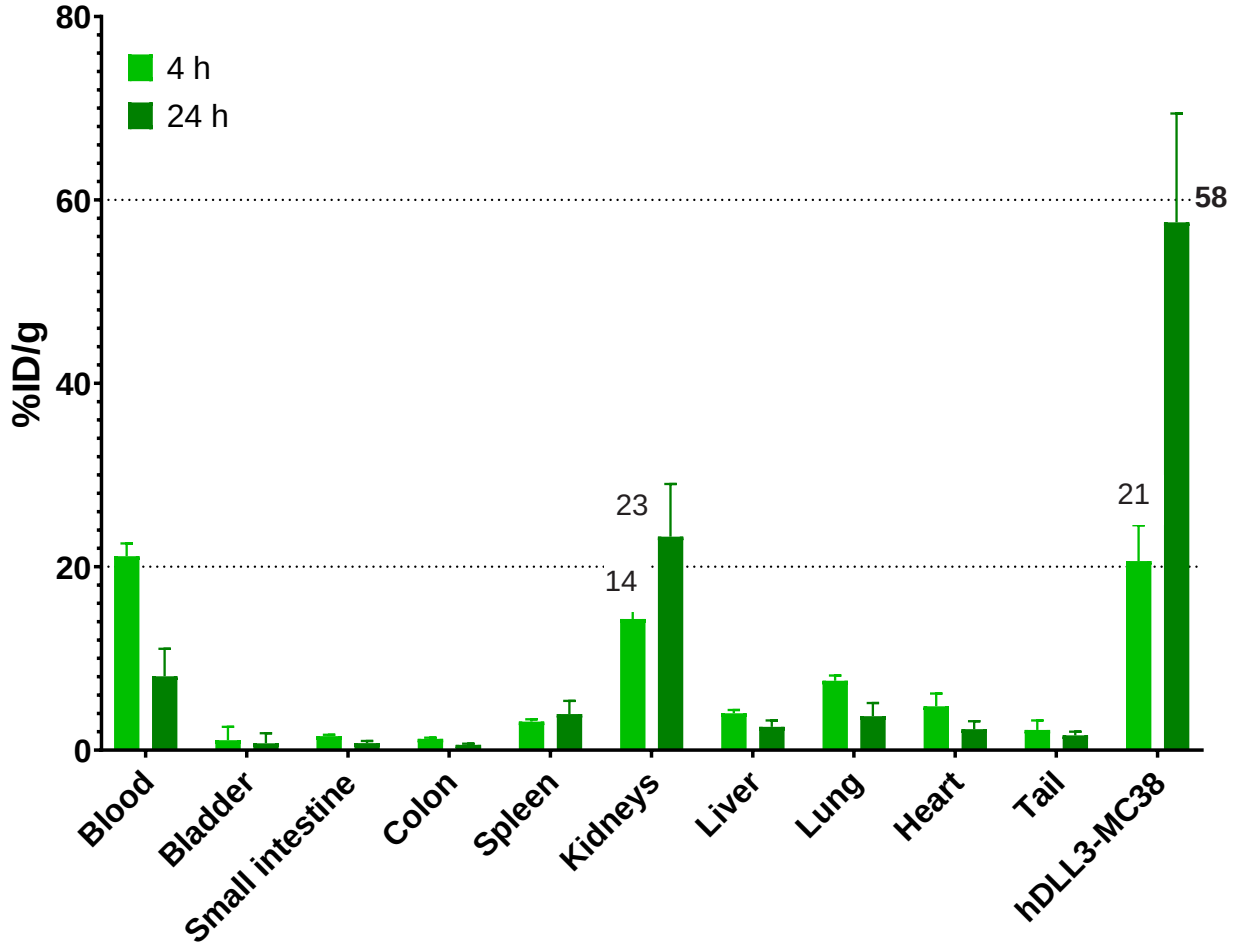
- The **leader for ^{212}Pb** & a committed partner
- **Reliable & scalable ^{212}Pb production**
- **Independent production** capacities (substantial inventory of purified ^{232}Th)

***ASCO**: Ph2 clinical data **^{212}Pb-DOTAMTATE** (AlphaMedix™) showed an **ORR of 55.6%** [4]*

1. Treatment of refractory and relapsed small cell lung cancer, UpToDate; 2. SEER; 3. Rojo et al., Lung Cancer 2020; 4. Strosberg et al., ASCO 2024 presentation. 2L, second line; dsDNA, double-stranded DNA; mPFS, median progression-free survival; ORR, overall response rate; OS, overall survival; Th, thorium.

MP0712: ^{212}Pb-DLL3 Lead Candidate with Attractive BioD Profile

Biodistribution profile of ^{212}Pb-DLL3 x RDT lead candidate



Time Point	Tumor : Kidney
4 h	1.4 : 1
24 h	2.5 : 1

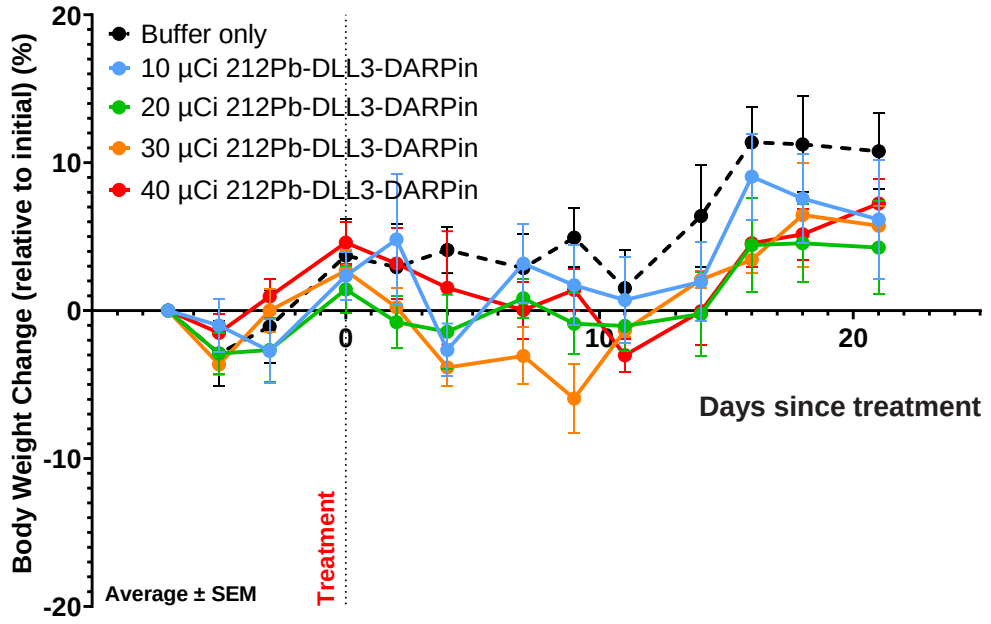
- **MP0712 selected as Lead Candidate for ^{212}Pb-DLL3 Radio-DARPin Therapy**
- Encouraging biodistribution profile with **T:K Ratio >2** in MC38 model
- Similar profile in NCI-H82 model (patient relevant DLL3 expression) with T:K ratio >1 *(data not shown)*

Lizak et al, SNMMI 2024 (oral presentation)

Mice xenografted s.c. with hDLL3-MC38 (Biocytogen)
Dose: 10 µCi of ^{212}Pb at 0.01 mg/kg of DLL3 DARPin
BioD, biodistribution; AUC, area under the curve.

Favorable Safety & Potent Efficacy of ^{212}Pb-DLL3 RDT Candidate

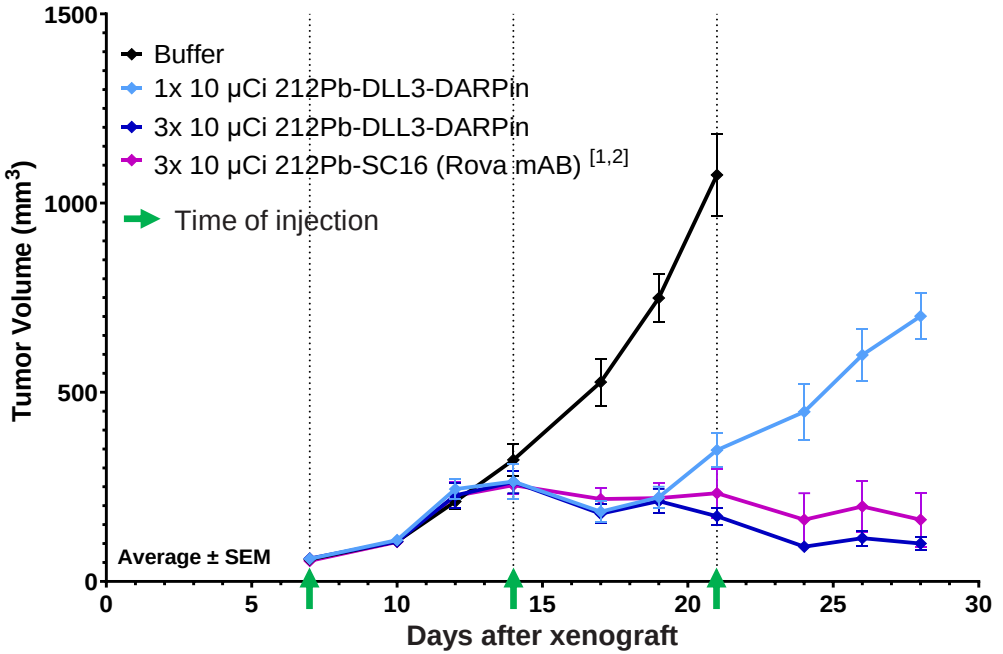
Dose range finding in wt mice



- All treatments up to **40 µCi were well tolerated**

→ **Treatment shows a favorable safety profile suggesting its potential for clinical use**

Efficacy in MC38-hDLL3 model



- **Significant and durable inhibition of tumor growth** (comparable to benchmark mAb)

→ **Treatment shows profound antitumor activity at clinically relevant dose**

Lizak et al, SNMMI 2024 (oral presentation)

CD1 wt mice
Dose: 10 to 40 µCi of ^{212}Pb at 0.01 mg/kg of DLL3 DARPin

Mice xenografted s.c. with hDLL3-MC38 (Biocytogen)
Dose: 10 µCi of ^{212}Pb at 0.01 mg/kg of DLL3 DARPin

1. Sharma et al., Cancer Res 2017; 2. Korsen et al., PNAS 2022

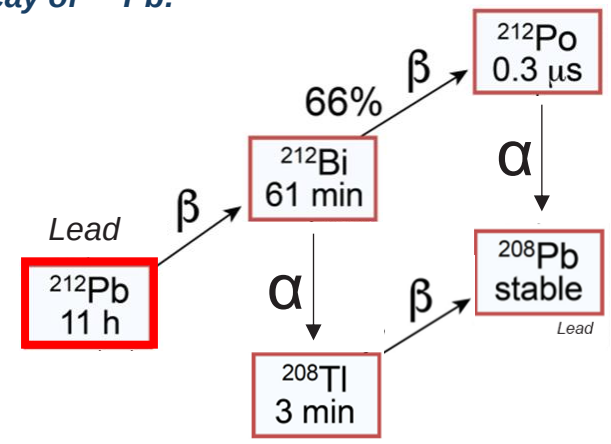
^{212}Pb has Key Advantages as Radioisotope Amenable to Radiotherapy

Selectivity
Localized and limited exposure of healthy cells with alpha particles

Safety
Clean decay profile: ^{212}Pb is an alpha precursor with low risk for long-lived free daughter radionuclides

Waste management
Less problematic thanks to short half-life

Decay of ^{212}Pb:



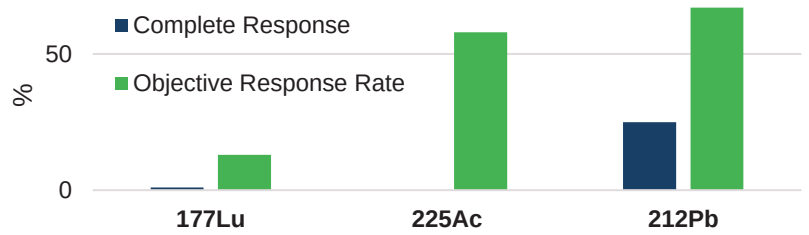
Adapted from Li et al., Current Medicinal Chemistry, 2020

Efficacy
Short decay half-life leads to high energy deposition on tumor in short time frame

^{212}Pb demonstrated efficacy and good tolerability in GEP-NET patients treated with AlphaMedix^{TM}: 57% ORR in ph 1+2 combined
(Strosberg et al, ASCO 2024)

^{212}Pb bears best-in-class potential for certain indications

	Beta	*Alpha*	
	177Lu (1)	**225Ac** (2)	**212Pb** (3)
Therapy	177Lu-DOTATATE (=Luthatera®)	225Ac-DOTATATE	212Pb-DOTAMTATE
Phase	Phase 3 NETTER-1	Comp. use	Phase 1
Patients (n)	111	26	12



Clinical data comparing ^{212}Pb with other radioisotopes in treatment-naïve NET patients treated with SSTR-targeting RLTs

References: 1. Strosberg et al, NEJM 2017; 2. Ballal et al, JNM 2022; 3. Delpassand et al, JNM 2022.
GEP-NET, gastroenteropancreatic neuroendocrine tumor; Comp. use, compassionate use; RLT, radio-ligand therapy.

Orano Med – Partner to Co-develop Radio-DARPin Therapies

oranomed
^{212}Pb for Targeted Alpha Therapy

Leader in targeted alpha therapies

Large-scale, reliable, independent production and supply capabilities of ^{212}Pb

- Proprietary stockpile
- Achieve high purity of ^{212}Pb
- 4 GMP sites available or in construction across US and EU (incl. 2 ATLabs)
- Excellent logistics

Clinical capabilities demonstrated with ^{212}Pb and AlphaMedix™ in Phase 2 study in collaboration with RadioMedix

Strong partner for RDTs

Proven collaboration track record over past 2 years

- Trust, complementary and deep expertise

Co-development agreement signed on Jan 5, 2024:

- 50:50 cost and profit share
- Up to three tumor antigens including DLL3
- Molecular Partners commercialization rights for DLL3

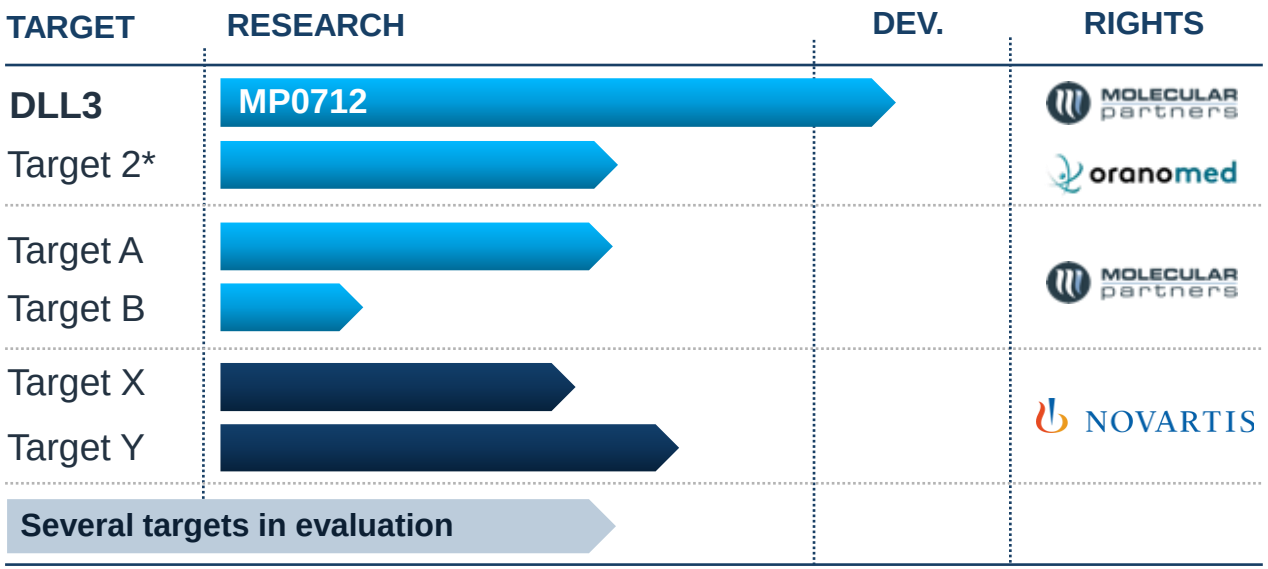
"Endless" starting material as basis for ^{212}Pb supply

Lead-212 is obtained **chemically** by **successive extractions and purifications** of the descendants of thorium-232

Orano Med owns more than 20,000 drums of highly purified thorium-232 offering virtually illimited supply

Summary – Radio-DARPin Therapy (RDT) & MP0712

- Successful RDT platform optimization **with attractive biodistribution profile** (tumor, kidney, blood)
- **MP0712 selected as Lead Candidate for targeted ^{212}Pb-DLL3** Radio-DARPin Therapy
- IND-enabling activities initiated with Orano Med; **initial clinical data expected in 2025**

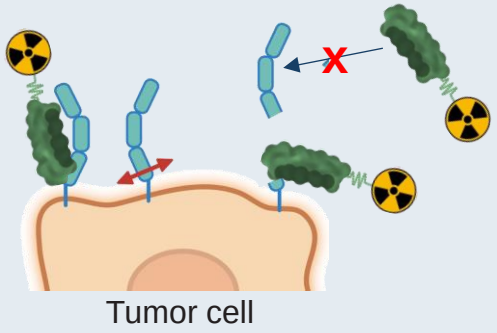


RDT Outlook:

- ***Advance MP0712*** *and additional* ***pipeline candidates***
- *Evolve RDT platform for* ***next differentiated RDT programs***
- ***Progress collaboration projects*** *with Orano Med and Novartis*

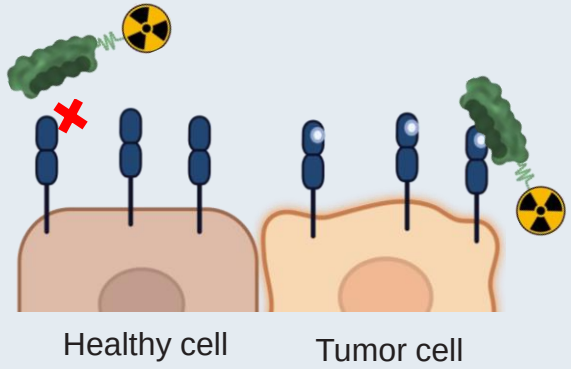
*The co-development agreement with Orano Med includes up to 3 potential oncology targets including DLL3 (Delta-like ligand 3).
IND, investigational new drug.

Outlook: Leverage DARPin Differentiation to build RDT portfolio

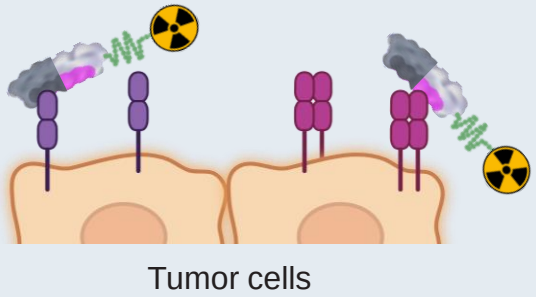


Selectivity for **membrane-bound antigen** vs **shed antigen** for high tumor uptake

Selectivity to antigens with **high surface homology** to other targets



2in1 DARPin



Bi-specific DARPins to achieve **broader distribution in tumors** & **overcome heterogeneity,** especially for targeted alpha therapy

Created in part with BioRender.com

Financial Overview

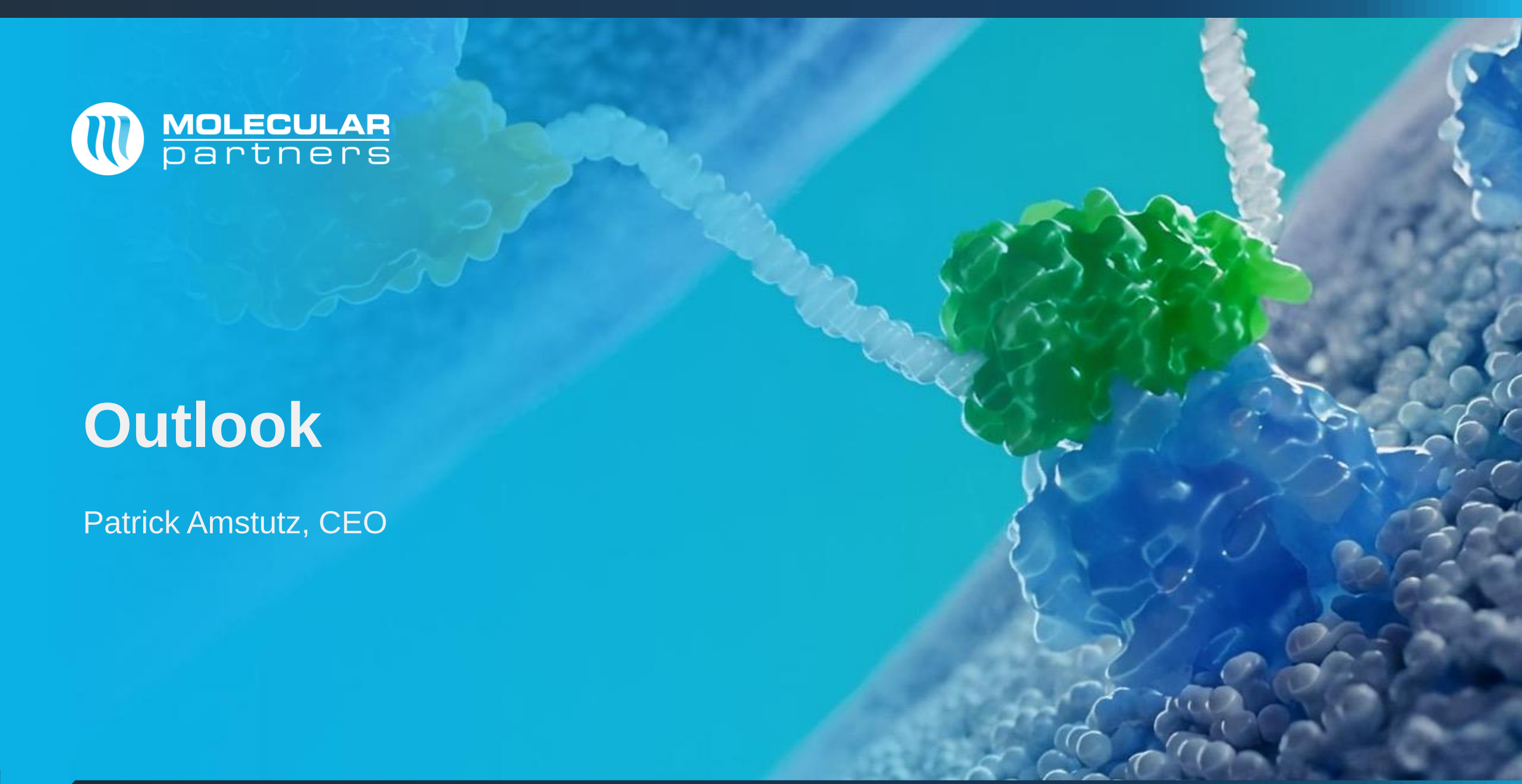
Robert Hendriks, SVP Finance

H1 2024 Financial Highlights

- Strong financial position with CHF 159.1 million in cash (including short term deposits) as of June 30, 2024
- Revenue of CHF 4.3 million from the Novartis radioligand collaboration
- Net cash used in operating activities of CHF 32.8 million in H1 2024
- Operating loss of CHF 31.8 million and net loss of CHF 26.4 million in H1 2024
- Updated FY 2024 expense guidance of CHF 65–75 million (previous guidance CHF 70–80 million)
- Company expected to be funded into 2027, excluding any potential payments from R&D partnerships

Key Figures H1 2024

CHF MILLION, EXCEPT PER SHARE AND FTE DATA	H1 2024	H1 2023	CHANGE
Revenues	4.3	3.5	0.8
Total operating expenses	(36.1)	(34.5)	(1.6)
Operating result	(31.8)	(31.0)	(0.8)
Net financial result	5.4	0.2	5.2
Net result	(26.4)	(30.8)	4.4
Basic net result per share (in CHF)	(0.80)	(0.94)	0.14
Net cash used in / generated from operations	(32.8)	(29.8)	(2.9)
Cash balance (including short-term time deposits) as of June 30	159.1	218.2	(59.1)
Number of FTEs as of June 30	161.9	168.5	(6.6)



Outlook

Patrick Amstutz, CEO

2024 Outlook and Upcoming Milestones

MP0533	• Protocol being amended for **both higher & more frequent dosing** (in first weeks) • Clinical update with data of **amended dosing scheme expected in 2025**
Radio-DARPin Therapy (RDT) & MP0712	• Advance MP0712 into IND-enabling studies with **initial clinical data expected in 2025** • Expand portfolio with **differentiated RDT programs,** update in H2 2024 • Continue to progress RDT collaborations with Orano Med and Novartis
Switch-DARPin & MP0621	• Update on MP0621 preclinical studies in H2 2024 • Switch-DARPins for next-generation immune cell engagers, update at SITC 2024
MP0317	• Final data from the FIH dose-escalation Phase 1 study to be presented at SITC 2024 • Clinical exploration of combinations possibly via investigator-initiated trials

CHF ~159 million cash* (incl. short-term time deposits) ensures **funding into 2027**

*As of June 30, 2024.
AML, acute myeloid leukemia; IND, investigational new drug; r/r, relapsed/refractory.

Thank You

Appendix

Financial Guidance for Full-Year 2024

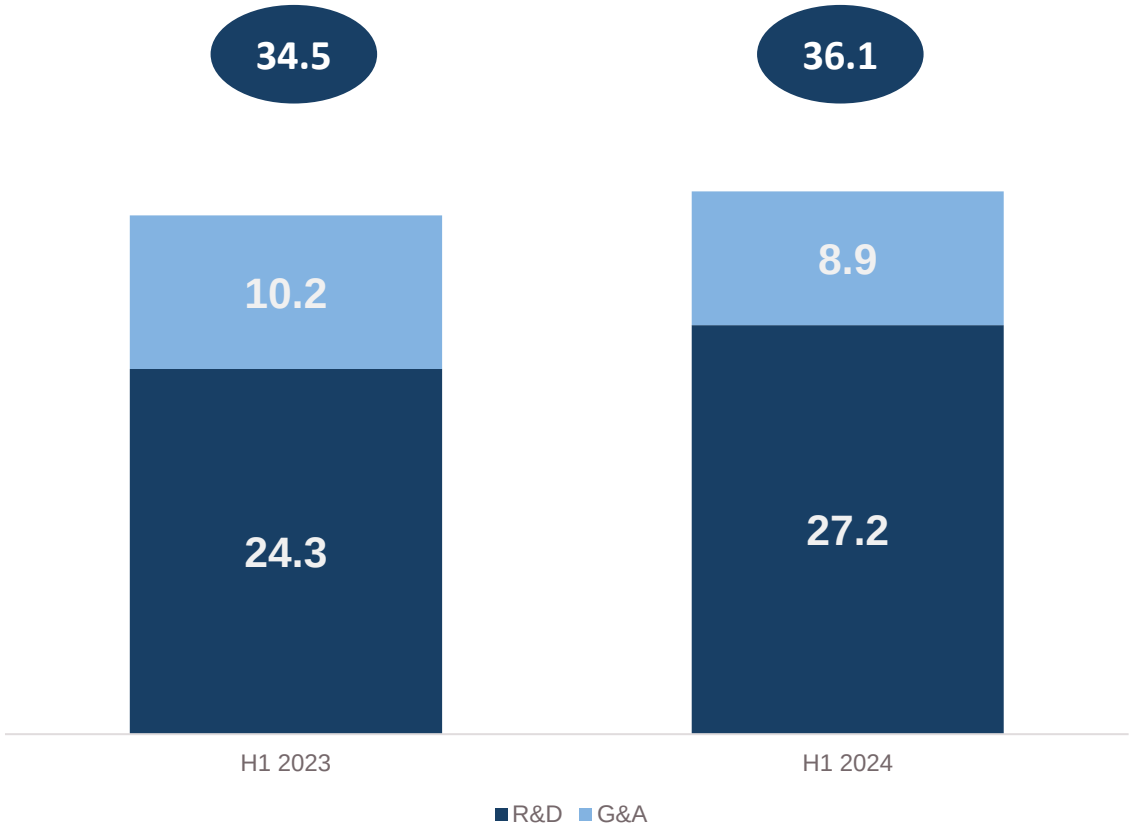
Total expenses of CHF 65–75 million [previous forecast CHF 70–80 million] for FY2024, of which around CHF 8 million is non-cash effective costs

With CHF 159.1 million cash at hand (incl. short-term time deposits) and no debt, the Company is funded into 2027, excluding any potential receipts from R&D partners

Guidance subject to progress and changes of pipeline as well as financial markets

Operating Expenses

in CHF million (incl. depreciation & amortization)

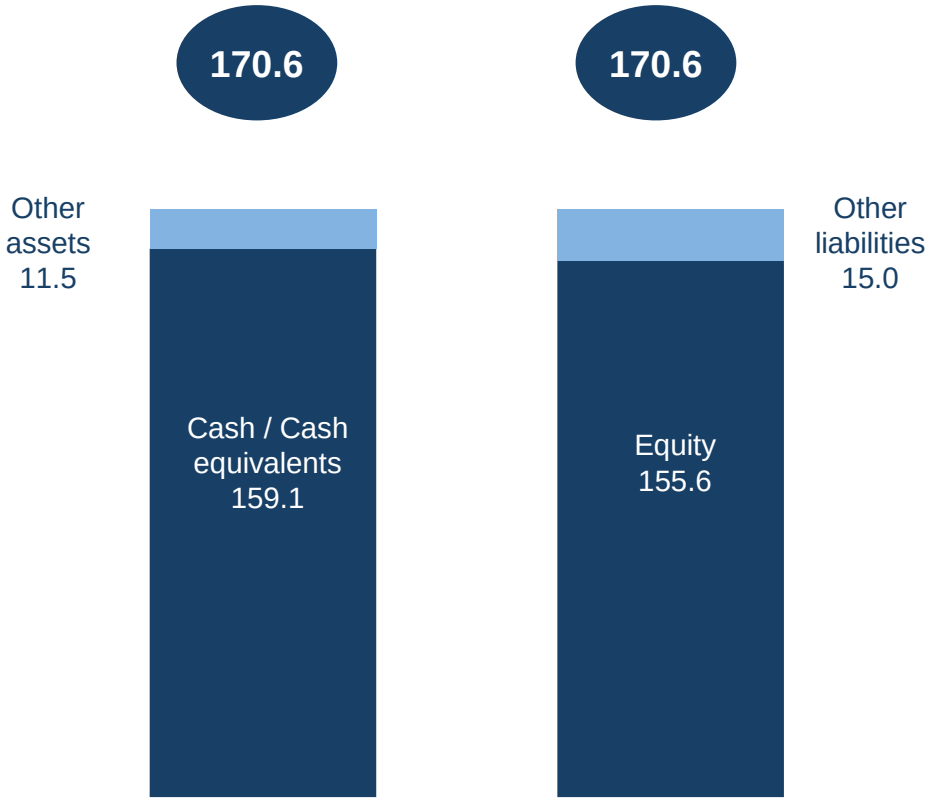


Comments

- In H1 2024 main expense positions and drivers were:
  - CHF 20.1 million people-related expenses
  - CHF 10.9 million external R&D costs
  - CHF 5.1 million other (consulting and professional fees, facility, D&O insurance and general office expenses plus depreciation)
- Included are CHF 3.5 million non-cash effective costs

Balance Sheet

as of June 30, 2024 (CHF million)



Comments

Strong and debt free balance sheet

CHF 159.1 million cash balance (incl. time deposits) – 93% of total assets

Equity base of CHF 155.6 million

CHF 11.5 million of other assets include PPE of CHF 5.0 million, prepayments as well as other receivables for total of CHF 6.5 million.

CHF 15.0 million of other liabilities include CHF 0.6 million in relation to Novartis (revenue to be recognized), CHF 3.0 million lease liability, CHF 1.8 million for accrued employee benefits plus CHF 9.6 million for other current liabilities

Switch-DARPin Platform & MP0621 as first program for HSCT in AML

Targeted and conditional activation of immune cells

Next-Generation Conditioning for HSCT in AML and Beyond

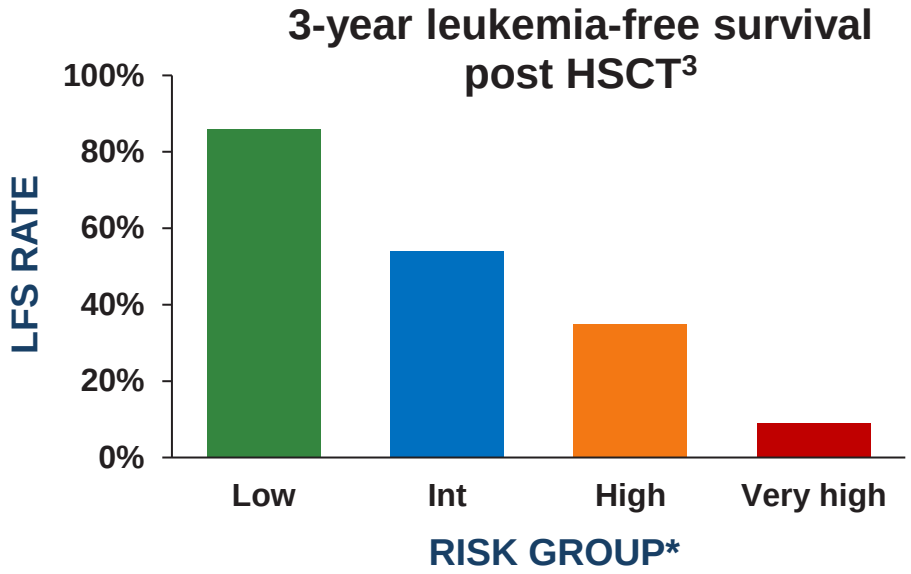
HSCT is potentially curative for AML, however:

Conditioning regimens followed by HSCT do not always kill all AML cells[1,2]

→ Many patients **relapse post HSCT**, especially AML patients with poor cytogenetic risk profile

High-intensity conditioning regimen bears high toxicity[1,2]

→ Many patients receive **reduced intensity conditioning with higher risk of relapse** or do not qualify for HSCT



Opportunity for next-generation conditioning regimen

- Induce deep molecular remission to kill all AML clones, including in patients with poor cytogenetic risk profile
- Limit toxicity to allow access to HSCT for more AML patients, including elderly or frail patients
- Beyond AML: broaden applicability of HSCT for other diseases (e.g., genetic diseases) by improving safety of conditioning regimen

1.Jethava et al. Bone Marrow Transplant 2017;52:1504-11; 2. Döhner et al. Blood 2022;140:1345-77; 3. Moses Murdock et al. Blood 2022;139:3546-57.
*Risk groups defined based on different variables, including age, cytogenetic risk profile, type of and response to conditioning.
AML, acute myeloid leukemia; HSCT, hematopoietic stem cell transplantation; Int, intermediate; LFS, leukemia-free survival.

MP0621: cKit x CD16a x CD47 Switch-DARPin

Our solution for a safe conditioning regimen and long-term disease control

cKit (CD117)

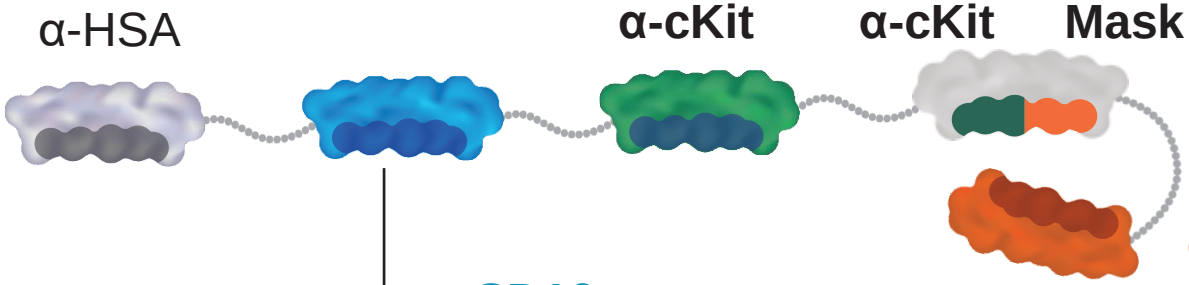
Essential for HSC maintenance and renewal

- **Challenge:** optimal HSC depletion requires both cKit blocking AND potent immune cell mediated killing
- cKit-CD16a-CD47 Switch-DARPin proposed to demonstrate full activity

Switch-DARPin

Prevents peripheral CD47 blockade

- Higher safety
- Expected better biodistribution
- Allows use of Fc-engaging modalities



α-CD16a

Innate immune cell engager

CD16a effector function

- ADCC and ADCP induction
- No impact of inhibitory Fc
- Reduced CRS (compared to TCE)

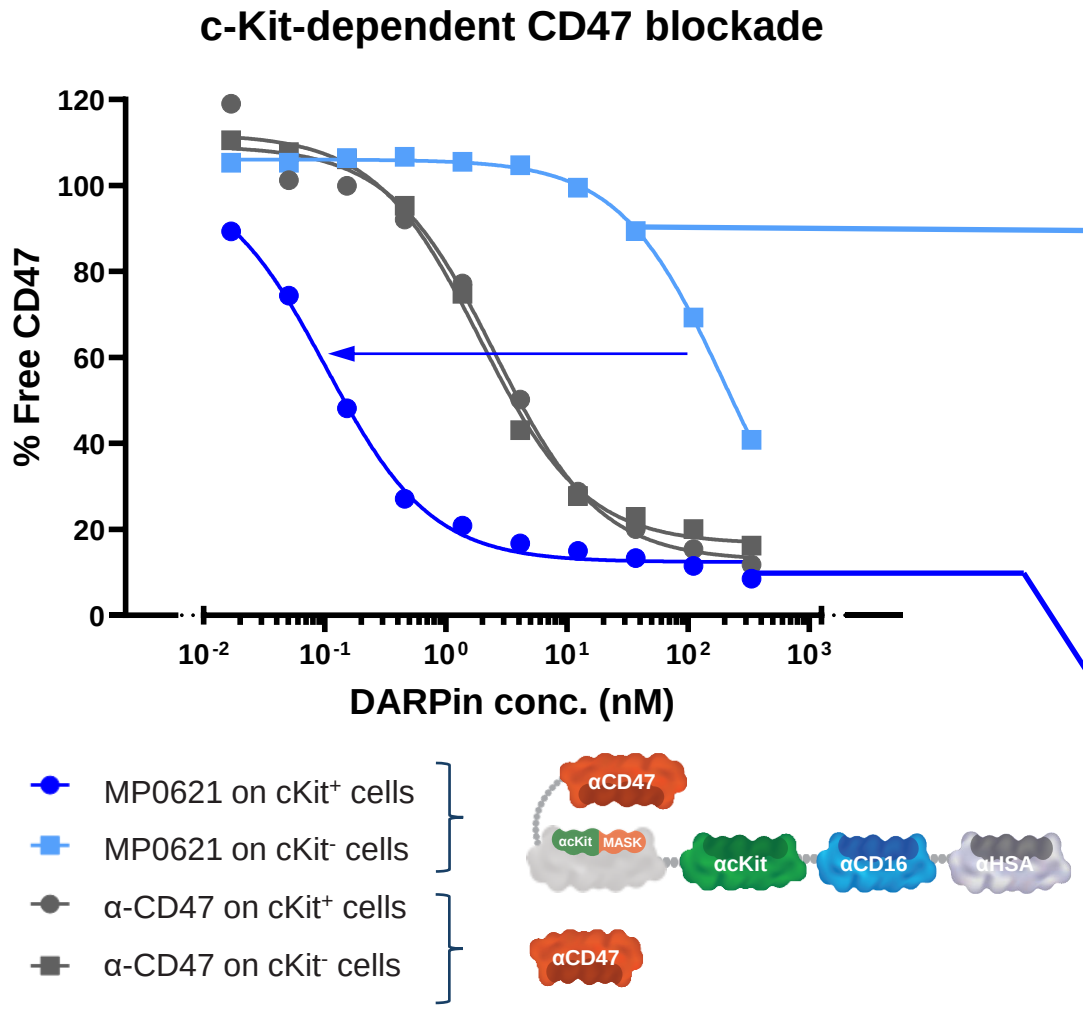
α-CD47

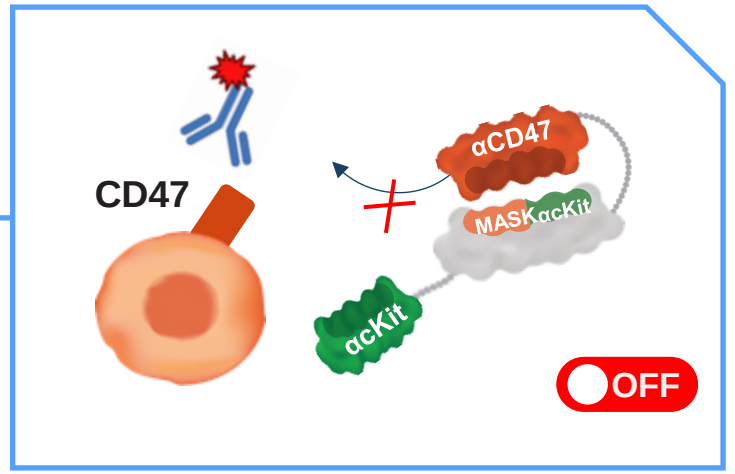
CD47 innate checkpoint blockade

- Block "do-not-eat-me" signal = enhances phagocytosis
- High expression on HSC = target for ADCC and ADCP

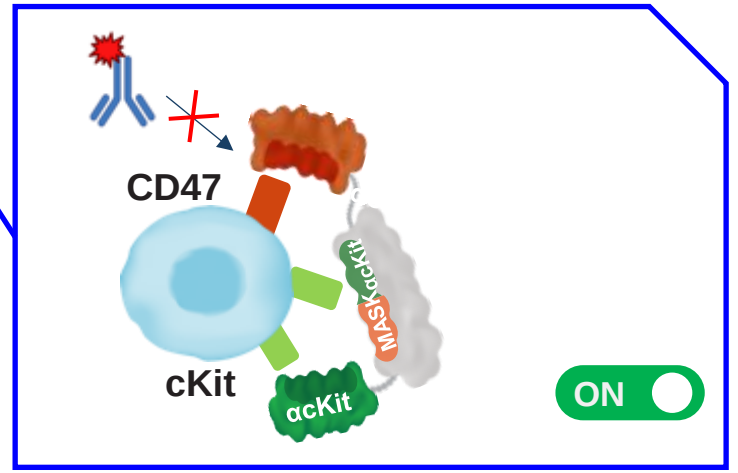
ADCC, antibody-dependent cell-mediated cytotoxicity; ADCP, antibody-dependent cellular phagocytosis; CRS, cytokine release syndrome; TCE, T-cell engager

Switch-DARPin POC - CD47 is Blocked Only on cKit Positive Cells





cKit Negative cells
Switch is OFF
CD47 is NOT blocked



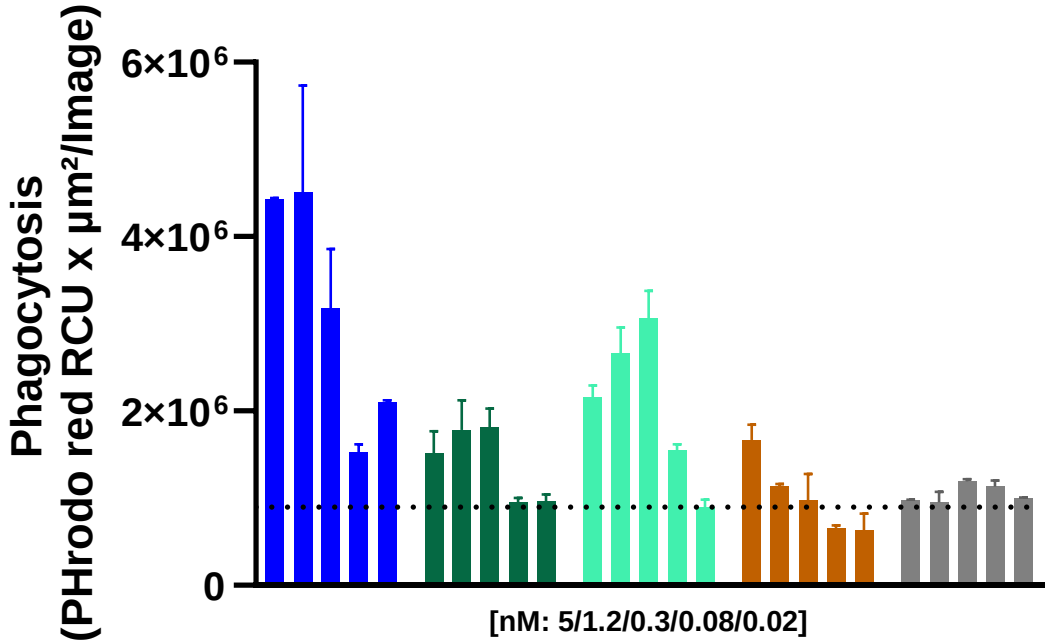
cKit Positive cells
Switch is ON
CD47 is Blocked

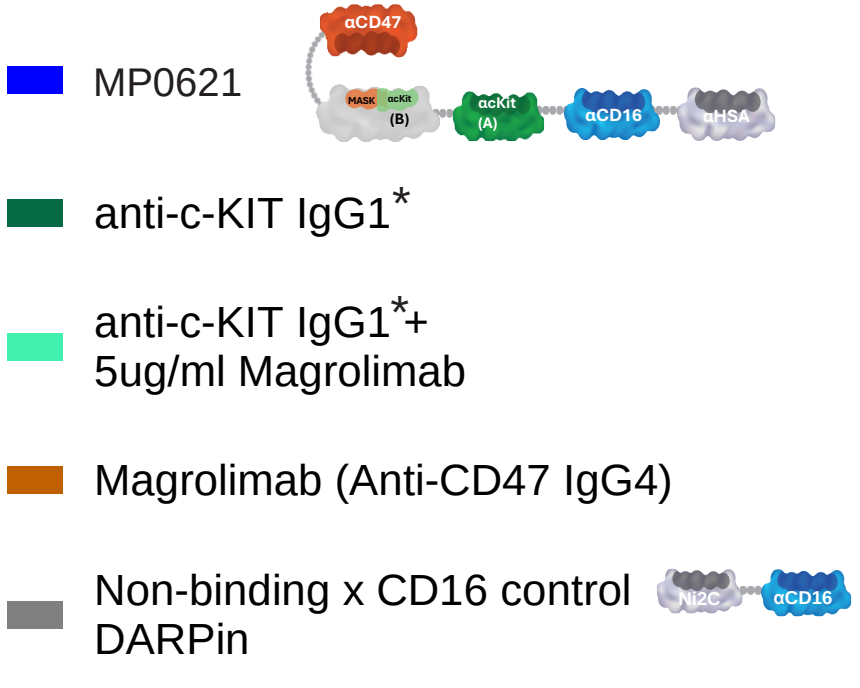
anti-CD47
detection agent

MP0621 shows superior ADCP activity compared to a combo of anti-cKit Ab* + Magrolimab

ADCP assay

M0-like Macrophages + Kasumi-1 AML cell line

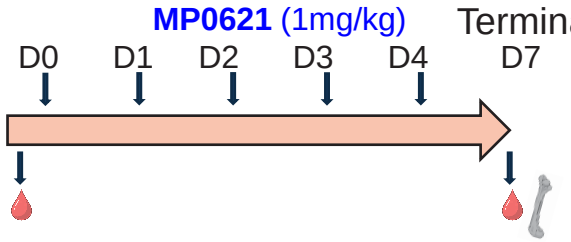




*Fc-active version of JSP-191, reproduced by MP

MP0621 depletes cKit+ cells in the bone marrow without affecting circulating immune cells in humanized mice

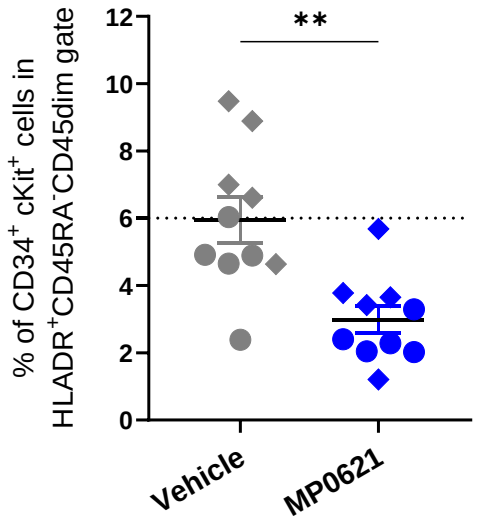
hCD34⁺ NSG mice



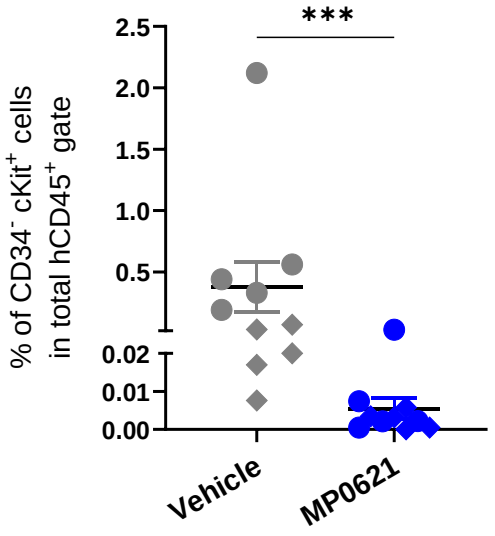
Flow cytometry analysis of blood and BM

Targeted cKit+ cells depleted in bone marrow

hcKit+ hCD34+ cells, incl. HSCs

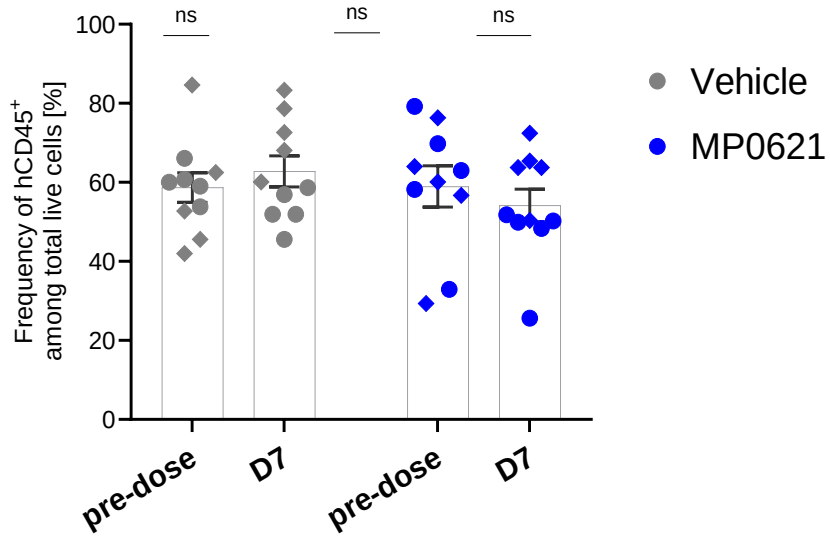


hcKit+ hCD34- cells



Immune cells in blood

hCD45+ immune cells



Link et al, EHA 2024 (poster presentation)

Potential logic-gated Switch-DARPin Concepts

Swiss knives for enhanced immune engagers

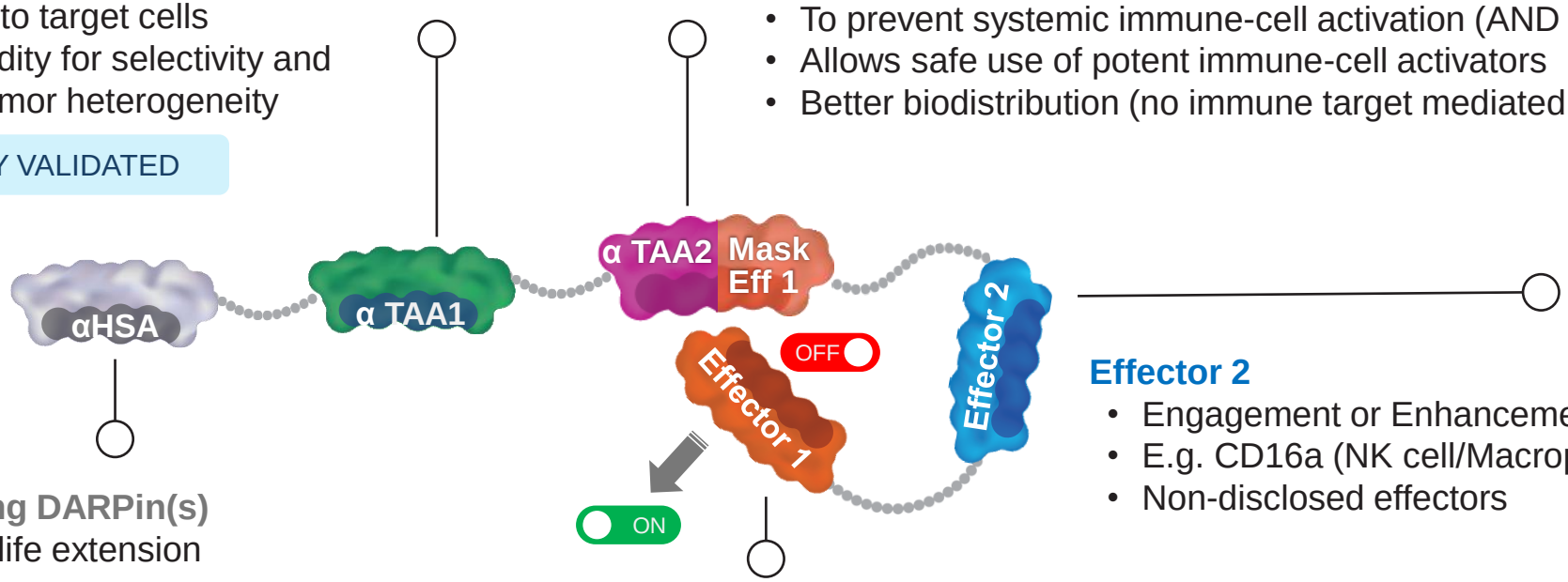
1st Antigen Binder

- Anchoring to target cells
- Adding avidity for selectivity and address tumor heterogeneity

✓ CLINICALLY VALIDATED

2-in-1 DARPin: Exclusive Binding to 2nd Antigen or Masking Effector 1

- To prevent systemic immune-cell activation (AND gate)
- Allows safe use of potent immune-cell activators
- Better biodistribution (no immune target mediated sink)



HSA Binding DARPin(s)

- For half-life extension

✓ CLINICALLY VALIDATED

Effector 2

- Engagement or Enhancement of immune response
- E.g. CD16a (NK cell/Macrophage engagement)
- Non-disclosed effectors

Effector 1 (Switched on/off by Masking DARPin)

- Engagement or enhancement of immune responses
- E.g. CD47 (block don't-eat-me signal)
- E.g. CD3 ("Signal 1" T-cell engagement)

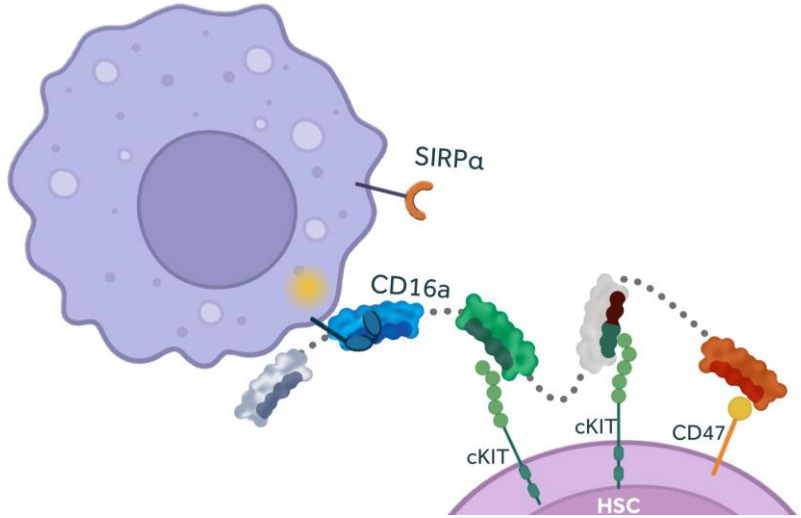
✓ CD3 TCE CLINICALLY VALIDATED

HSA, human serum albumin; NK, natural killer cell; TAA, tumor-associated antigen.

Switch-DARPin & MP0621 – Summary

Summary

- ✓ Dual-binding DARPin (the “Switch”) provides a **logic-gated “on/off” function** to a multi-specific DARPin
- ✓ Conditional, target-specific immune activation demonstrated for **Switch-DARPin platform** *in vitro*
- ✓ MP0621 as first program: a **cKit x CD16a x CD47 Switch-DARPin** as next-gen therapeutic supporting HSCT for AML patients & beyond
- ✓ **Positive preclinical data** presented at EHA 2024: MP0621 effectively depletes targeted cells *in vivo* with a safe profile



Outlook

- Update on MP0621 preclinical studies in H2 2024
- Switch-DARPins for next-generation immune cell engagers, update at SITC 2024

AML, acute myeloid leukemia; HSCT, hematopoietic stem cell; NHP, non-human primate.

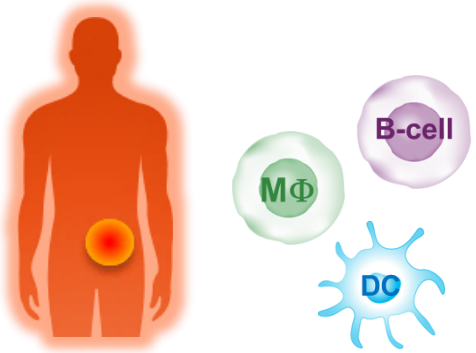
MOLECULAR partners

MP0317

Tumor-localized Immunotherapy

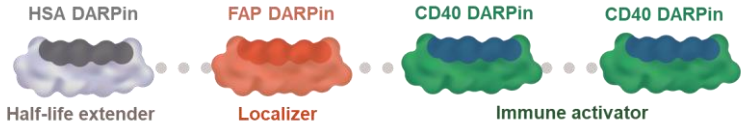
MP0317: Unlocking CD40 Activity Through Local Activation

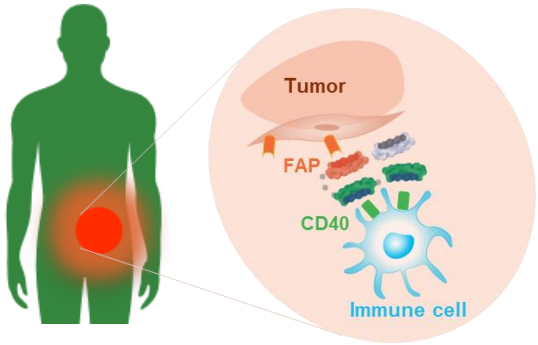
Problem: Toxicity of CD40 Antibodies Has So Far Limited Their Activity



- **CD40 agonists** can activate **B cells, DCs and MΦ** to enhance the efficacy of IO drugs, especially in “cold tumors”
- **Systemic activation of CD40 via mAbs** has been hampered by **significant toxicities,** therefore **limiting their potential of reaching a therapeutically active dose**

Solution: MP0317 – FAP-dependent tumor-localized CD40 activation

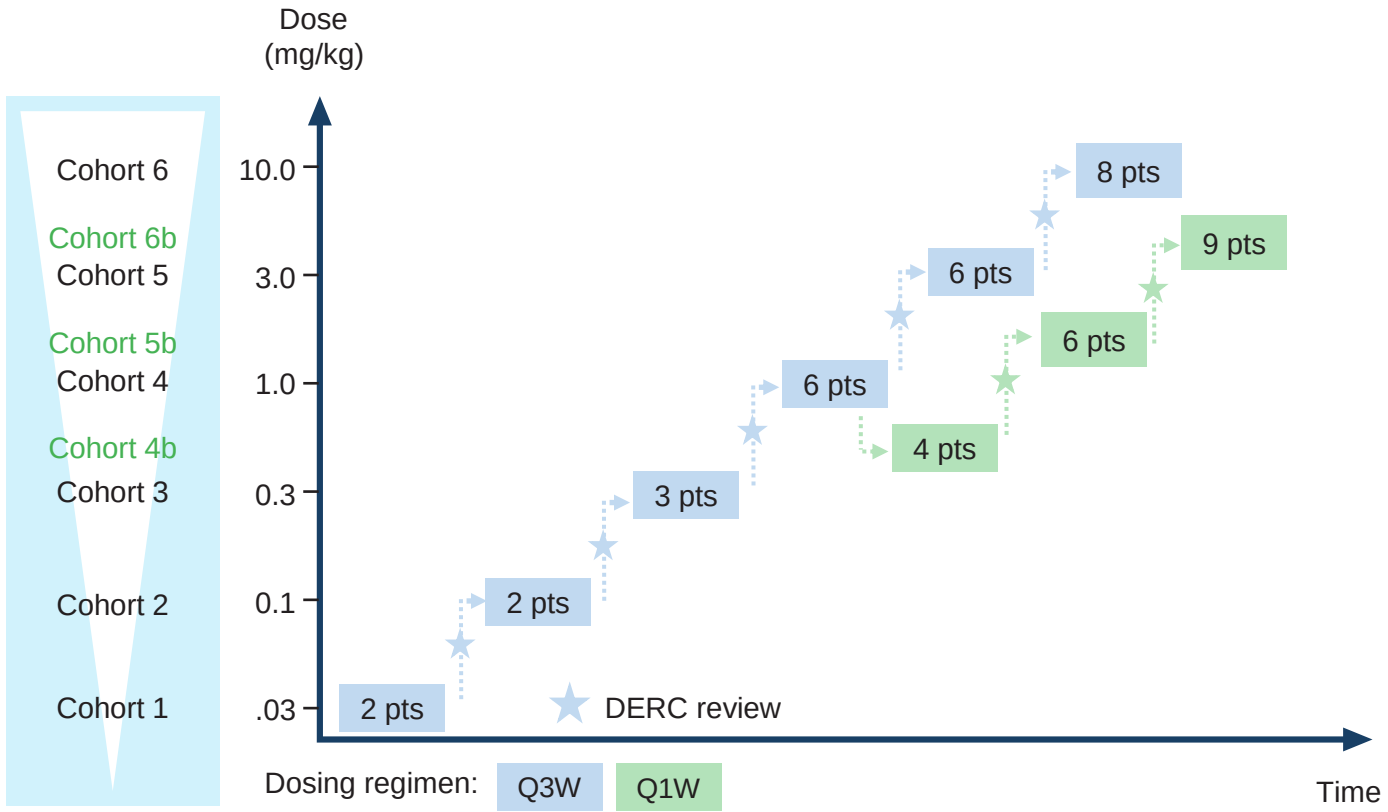




- **FAP is a validated tumor target** overexpressed in at least 28 different cancer types and its expression is not downregulated during disease progression
- **MP0317** is designed to bind tumor-localized FAP and induce CD40-mediated **activation of immune cells in the tumor**, thereby overcoming systemic toxicity and allowing a **wider therapeutic dosing range**

DC, dendritic cell; FAP, fibroblast activation protein; HSA, human serum albumin; MΦ, macrophage; mAb, monoclonal antibody; IO: immuno-oncology.

MP0317 Phase 1 Study Design and Status



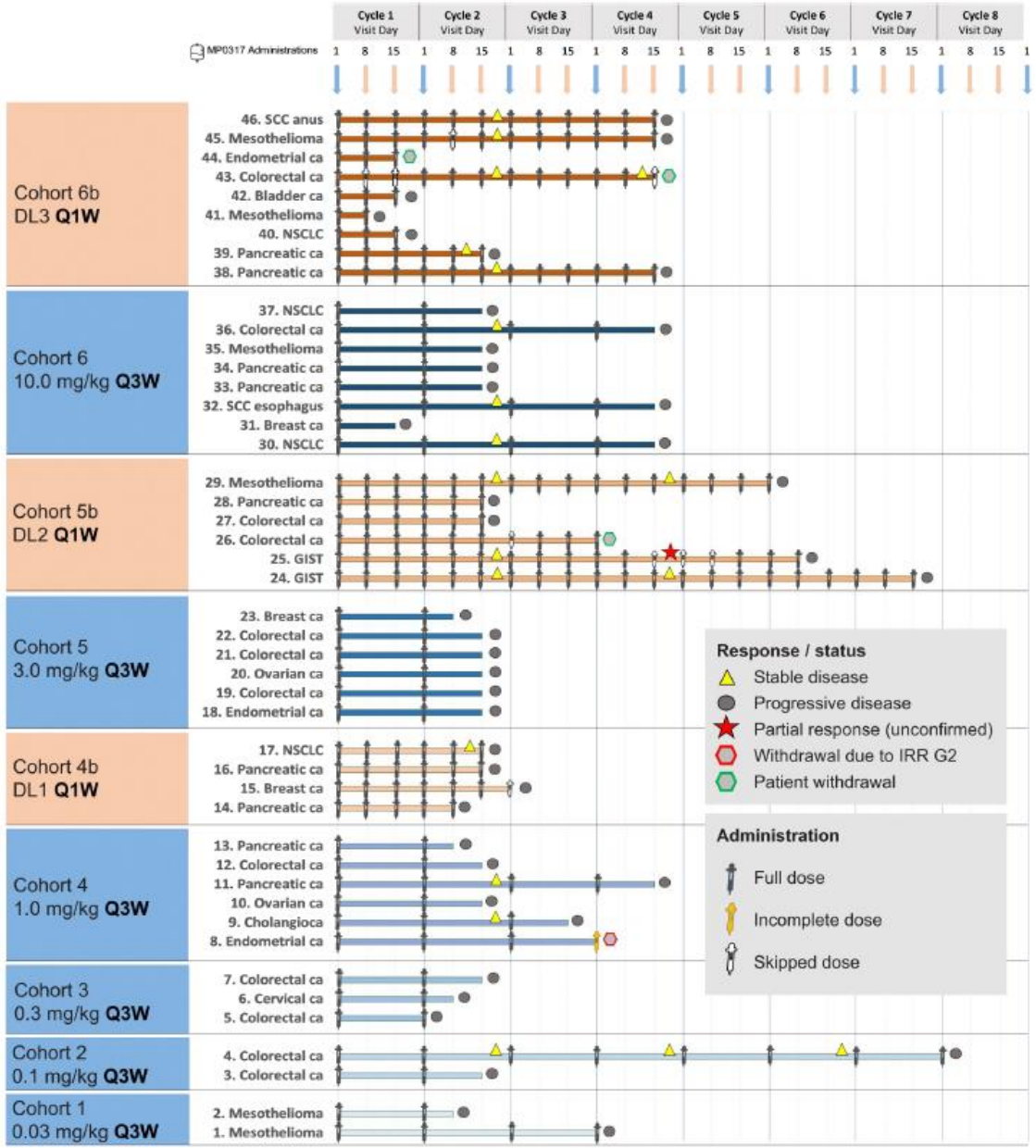
STUDY DESIGN

- **FIH, multi-center, dose-escalation study of MP0317 monotherapy** (9 dose cohorts; Q1W and Q3W dosing; NCT05098405)
- **Eligible patients:** adults with advanced solid tumors
- **Primary objectives:** safety/tolerability, recommended dose for expansion & combination
- **Secondary objectives:** PK, PD, and preliminary antitumor activity
- **Centers:** 4 sites in France and The Netherlands

FIH, first-in-human; PK, pharmacokinetics; PD, pharmacodynamics; Q1W, weekly dosing; Q3W, every-3-weeks dosing.

MP0317 Phase 1 Study Final Data at ASCO 2024

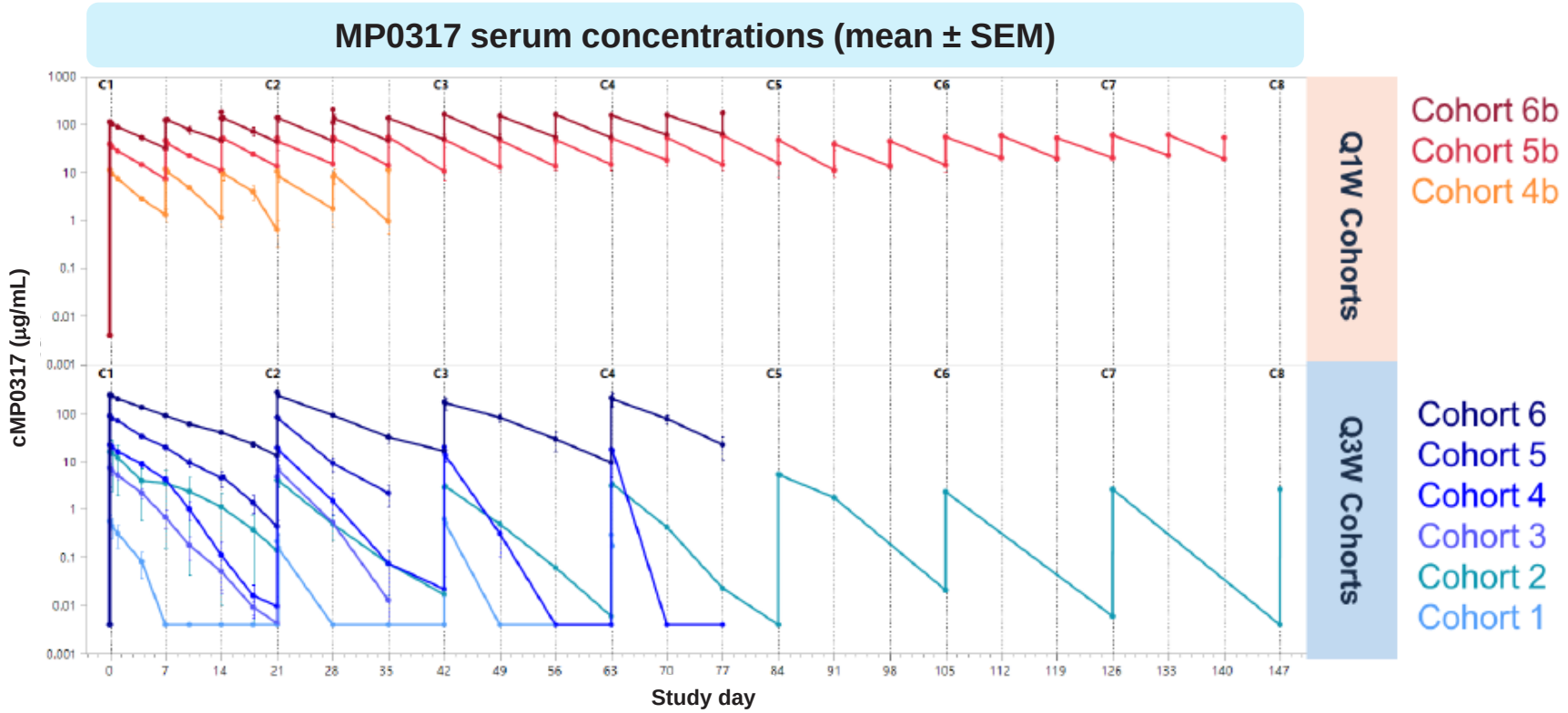
- A total of **46 patients treated** in 9 cohorts
  - Median age (range): 63 years (35–79)
  - ECOG PS 0 / 1, n (%): 22 (48) / 24 (52)
  - Medial prior regimen (range): 4 (1–13)
- **Favorable safety profile** across all tested dose cohorts up to highest planned dose (10 mg/kg)
  - Only 1 patient with a DLT (cohort 6; Grade 3 AST and ALT increase)
  - Most frequent Ars: fatigue and Grade 1–2 IRRs
- **Clinical evidence** of tumor-localized CD40 pathway and immune cell activation, leading to **TME remodeling**



Steeghs et al. ASCO 2024 poster presentation.

ALT, alanine aminotransferase; AR, adverse reaction; AST, aspartate aminotransferase; DLT, dose-limiting toxicity; IRR, infusion-related reaction; PD, pharmacodynamic; TME, tumor microenvironment; Q1W, weekly dosing; Q3W, every-3-weeks dosing.

MP0317 Serum PK is Suitable for Q3 and Q1 dosing



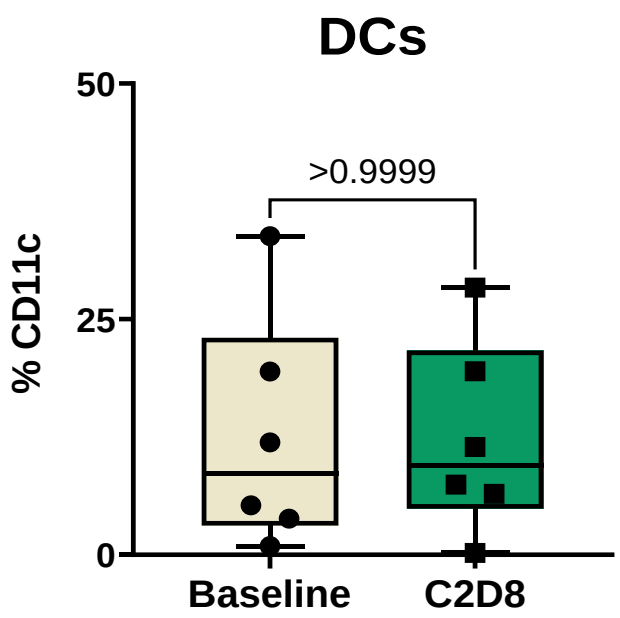
- PK profile is consistent with **half-life extended properties of DARPins**
- **MP0317 exposure shows dose-proportionality** throughout the treatment period analyzed
- **Sustained exposure** is observed at higher doses with both regimens overcoming TMDD and the impact of ADAs

Steeghs et al. ASCO 2024 poster presentation.

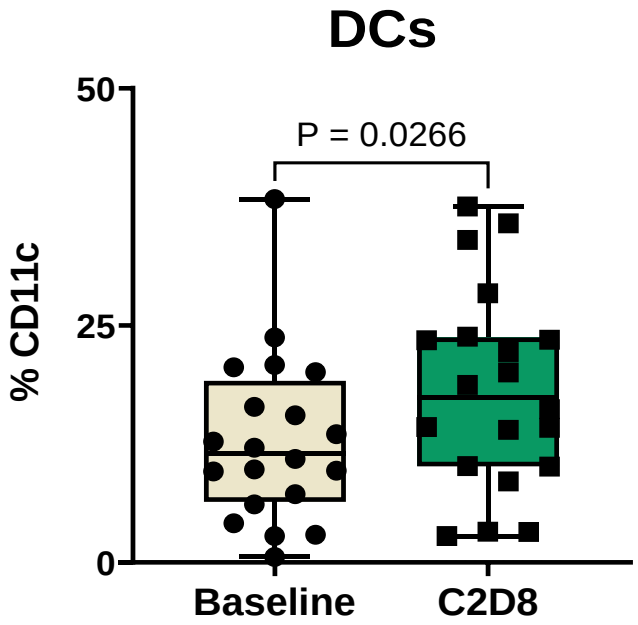
ADA, anti-drug antibodies; PK, pharmacokinetic; Q1W, weekly dosing; Q3W, every-3-weeks dosing; SEM, standard error of mean; TMDD, target-mediated drug disposition.

MP0317 Tumor-localized CD40 Activation and TME Modulation

MP0317 low doses or not detected in tumor (n=6)



MP0317 higher doses and detected in tumor (n=20)



Evaluable paired tumor biopsies from treated patients were analyzed with mIF.
Low doses: ≤0.1mg/kg; higher doses: ≥0.3mg/kg. Upper (75%), median, and lower (25%) percentiles are indicated. P-values are derived from paired ranked sum Wilcoxon test.

- Bulk RNA sequencing in paired tumor biopsies (n=19) shows that MP0317 presence tends to be associated with:
  - Increase in abundance of plasma and T follicular helper cells
  - DC maturation gene signature
  - IFNγ downstream activation gene signature scores
- Increases observed in CXCL10 serum levels corroborate these findings

Steeghs et al. ASCO 2024 poster presentation.

DC, dendritic cell; mIF. multiplex immuno-fluorescence; TME, tumor microenvironment.

MP0533

Tetra-specific T-cell Engager for AML

Patients with AML Have a High Unmet Medical Need

69 YEARS OLD

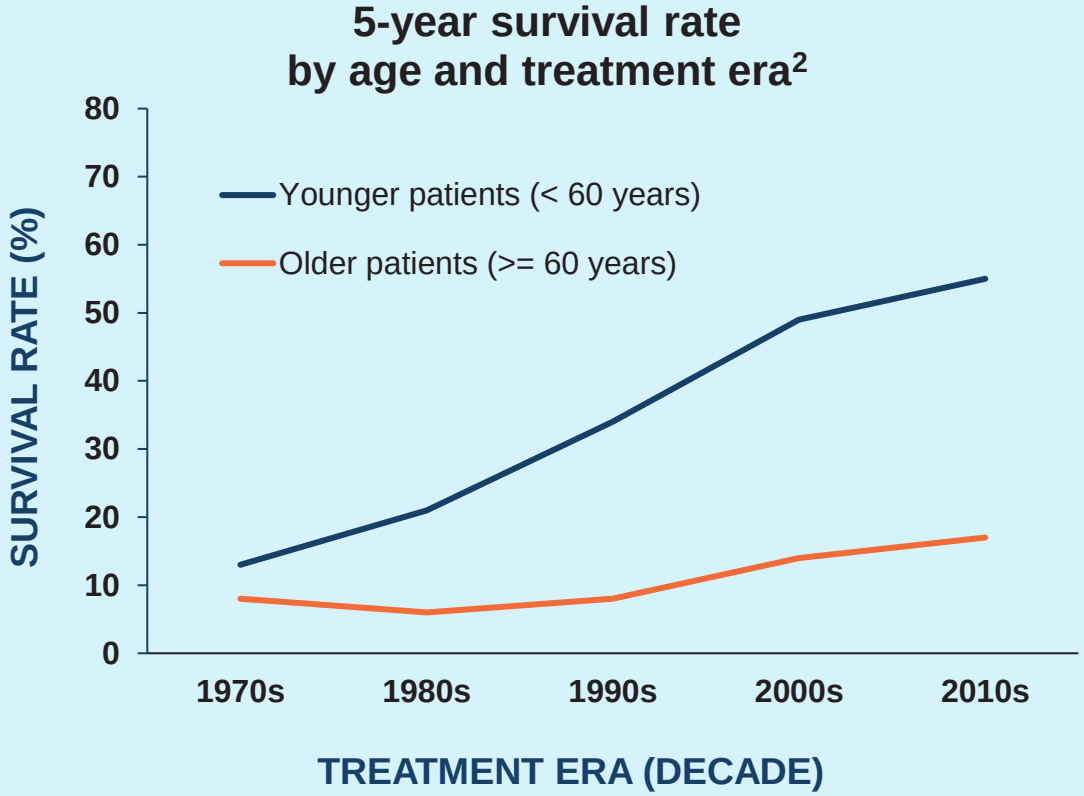
Median age of AML patients at diagnosis[1]

31.7%

Overall 5-year survival rate[1]

Despite 50 years of progress, elderly and frail patients are often not eligible for high-intensity conditioning and HSCT, and thus have limited treatment options and poor survival outcomes[2]

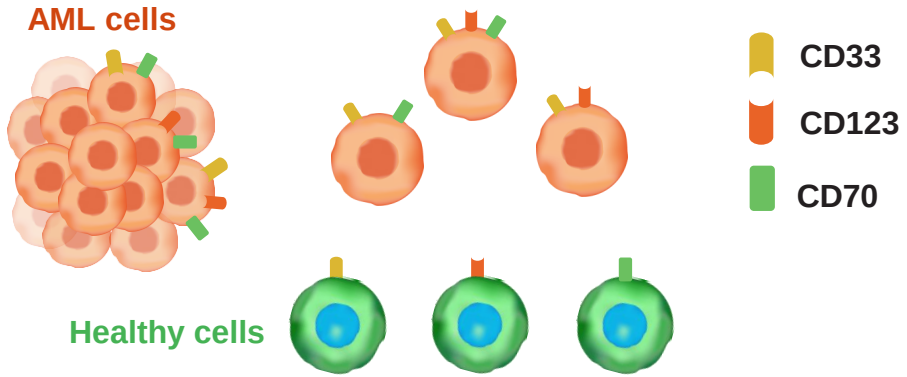
- Lack of broad and clean AML surface targets
- Risk of clonal escape even after high-intensity conditioning/HSCT



1. https://seer.cancer.gov/statfacts/html/amyl.html (based on data: 2016-2020; accessed 3 Jan 2024)
2. Kantarjian HM, *et al*. *Clin Lymphoma Myeloma Leuk* 2021; **21:**580–597.
AML, acute myeloid leukemia; HSCT, hematopoietic stem cell transplantation.

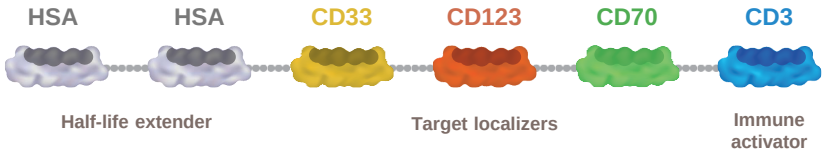
MP0533: Avidity-Driven Selectivity for Cancer Cells in AML

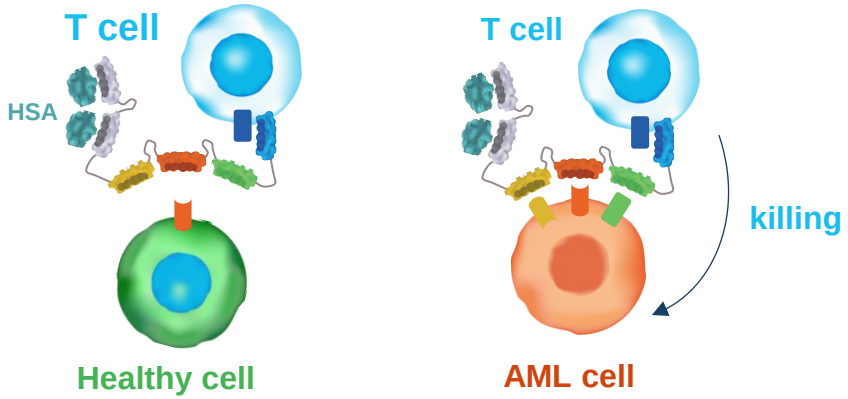
Problem: AML tumor-associated antigens are expressed on healthy cells



- **AML remains a deadly disease** and persistence of **leukemic stem cells (LSCs)** drives relapse
- **AML cell population is heterogeneous**: individual AML blasts and LSCs lack a clean target. AML cells can be differentiated from healthy cells (e.g. HSCs) by their **co-expression of specific targets** (e.g. CD33, CD123, CD70)

Solution: MP0533 – Avidity-driven selectivity and killing by T cells





- MP0533 is designed to induce **T cell-mediated killing preferentially when two or three target antigens (CD33, CD123, CD70) are co-expressed**
- MP0533 is hypothesized to preserve healthy cells hence **opening a therapeutic window**
- MP0533 has the potential to kill all AML cells (blasts and LSCs) despite heterogeneity, ensuring **long term disease control**

AML, acute myeloid leukemia; HSC, hematopoietic stem cell; HSA, human serum albumin.

An optimized dosing schedule of MP0533 is pursued to overcome CD123 and CD33-driven antigen sink

→ Achieve early and maintain consistently therapeutic drug levels in AML/MDS patients