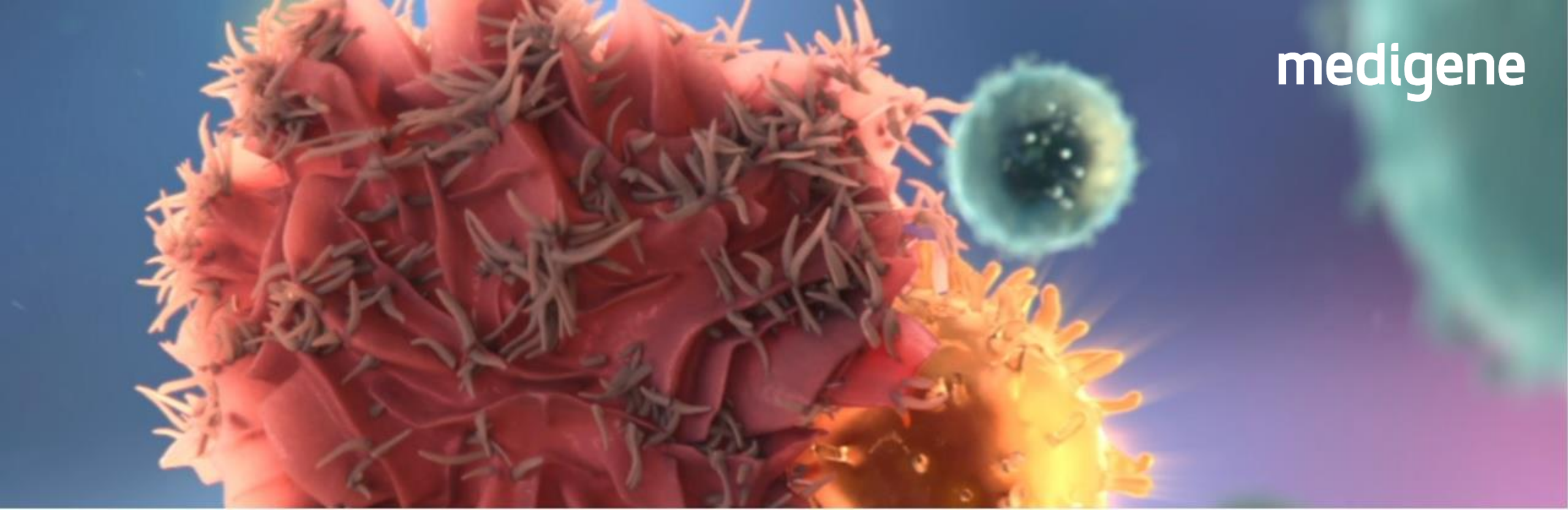

6-Months Report 2020 Conference Call

7 August 2020

Forward looking statements disclaimer

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Key investment highlights

- Innovative T cell-based immunotherapies with broad cancer applicability
- Novel DC vaccine focused on inducing T cell responses to cancer
- Existing partnerships & global business development opportunities
- Continuous technology innovation and growing IP portfolio
- Management team with complementary experience and skills

Prof. Dolores J. Schendel
CEO & CSO

Key information

Company

- Martinsried, near Munich, Germany
- ~140 employees
- ~€39.9 m cash*

Listing

- Frankfurt Stock Exchange (MDG1)
- ~24.6 m shares outstanding
- ~€130 m market cap**

COVID-19 Situation Update

- **Personnel**
  Work from home and on-site staffing, no infection to date
- **Partner Programs**
  Uninterrupted R&D activities
- **Clinical Trials**
  No delays in patient recruitment, manufacturing, regulatory

Outlook

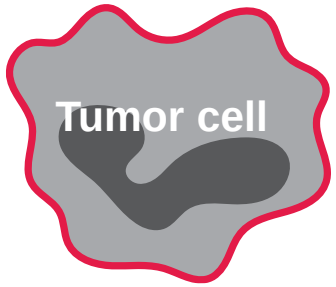
- MDG1011 Phase I/II trial dose escalation readout by end Q1 2021
- Ongoing MDG1021 Phase I trial in patients post allo-HSCT with relapsed hematological cancers
- MAGE-A4 TCR-T to enter Phase I (bluebird bio)
- DC vaccine detailed data Phase I/II results in H2 2020
- Publication of preclinical data at conferences

*As of 30 June 2020; **At closing 4 August 2020; HSCT: Hematopoietic stem cell transplantation

TCR-T vs. CAR-T cells

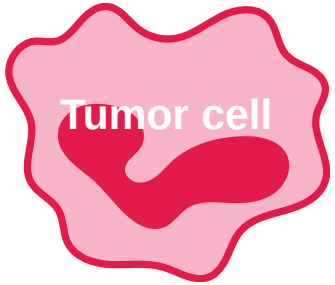
TCR-Ts offer more target options, power, sensitivity and control

Chimeric antigen receptor (CAR)



- **Surface** proteins only
- **~30%** of human proteome as targets
- **High target density per cell required** for effective CAR-T triggering
- Often **toxicity** against healthy cells (e.g. B cells)

T cell receptor (TCR)



- Both **surface & intracellular** proteins
- **100%** of human proteome as targets
- **Very low target density per cell sufficient** for effective TCR-T triggering
- Many targets available with great **tumor cell – healthy cell discrimination**
- HLA-dependent recognition adds **specificity**

HLA: Human leukocyte antigen, molecule that presents peptides to be recognized by TCRs

Innovation & technology differentiation

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Safety & activity

- Natural TCRs without mutations for higher safety
- PD1-41BB switch receptor to enhance TCR-T function
- Controllable TCR through on-off switch (iM-TCR)
- Suicide switch studied for drug product elimination

Diversity & specificity

- Multiple epitopes for one HLA
- Multiple HLAs for one antigen
- HLA class I and class II epitopes
- Epitope safety via *in silico* and *in vitro* tools

Drug product process development

- Monoclonal transgenic TCR-Ts
- Steppingstones to full automation and fully closed process
- Proprietary and evolving GMP production process
- Proprietary SIN-RV vector system

Optimization towards next-generation TCR-Ts

PD-1: Checkpoint inhibitor; 4-1BB: Activator of T cells; iM-TCR: inducible Medigene TCR; HLA: Human leukocyte antigen, molecule that presents antigens to TCRs; SIN-RV: Self-inactivating retrovirus

Growing immunotherapy pipeline

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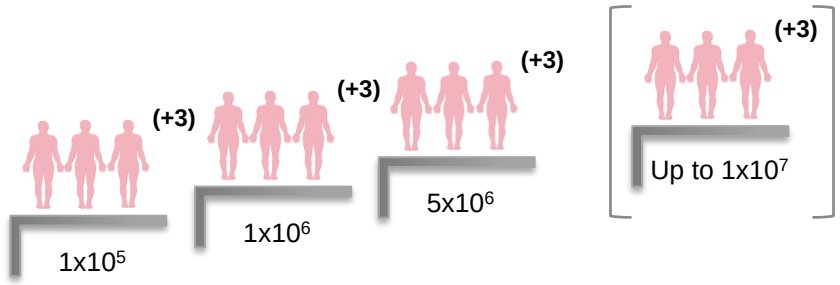
	Project	Target	Preclinical	Phase I	Phase II	Partner
TCR-T	**MDG1011**	AML, MDS (PRAME)	■	■	■	
	MDG1021	Post-HSCT relapse (HA-1)	■	■		
	MDG10XX	Solid tumors (undisclosed)	■			
	bluebird bio	Undisclosed (MAGE-A4)	■	■		bluebirdbio recode for life
	Cytovant (CVT-TCR-01)	Synovial sarcoma, MM, solid tumors (NY-ESO-1)	■			ROIVANT SCIENCES
DC	**DC vaccine**	AML (WT-1 / PRAME)	■	■	■	
	Cytovant (CVT-DC-01)	AML (WT-1 / PRAME)	■			ROIVANT SCIENCES

PRAME, HA-1, MAGE-A4, NY-ESO-1, WT1: Tumor antigens;

■ Completed; ■ Ongoing; ■ In preparation

MDG1011 – Phase I/II trial design

Phase I



Single defined dose of TCR-transduced T cells/kg

- Open-label, multi-center study, 3+3 dose escalation design, up to 4 cohorts
- Primary endpoints: Safety at 3 months and MTD
- Dose ranges from 100,000 to 10,000,000 TCR-transduced T cells per kg body weight
- Single administration via i.v. infusion
- DSMB review after each dose cohort

Phase II

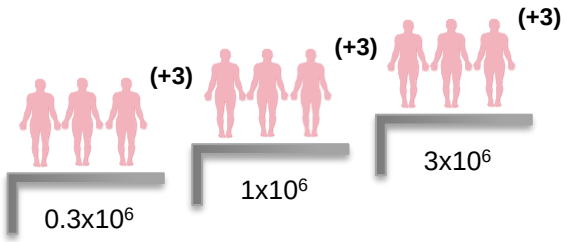
40 treated + 40 control patients

- Approx. 2 indications to be carried into Phase II
- 40 HLA-A*02:01 and PRAME positive patients to be treated with MDG1011 (20 per indication)
- 40 HLA-A*02:01 negative and PRAME positive patients serve as control groups (20 per indication)

MTD: Maximum tolerated dose; DSMB: Data safety monitoring board; https://www.clinicaltrialsregister.eu/ctr-search/trial/2017-000440-18/DE

MDG1021 – Phase I trial design

Dose-escalation portion



Patients with relapsed or persistent hematogical malignancies after allo-HSCT w/wo DLI

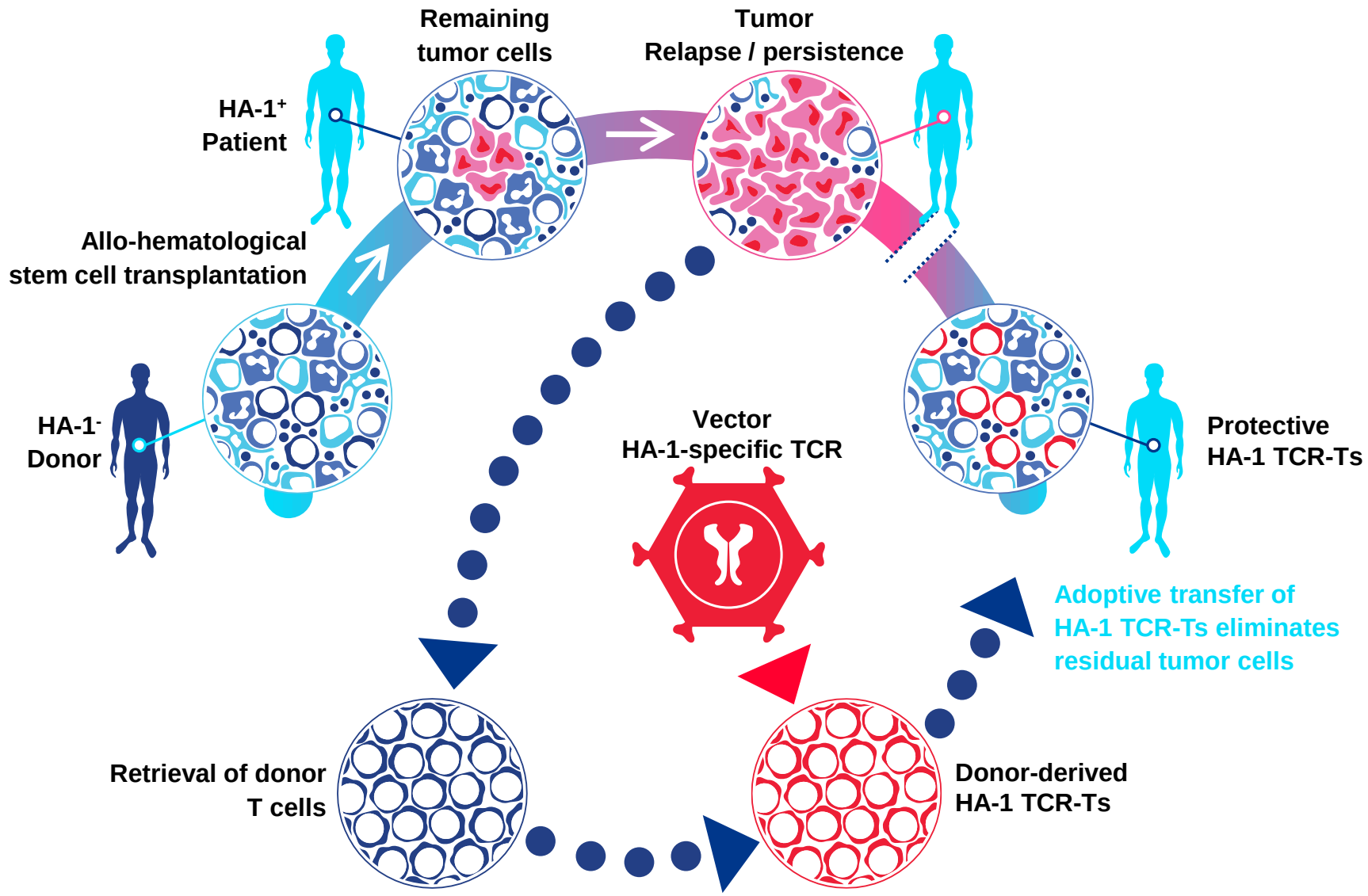
- 3+3 design with at least 9 patients
- Dose 1: 0.3x10^6 HA-1 TCR-transduced T cells per kg body weight
- Dose 2: 1x10^6 HA-1 TCR-T cells/kg
- Dose 3: 3x10^6 HA-1 TCR-T cells/kg
- Assessment of safety, feasibility and preliminary efficacy

Dose-expansion portion

- 20 patients in an expansion group at the selected dose of MDG1021

DLI: Donor lymphocyte infusion

MDG1021 – Treating relapse or persistence after HSCT



Partnerships validate Medigene's technologies

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bluebird bio

- 6 TCR discovery projects for defined antigen/HLA combinations
- **Worldwide** development and commercial rights and exclusive license for IP
- **Clinical development of first TCR lead for MAGE-A4/HLA-A2 expected to start in 2020**
- MDG eligible for R&D funding, development, regulatory and sales milestones and tiered, up to double digit % royalties

6 TCRs

Roivant / Cytovant

- Research-stage TCR specific for the target NY-ESO-1; clinical indications chosen
- **DC vaccine program for AML**
- Discovery projects for 2 further TCRs tailored for Asian population
- **Regional** license rights for **Greater China, South Korea and Japan**
- MDG eligible for R&D funding, development, regulatory and sales milestones and tiered, up to double digit % royalties

DCs and 3 TCRs

Financial review and outlook

	H1 2019	H1 2020	Guidance 2020
Total revenues	€5.6 m	€3.7 m	€7-9 m
R&D expenses	€10.9 m	€11.7 m	€24-29 m
EBITDA loss	€8.5 m	€11.3 m	€19-27 m

- Liquid assets and time deposits as of 30 June 2020 amounted to ~€39.9 m
- Medigene has sufficient financial resources to fund business operations until the end of 2021
- No milestone payments or cash inflows are included from existing or future partnerships or transactions

Key development milestones in 2020

- **Clinical trials**
  - ✓ Topline data on Phase I/II DC vaccine trial (2-years-treatment)
  - ✓ H1 2020 entered Phase I clinical development of MDG1021 in post-HSCT relapsed patients
  - Q4 2020 complete dosing of three dose cohorts in MDG1011 Phase I dose escalation trial in AML and MDS
  - bluebird bio to start Phase I clinical trial of MAGE-A4 TCR

- **Pre-clinical**
  - ✓ Characterization of new TCR candidates
  - Optimization of future TCR therapies for solid tumors

- **Business development**
  - Continue pre-clinical development with bluebird bio and Roivant / Cytovant

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Thank you – Q&A

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