



medigene

# ANNUAL REPORT 2016

**PRESS & ANALYST CONFERENCE CALL**

**MARTINSRIED, MARCH 23, 2017**

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Dr. Thomas Taapken, CFO

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## "Safe Harbor" Statement

This presentation contains forward-looking statements, which are based on our current expectations and assumptions.

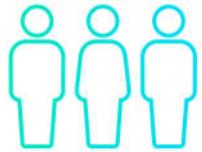
Due to various risks and uncertainties including changes in business, economic competitive conditions, regulatory reforms,

foreign exchange rate fluctuations and the availability of financing, actual results, performance or achievements could differ materially from those included in the forward-looking statements. These and other risk factors are discussed in the Company's public reports. The company does not assume any obligations to update or revise any of these forward-looking statements, even if new information becomes available in the future.

# Highlights 2016

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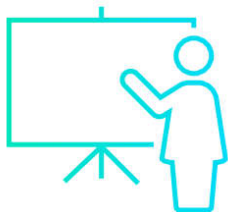
## Highlights of a successful year 2016



- CFO and three Senior Vice Presidents added to the management team; scientific team expanded



- TCR deal with bluebird bio, US\$ 15m upfront, milestone payments up to US\$ 1bn and royalties



- Innovation: new approach presented to develop TCRs which target neoantigens, additional patents granted for DCs and TCRs



- Start of Phase II of ongoing DC vaccine clinical study



- Cooperation with Max Delbrück Centre and Charité Hospital for first clinical TCR study in Germany (IIT, BMBF funded)

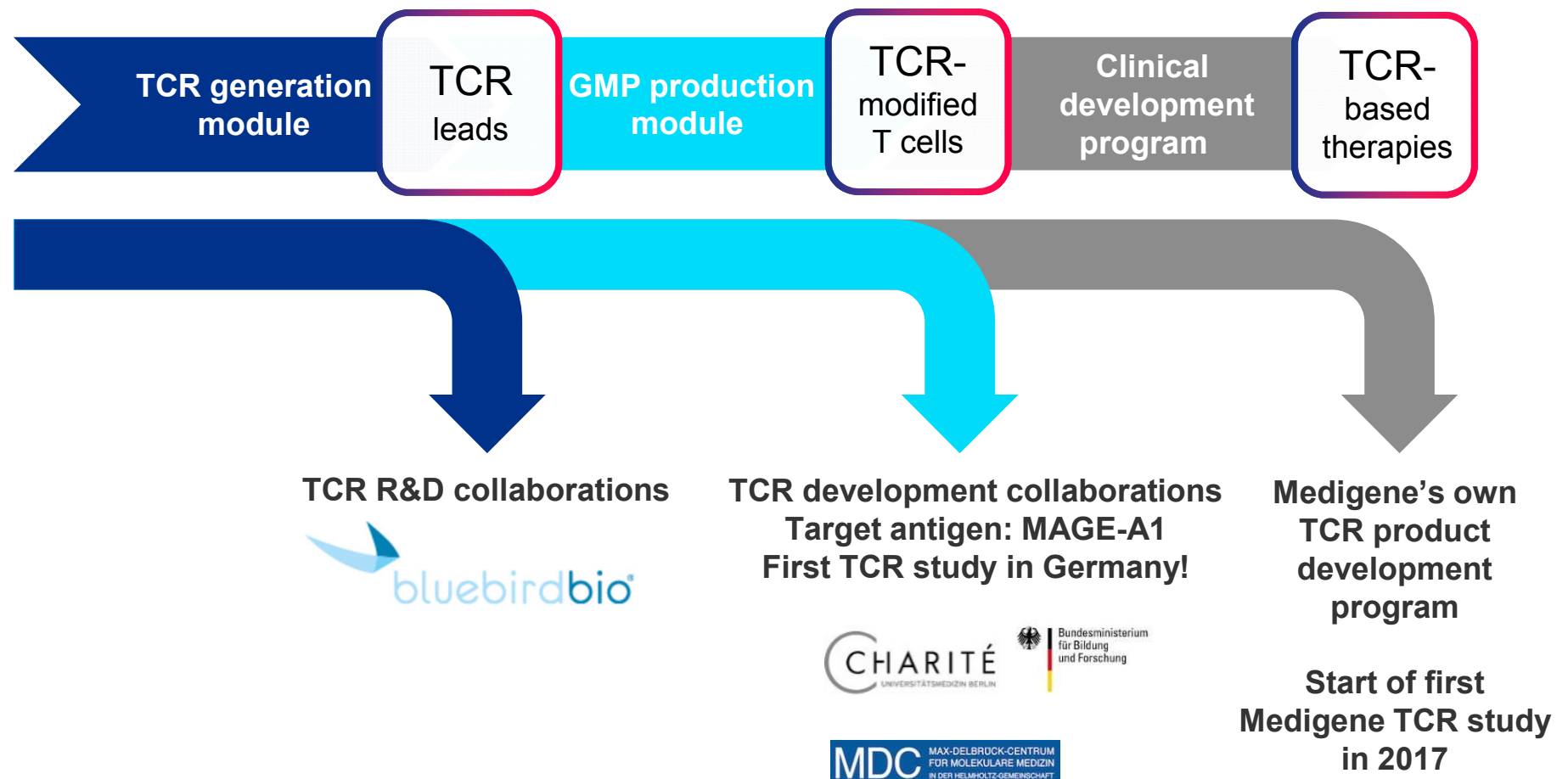
# Immunotherapy Programs Progress and Outlook

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# Medigene's first Phase I/II TCR study to be started H2 2017

- **Target:**
  - PRAME (**P**referentially Expressed **A**ntigen in **M**elanoma)
  - PRAME is a well characterized tumor antigen overexpressed in multiple hematological and solid tumor indications
- **MDG1011:**
  - T cells expressing a HLA-A2:01 restricted T-cell receptor (TCR) specific for PRAME
  - Has demonstrated favorable preclinical safety and efficacy
- **Clinical trial outline, pending regulatory discussion and approval:**
  - Planned is a combined Phase I/II safety and feasibility
  - Disease indications are acute myeloid leukemia (AML), myelodysplastic syndrome (MDS), multiple myeloma (MM); all in advanced stages
  - Phase I part: dose escalation, testing up to 4 dose cohorts in a 3+3 design
  - Phase II part: will expand the dose cohort from Phase I and include a prospective control group; could potentially be extended in size and into further malignancies

# Value creation along the TCR development chain



## Bluebird deal validates TCR technology

- Deal structure:
  - Upfront payment of US\$ 15 million
  - R&D funding
  - Potential preclinical, clinical and commercial milestone payments up to US\$ 1 billion
  - Royalties on net sales
- T cell receptor (TCR) therapeutic candidates against four targets
- Medigene generates and delivers TCRs to bluebird bio
- Joint preclinical development of all product candidates
- bluebird bio gains worldwide development and commercial rights and exclusive license for IP covering the TCRs
- Medigene retains all rights for its proprietary TCR development programs



# Diverse target antigens can be used to select DC vaccine antigens and TCR targets

## Virus-derived antigens:

**Example:** EBV, HPV

**Indication:** lymphomas, specific cancers

## Differentiation antigens:

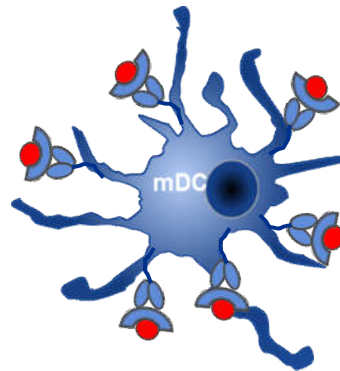
**Example:** gp100, tyrosinase, PSA

**Indication:** melanoma, prostate cancer

## Minor histocompatibility antigens:

**Example:** H-Y, HA-1,-2, -3,...

**Indication:** stem cell transplantation,  
donor lymphocyte infusion



## Overexpressed antigens:

**Example:** survivin, hTERT

**Indication:** most tumors

## Neoantigens (mutations):

**Example for shared antigens:** K-ras, bcr-abl

**Indication:** selected tumors

**Example for individual antigens:** patient-defined

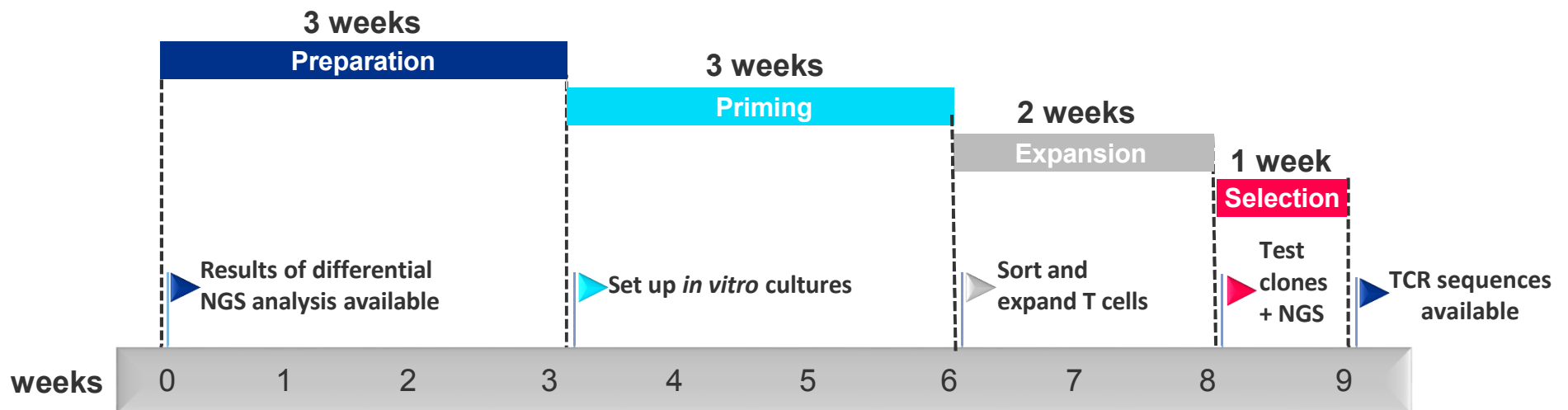
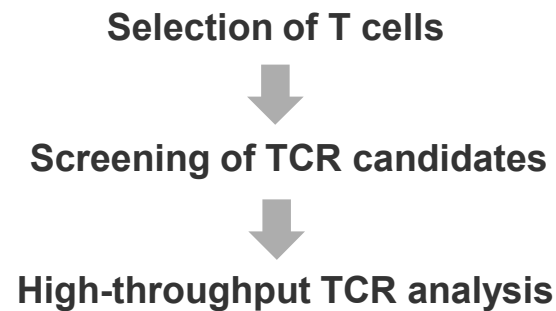
**Indication:** most tumors

## Cancer-testis antigens:

**Example:** MAGE-A1, PRAME, NY-ESO-1

**Indication:** hematological malignancies,  
diverse solid tumors

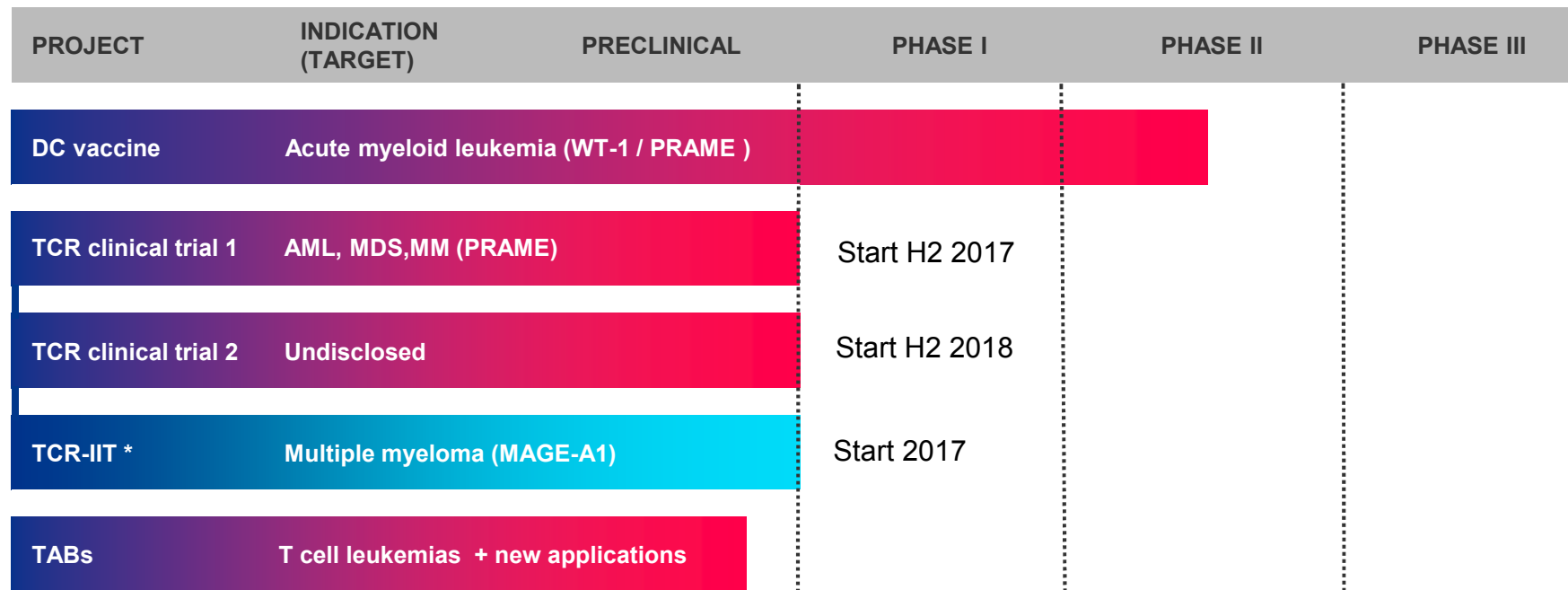
# Proof-of-Technology: Medigene utilizes automation for high-throughput identification of lead candidates



## Expansion of TCR team and platform technologies

- Increasing the capacity to generate TCRs for our in-house pipeline and for external partners
- Expanded TCR team will drive innovation and further broaden our own TCR technologies
- bluebird will reimburse the costs of the personnel working within the framework of the cooperation agreement

# Progress of immunotherapy pipeline



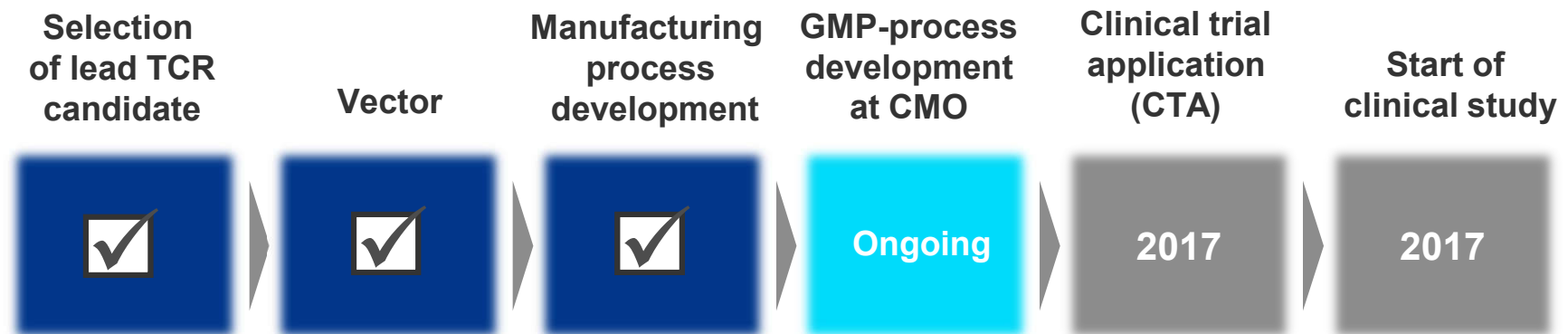
\* Investigator-initiated trial (IIT) of a publicly funded collaboration between MDC, Charité and Medigene.

Additional IITs utilizing Medigene’s DC vaccine technology are ongoing at LMU Munich (Phase I/II in AML) and Oslo University Hospital (Phase II in prostate cancer)

## DC trial in AML: Phase II part started after positive DMSB opinion

- Trial design:
  - **Phase I/II:** open-label, prospective, non-randomized trial
  - **20 AML patients:** 6 phase I + 14 phase II, complete remission after chemotherapy, not eligible for allo-transplantation
  - Patients selected with AML expressing the vaccine antigens: **WT-1** with or without **PRAME**
  - **Continuous vaccination for 2 years** or until progression/ death
  - Primary objectives: **feasibility** and **safety**
  - Secondary objectives: overall survival (**OS**), progression free survival (**PFS**), control of minimal residual disease (**MRD**), time to progression (**TTP**), induction of **immune responses**
- ClinicalTrials.gov Identifier: NCT02405338

## Preparations for first company-sponsored TCR based clinical study



### Medigene's first company-sponsored trial (2017):

- Viral vector production secured at EUFETS GmbH
- EUFETS selected as commercial manufacturing partner
- Clinical trial sites chosen in Germany

## On track with contribution to the TCR IIT collaboration – first TCR trial in Germany

- ✓ Cooperation with Max Delbrück Centre and Charité Hospital, Berlin
- ✓ Medigene contributed to TCR characterization: MAGE-A1 and TCR epitope expression in tumors/ Expitope®
- ✓ Regulatory advice meetings held with competent authorities
- ✓ Investigational Medicinal Product Dossier (IMPD) in preparation for filing

## Outlook for 2017

- **TCR IIT, Berlin:**
  - IMPD submission as part of the clinical trial application and approval/start of IIT TCR study in Berlin
  - Target: MAGE-A1 in multiple myeloma
- **Medigene's first TCR trial:**
  - GMP process finalization and validation
  - Clinical trial application and approval
  - Study start
- **DC trial in AML, Oslo:**
  - Complete enrollment
  - Final read-out in 2019

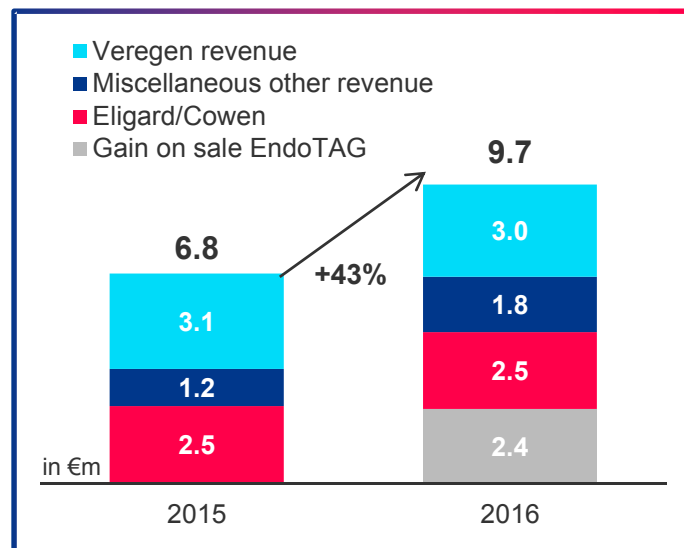




# Financial Report 2016

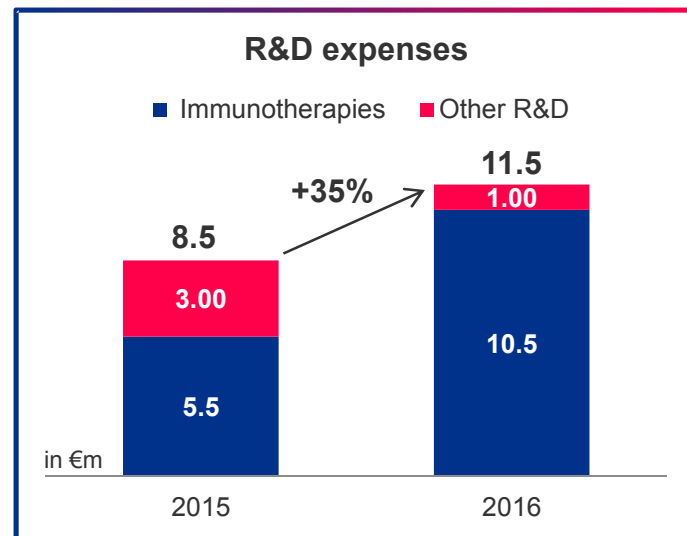
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## Increase in total revenue by 43% influenced by sale of EndoTAG<sup>®</sup> and bluebird cooperation



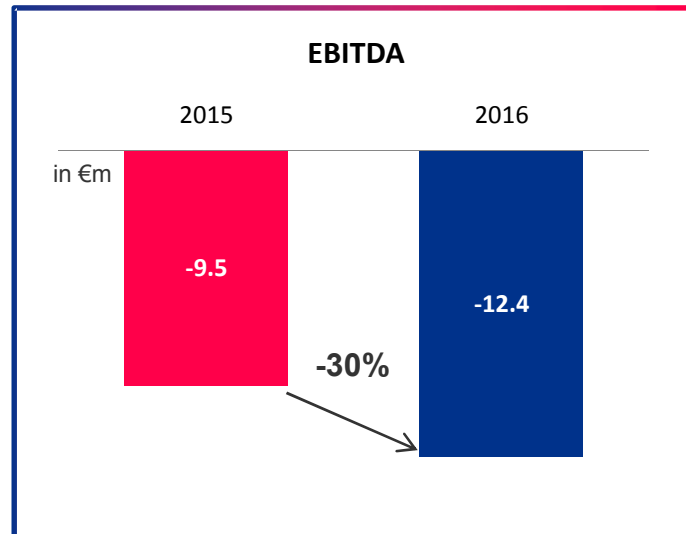
- Increase mainly due to one-time effect in connection with EndoTAG<sup>®</sup> sale to Syncore
- Partial recognition of US\$ 15m upfront from bluebird in 2016
- Total Veregen<sup>®</sup> revenue in line with 2015

## Increase in R&D expenses by 35% due to progress in preclinical and clinical programs



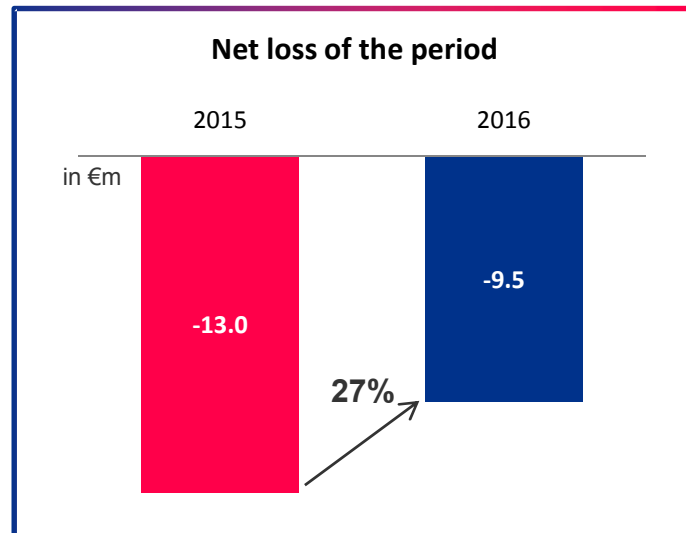
- Change in cost structure reflects shift of R&D activities towards immunotherapies

## Increased EBITDA loss, net loss reduced by 27%



### Widened EBITDA loss

- Increase in operating costs reflects growing focus on Immunotherapy R&D and exceeds 2016 revenue growth



### Differences between EBITDA and net loss mainly driven by:

- Sale of Immunocore shares
- Other effects as reflected in the financial result

## Financial guidance 2016 met

	2015	GUIDANCE 2016	2016
Total revenue	€ 6.8m	Stable/increasing	€ 9.7m
Veregen <sup>®</sup> total revenue	€ 3.1m	€ 3 – 4m	€ 3.0m
R&D expenses immunotherapies	€ 5.5m	€ 9 – 11m	€ 10.5m
EBITDA loss	€ 9.5m	€ 10 - 12m	€ 12.3m

## Further key figures

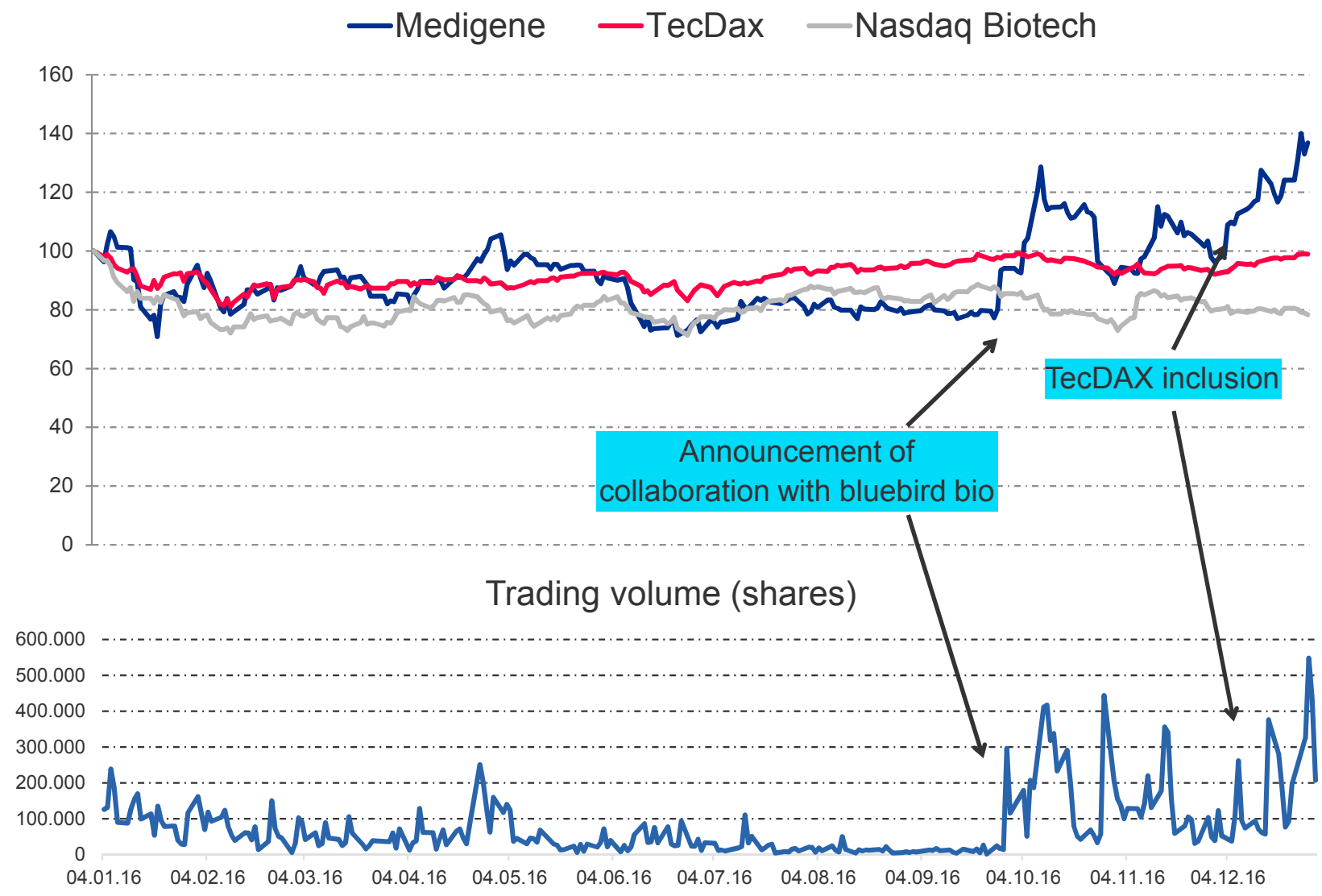
- Headcount increased to 88 by year end 2016 (YE 2015: 73)
- Incremental investments in IT and R&D infrastructure started in 2016 and completion of expansion to be completed in 2017
- Cash and cash equivalents increased to € 52.6m (YE 2015: €46.8m)
- Monthly cash consumption from operating activities of € 0.3m (2015: € 0.9m) positively influenced by one-time effects
- Equity ratio of 70%

## Financial guidance 2017: Further shift to immune oncology focus

	2016	GUIDANCE 2017
Total revenue	€ 9.7m	€ 8-10m
R&D expenses	€ 11.5m	€ 16-18m
EBITDA loss	€ 12.3m	€ 16-18m
Cash usage		€ 23-27m

- Medigene has sufficient financial resources for well beyond the planning horizon of two years.
- No bluebird milestone payments included

# 2016 share price performance +37%





# Questions & Answers

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