Merus

Pioneering Bispecific Antibodies

MARCH 12, 2019

Disclaimer

This presentation (including any oral commentary that accompanies this presentation) contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this presentation that do not relate to matters of historical fact should be considered forward-looking statements, including without limitation statements regarding the impact our Biclonics® platform can have on cancer, our product candidates' potential to treat certain types of tumors, the timing of regulatory filings and the timing and anticipated data read outs or results from our clinical trials. These forward-looking statements are based on management's current expectations. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including, but not limited to, the following: we have incurred significant losses, are not currently profitable and may never become profitable; our need for additional funding, which may not be available and which may require us to restrict out operations or require us to relinquish rights to our technologies or bispecific antibody candidates; potential delays in regulatory approval, which would impact our ability to commercialize our product candidates and affect our ability to generate revenue; the unproven approach to therapeutic intervention of our Biclonics® technology; our limited operating history; economic, political, regulatory and other risks involved with international operations; the lengthy and expensive process of clinical drug development, which has an uncertain outcome; the unpredictable nature of our early stage development efforts for marketable drugs; potential adverse public reaction to the use of cancer immunotherapies; potential delays in enrollment of patients, which could affect the receipt of necessary regulatory approvals; failure to obtain marketing approval internationally; failure to compete successfully against other drug companies; potential competition from other drug companies if we fail to obtain orphan drug designation or maintain orphan drug exclusivity for our products; our reliance on third parties to conduct our clinical trials and the potential for those third parties to not perform satisfactorily; our reliance on third parties to manufacture our product candidates, which may delay, prevent or impair our development and commercialization efforts; protection of our proprietary technology; our patents being found invalid or unenforceable; potential lawsuits for infringement of third-party intellectual property; our ability to attract and retain key personnel; managing our growth could result in difficulties; and we may lose our foreign private issuer status and incur significant expenses as a result.

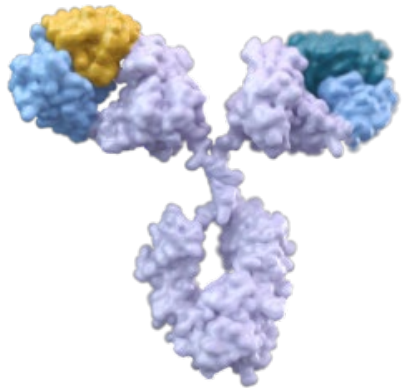
These and other important factors discussed under the caption “Risk Factors” in our Annual Report on Form 20-F filed with the Securities and Exchange Commission, or SEC, on April 30, 2018, and our other reports filed with the SEC, could cause actual results to differ materially from those indicated by the forward-looking statements made in this presentation. Any such forward-looking statements represent management's estimates as of the date of this presentation. While we may elect to update such forward-looking statements at some point in the future, we disclaim any obligation to do so, even if subsequent events cause our views to change.

Merus

Merus: Pioneering Bispecific Antibodies Since 2006

4 clinical-stage bispecific antibodies in oncology *

Multiple clinical trial readouts expected in 2H 2019



Designed by nature. Selected by Merus.

Sophisticated, patented technology & processes

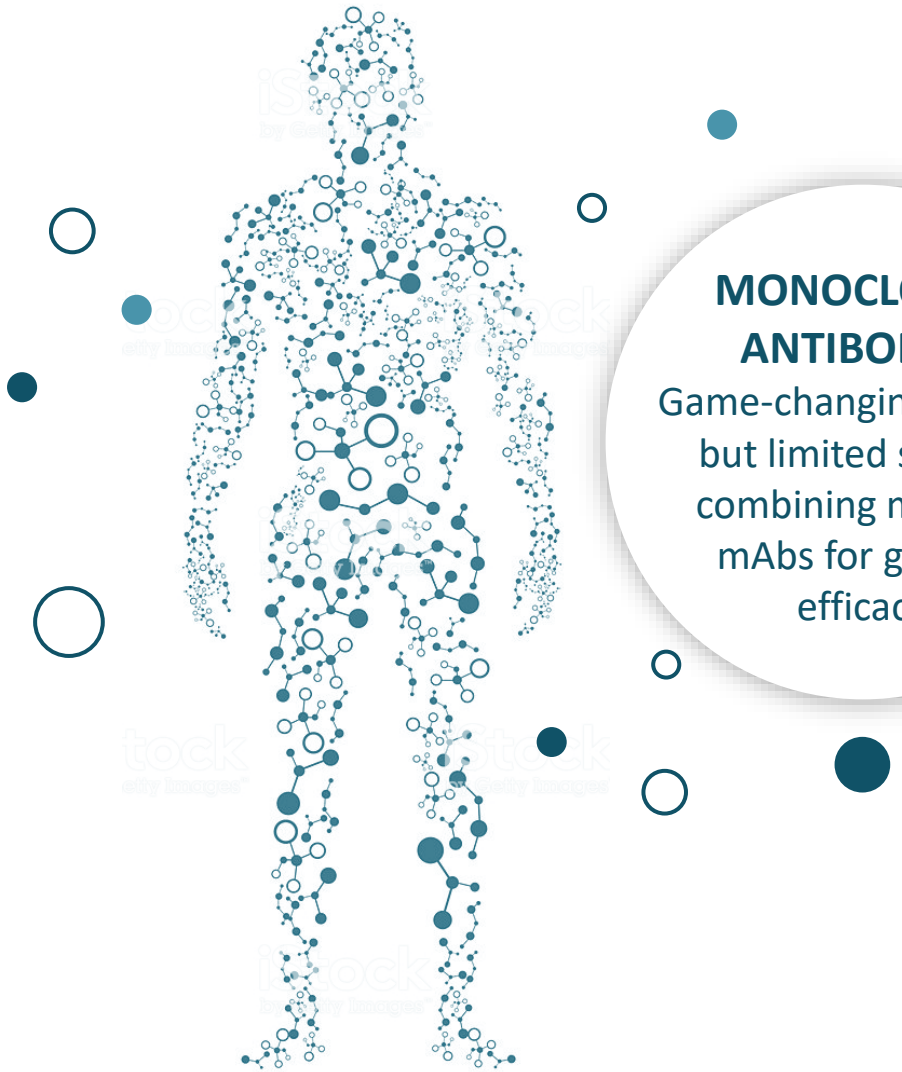
Ability to discover and design for innovative target combinations

Fully integrated discovery-to-manufacturing capabilities

* 4th Clinical program, MCLA-145: IND Cleared, Clinical trial anticipated start Q2 2019

Merus

The Next Wave of Antibodies in Cancer Treatment



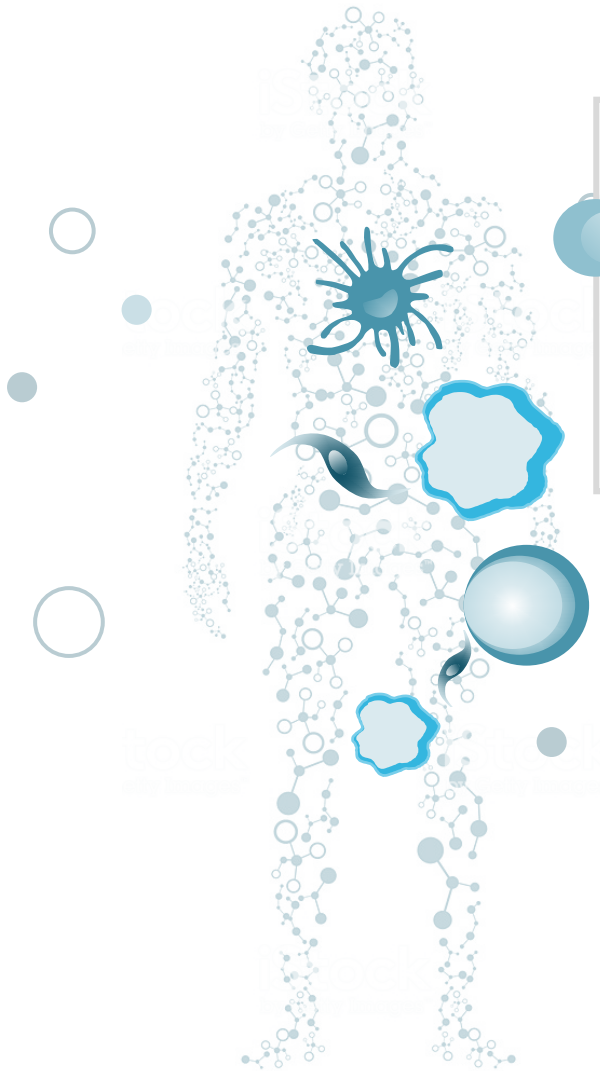
MONOCLONAL ANTIBODIES
Game-changing impact, but limited success combining multiple mAbs for greater efficacy

BISPECIFIC ANTIBODIES
Offering novel modes of action and new biology

High Potential for Cancer Immunotherapy and More

Merus

The Promise of Bispecific Antibodies



RECRUIT
Cells of the Immune System
to combat cancer

ENGAGE
T Cells
to kill cancer cells and establish long-lasting anti-tumor responses

BLOCK
Immune Suppression
in the tumor to strengthen immune activation

KILL
Cancer Cells
with bispecific antibodies with novel modes of action

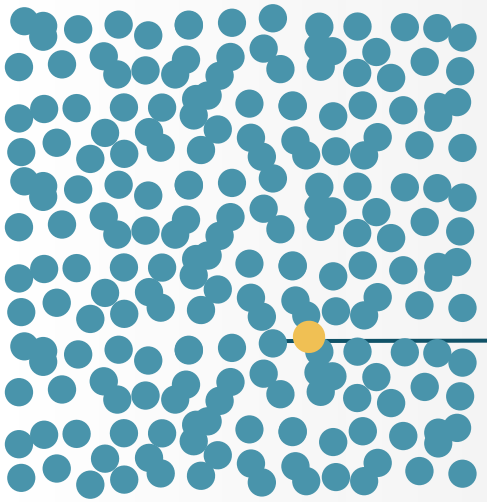
Merus

Biclonics® — Designed by Nature. Selected by Merus.

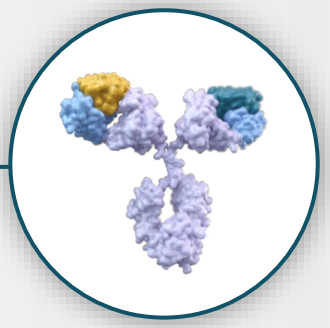
HUMAN ANTIBODY GENERATION

MeMo®
Transgenic Mouse

BICLONICS®
Merus' Bispecific Antibody Format



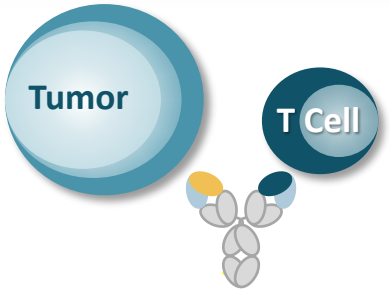
We use functional screening to identify Biclonics® with the **right** activity and profile



Creation of up to
1,000 Biclonics® against
any target pair of choice

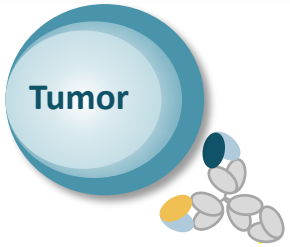
Merus

Our Optimal Target Pairs Have First or Best in Class Potential



ENGAGE AND KILL

MCLA-117
CLEC12A x CD3
To highly control T cell activation

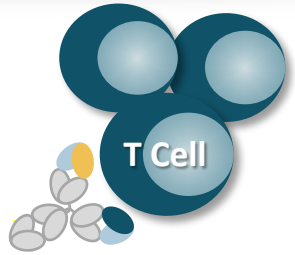


KILL TUMOR CELLS

MCLA-158
Lgr5 x EGFR
To prevent tumor formation

MCLA-128
HER3 x HER2
To prevent tumor growth / escape

MCLA-129
EFGR x c-MET
To inhibit tumor growth / survival



TUMOR T CELL REVIVAL

MCLA-145
CD-137 x PD-L1
To supercharge T cells inside tumor

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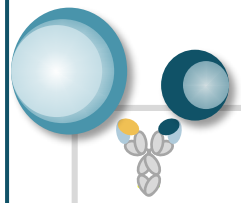
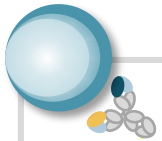
Our Development Strategy

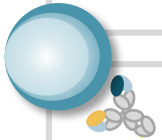
FOCUS ON WHOLLY-OWNED
Programs with Rights Retention



MCLA-117
CLEC12A x CD3



MCLA-158
Lgr5 x EGFR



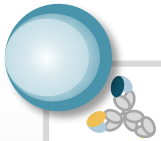
MCLA-128
HER3 x HER2

COLLABORATE SELECTIVELY
to Efficiently Unlock Value

MCLA-145
CD-137 x PD-L1

Incyte

For Non U.S.



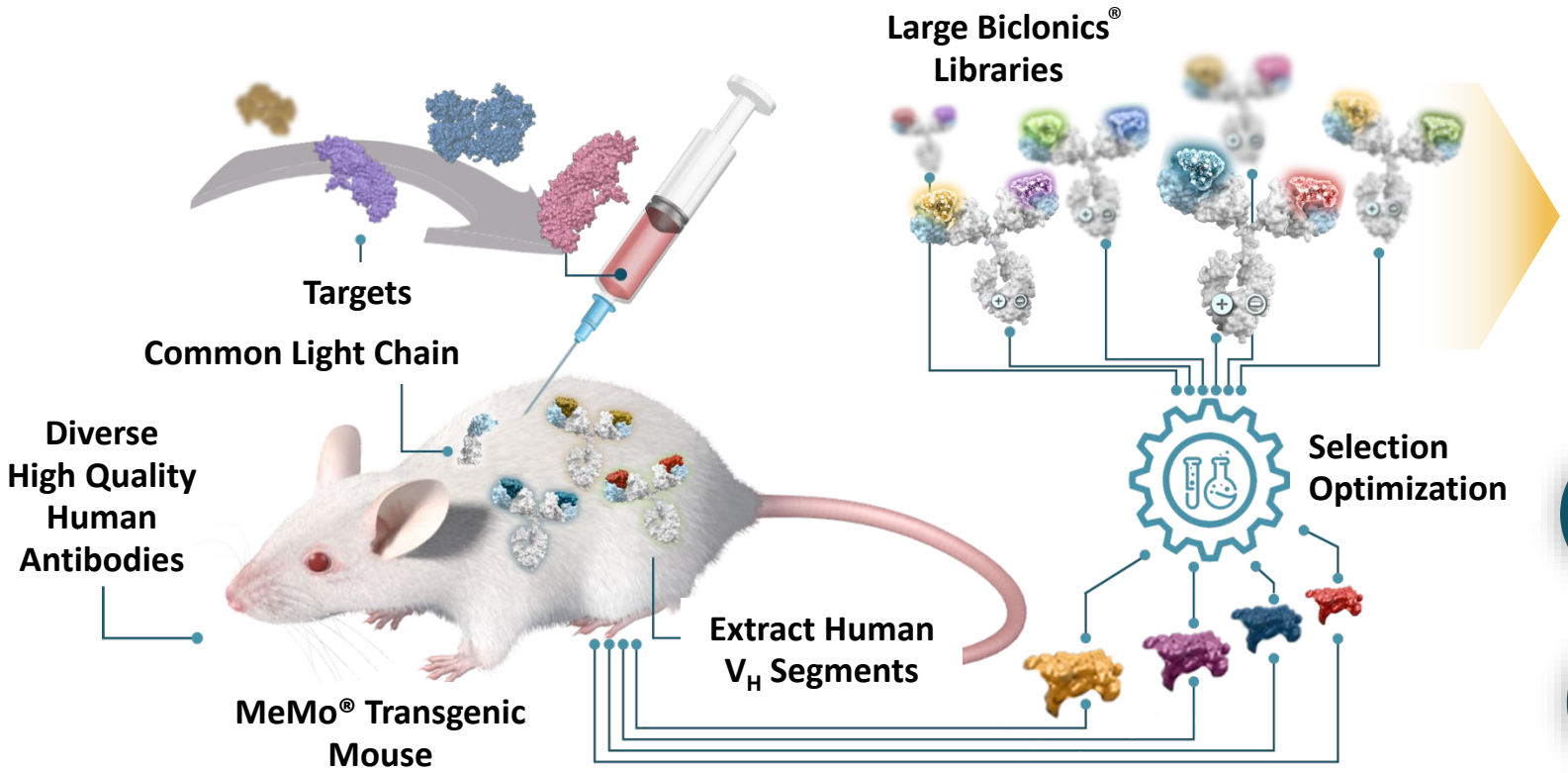
MCLA-129
EFGR x c-MET

BETTA PHARMACEUTICALS

For China

Merus

Our Proprietary Biclonics® Platform Is the Foundation of a Robust Pipeline



FUNCTIONAL SCREENING for discovery of innovative target combinations with novel biology

IgG FORMAT for efficient manufacturing and predictable in vivo behavior

Tested in 150+ patients

Over 10,000 Biclonics® created

Merus

Leading Clinical Pipeline with Multiple 2019 Milestones

WHOLLY-OWNED	TARGETS	INDICATION / DRUG COMBINATION	PRE-IND	PHASE 1	PHASE 2
MCLA-128	HER3 x HER2	Solid tumors (monotherapy)*			
		Metastatic Breast (2 cohorts)			2H 2019
MCLA-117	CLEC12A x CD3	Acute Myeloid Leukemia (AML)			2H 2019
MCLA-158	Lgr5 x EGFR	Solid tumors			YE 2019
COLLABORATIONS					
MCLA-145	CD137 x PD-L1	Solid tumors Incyte (Non- U.S.)			Q2 2019
MCLA-129	EGFR x c-MET	Solid tumors BETTA PHARMACEUTICALS (China)			
....	Undisclosed	Autoimmune disease ono			

● = Expected data read out or trial update

● = Expected timing of first patient dosed

*Phase ½ Trial

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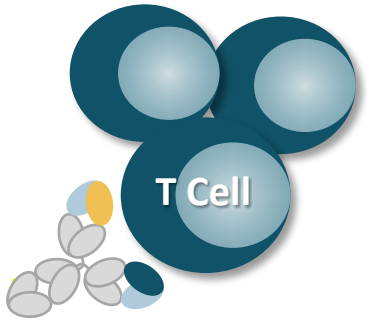
MCLA-145 – CD137 x PD-L1

Potent triple action designed to recruit and activate T cells and prevent their exhaustion for patients with solid tumors

CD137

Activate immune effector cells in context of tumor microenvironment



TUMOR T CELL REVIVAL

PD-L1

Attract T cells in the tumor and block inhibitory signals

Phase 1 Trial Initiation Expected Q2 2019

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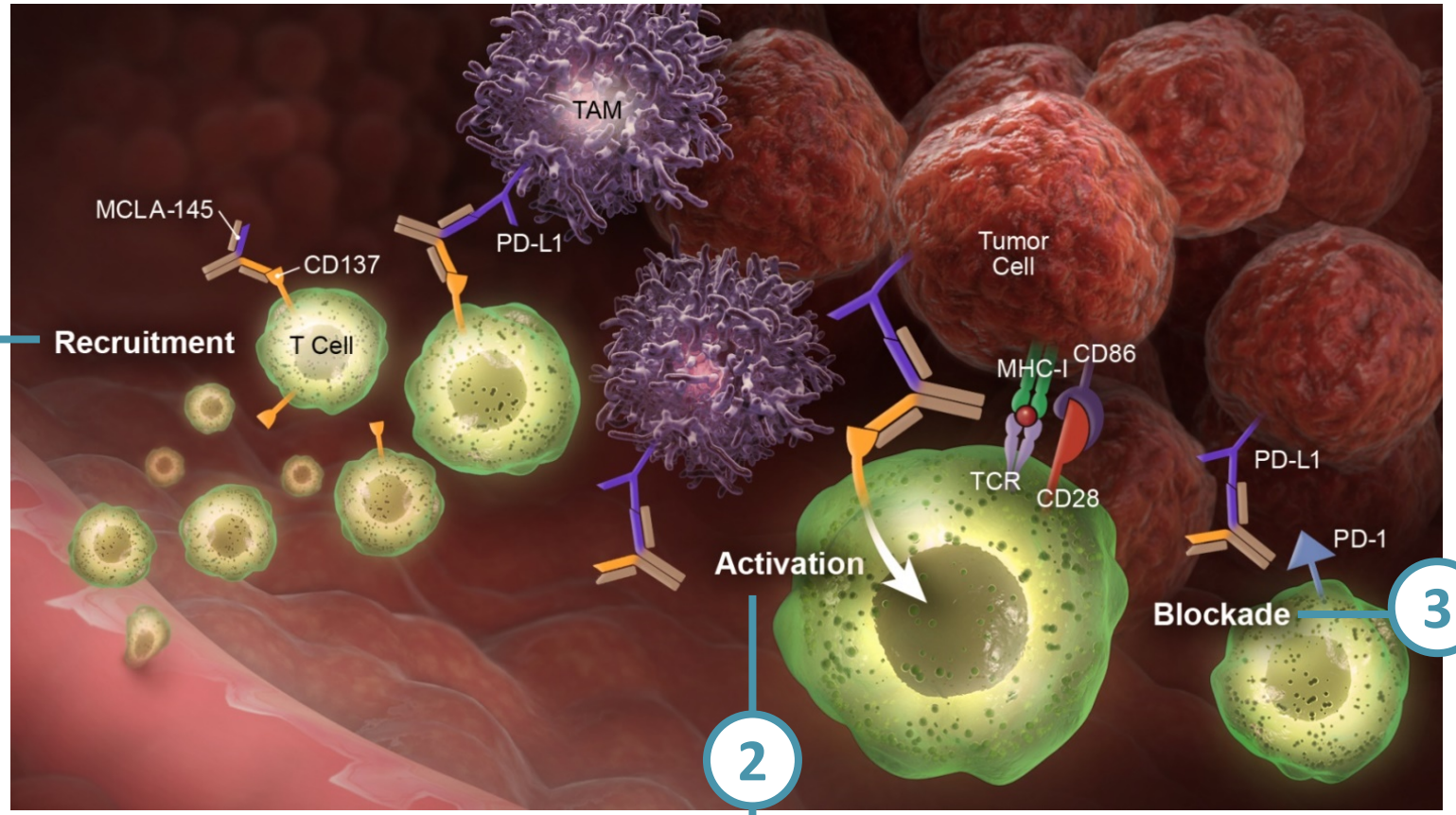
MCLA-145 – Triple Activity by a Single Biclonics®

PD-L1 Arm
Recruitment of T cells in tumor micro-environment



CD137 Arm
Potent activation of T cells in tumor

Blocking of T cell inhibitory PD-1/PD-L1 interactions in tumor prevent exhaustion

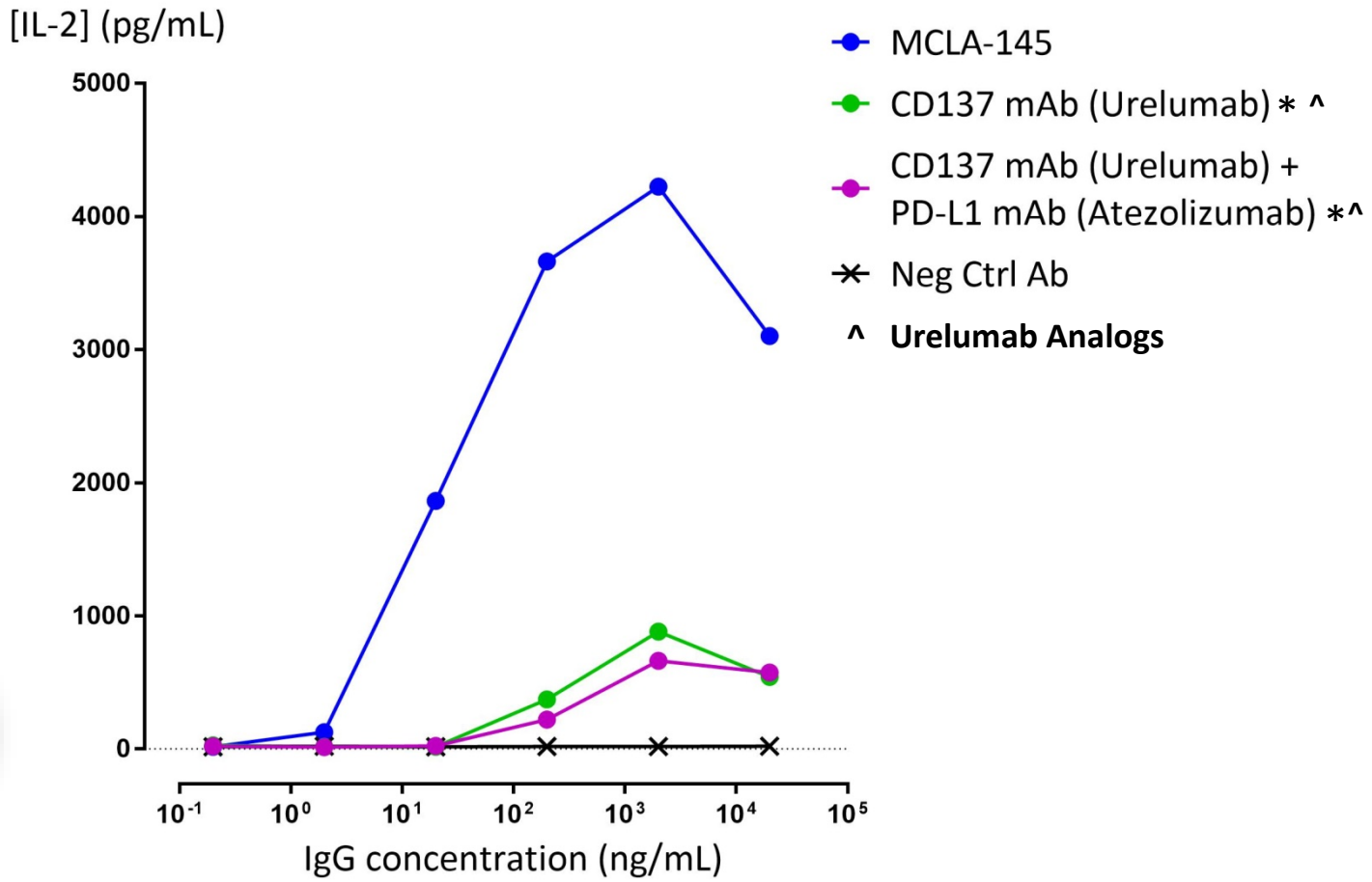
Merus

MCLA-145 – Demonstrated Potent T Cell Activation

- Binds with high affinity and specificity to PD-L1 and CD137 in patient derived cells
- MCLA-145 preclinical work demonstrates potent T cell activation
- Potential to overcome the known side effects of CD137 agonists currently in development

MCLA-145 preclinical data to be presented at AACR March 31, 2019

PRIMARY T CELL TRANSACTIVATION ASSAY



Experiment Conditions: T cells PBMC donor stimulated with antibody in the presence of PD-L1 on CHO cells. Antibody added to pre-coated anti-CD3 clone OKT3 plates. Purified T cells, CHO-PD-L1 cells added and incubated for 72 hrs at 37°C. Readout IL-2.

Merus

MCLA-145 – Phase 1 Trial Expected to Start Q2 2019

	TARGETS	INDICATION / DRUG COMBINATION	PRE-IND	PHASE 1	PHASE 2
MCLA-145	CD137 x PD-L1	Solid tumors		Q2 2019	

DESIGN	ENDPOINTS	STATUS
Global open-label, multicenter dose escalation w/ dose expansion phase • Patients with advanced solid tumors	• **Primary endpoint:** safety and tolerability • **Secondary endpoint:** single-agent preliminary efficacy	• IND cleared January 2019 • Clinical trial anticipated start Q2 2019

Merus

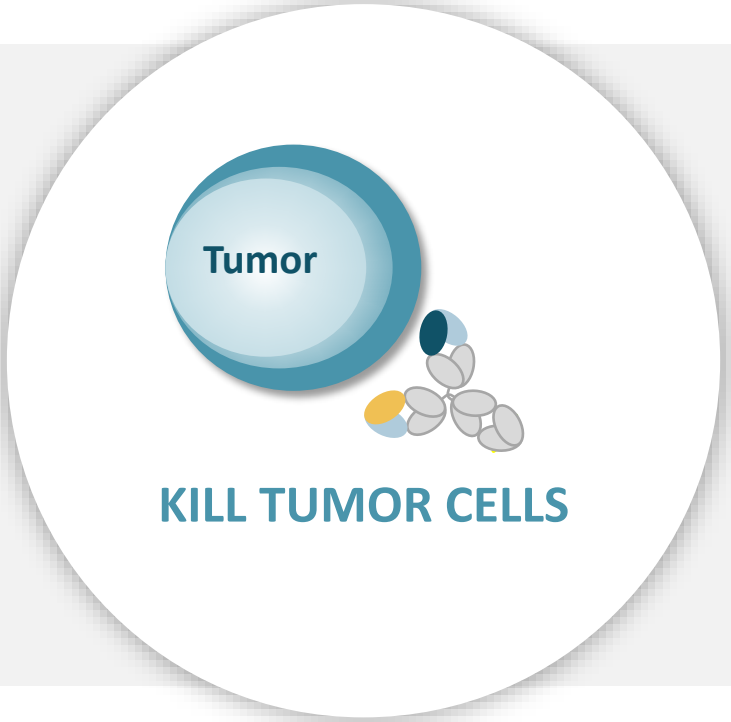
MCLA-158 – Lgr5 x EGFR

Potential to be first colorectal cancer treatment to block growth of tumors with Ras mutations (~50% of patients), a high unmet need

Lgr5

Expressed by intestinal cancer initiating cells

Identified through Merus functional screening and organoid discovery methods



EGFR

Blocks growth in Wnt dysregulated tumors including $KRAS^{mut}$

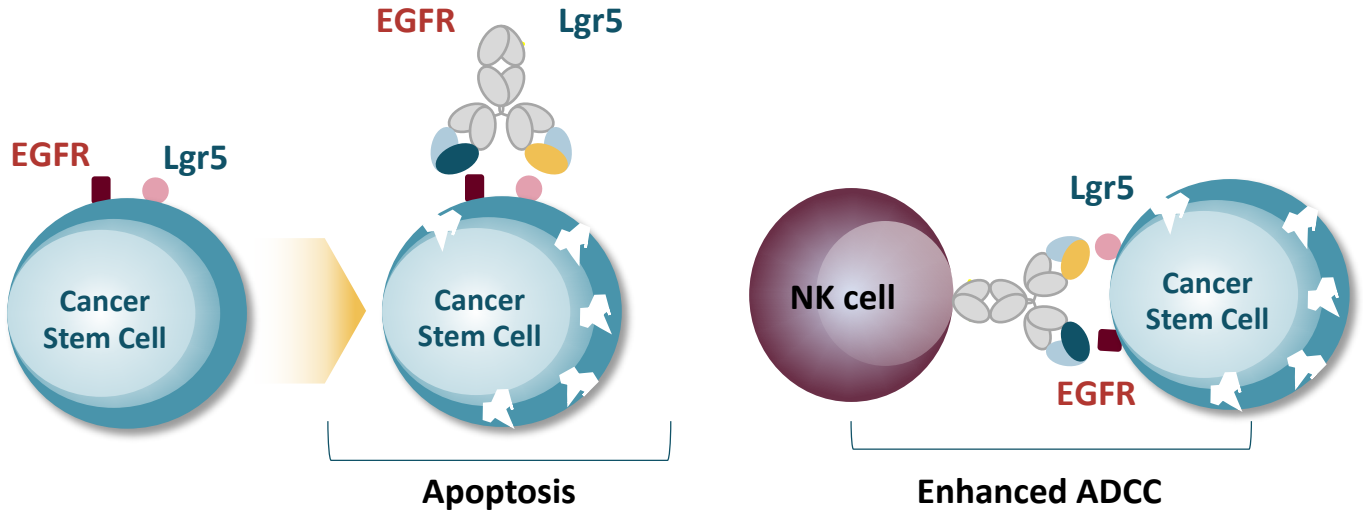
Preclinical data shows higher potency than Cetuximab

Emerging Phase 1 data expected end of 2019

Merus

MCLA-158 – Differentiated Target and MOA

MCLA-158 Mechanism of Action



- MCLA-158 designed to eliminate cancer initiating cells that cause growth and metastasis
- Lgr5+ cells are the origin of gastrointestinal cancer
- EGFR x Lgr5 induces apoptosis, potently blocks EGFR signaling in Wnt dysregulated solid tumors

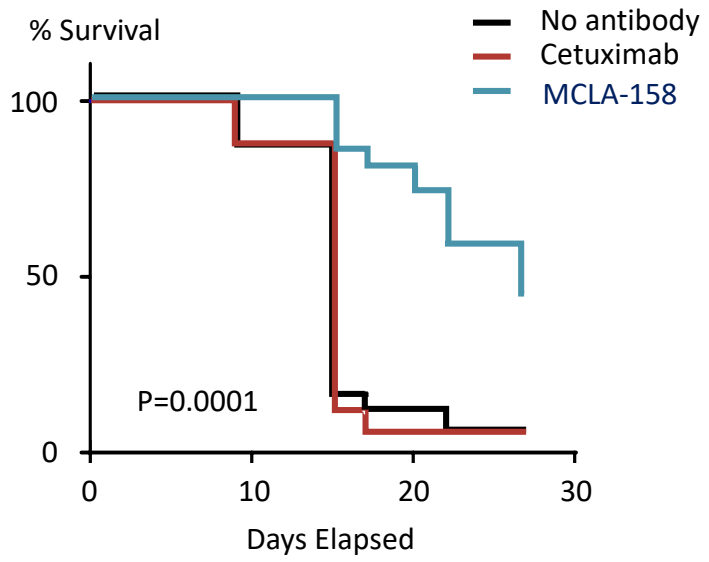
Merus

MCLA-158 – Key Preclinical Results in Colorectal Cancer (CRC)

Demonstrated Superior Growth Inhibition, Tolerability and Selectivity of Tumor vs. Healthy Tissue

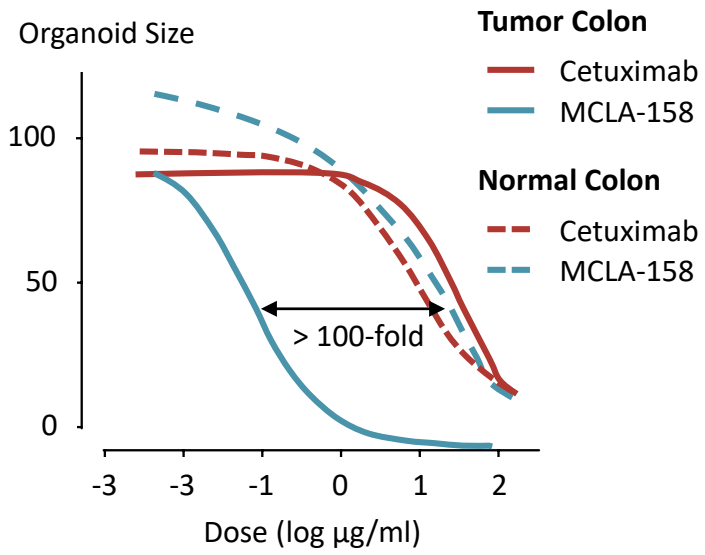
INHIBITION OF ORGANOID GROWTH

Superior **ACTIVITY**



KILLING OF ORGANOIDS FROM TUMOR AND HEALTH TISSUE

Superior **SELECTIVITY**



Superior **TOLERABILITY**

No skin rash in cynomolgus monkeys

When compare to EGFR targeting mAb,Cetuximab analogs

Merus

MCLA-158 – Phase 1 Trial

	TARGETS	INDICATION / DRUG COMBINATION	PRE-IND	PHASE 1	PHASE 2
MCLA-158	Lgr5 x EGFR	Solid tumors			YE 2019

DESIGN	ENDPOINTS	STATUS
Global open-label, multicenter dose escalation w/ safety dose expansion phase • Patients with solid tumors • Initial focus on metastatic colorectal cancer	• **Primary endpoint:** safety and tolerability of defined dose • **Secondary endpoint:** single-agent preliminary anti-tumor activity	• On track • Emerging data expected YE 2019

Merus

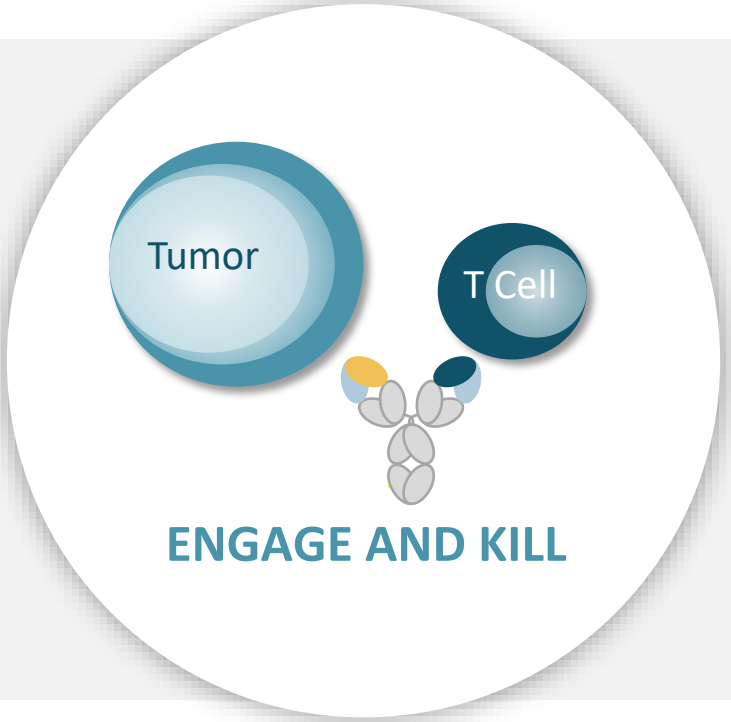
MCLA-117 – Harnessing the Killing Power of T Lymphocytes

MCLA-117 efficiently activates and redirects T cells to kill CLEC12A-expressing AML (stem) cells

CLEC12A

Expressed by tumor (stem) cells in ~ 90-95% of AML patients

Expression restricted to hematopoietic system = less off-tumor toxicity



CD3

Low affinity CD3 arm and silenced Fc for controlled T cell activation to avoid toxicity and off-target effects

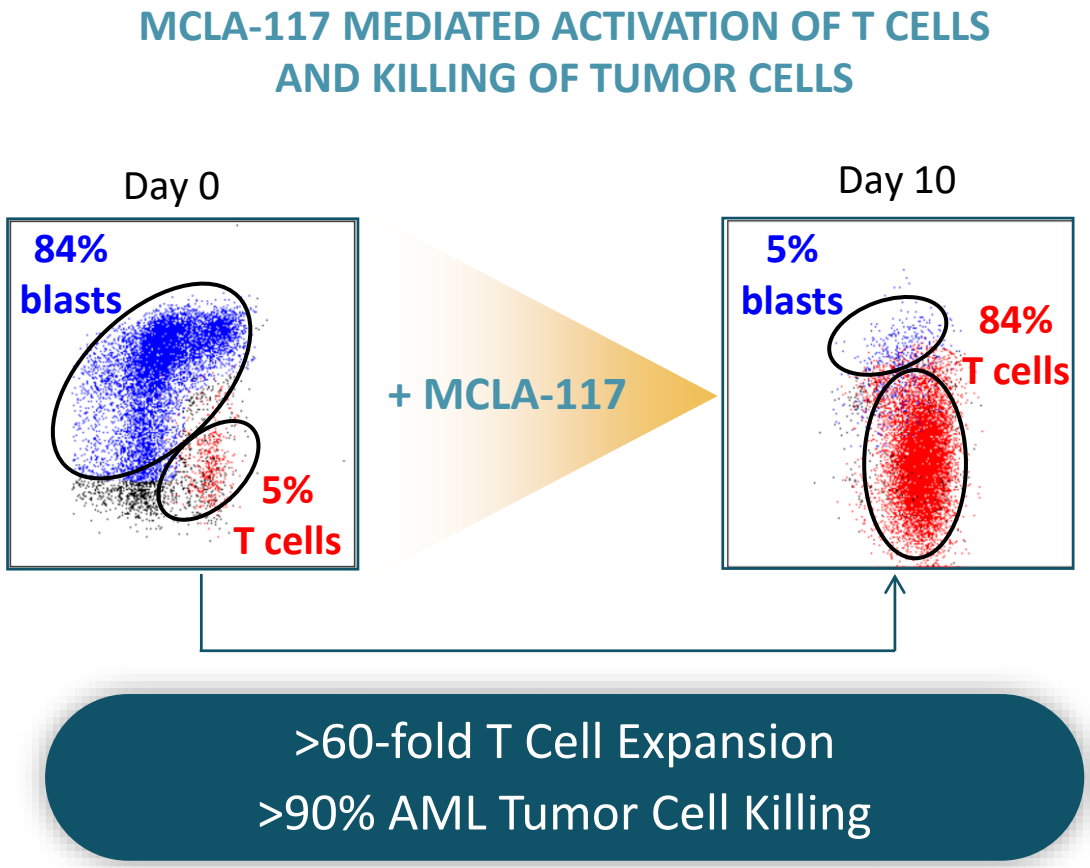
Balanced strategy for activity and safety

Preliminary anti-tumor activity observed
Data readout expected 2H 2019

Merus

MCLA-117 –Demonstrated Controlled, Potent Activation of T Cells in Preclinical Studies

- MCLA-117 efficiently activates and redirects T cells to kill CLEC12A-expressing AML(stem) cells
- Designed to spare the formation of platelets and red blood cells during therapy
- Active across AML patient subpopulations



Experiment Conditions: Primary AML patient samples were cultured in presence of MCLA-117 (200 ng/mL) for 10 days in AML supporting medium. T cells:CD33, AML blasts:CD45.

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MCLA-117 – Phase 1 Trial

	TARGETS	INDICATION / DRUG COMBINATION	PRE-IND	PHASE 1	PHASE 2
MCLA-117	CLEC12A x CD3	Acute Myeloid Leukemia (AML)			2H 2019

DESIGN	ENDPOINTS	STATUS
Single-arm, open-label, dose escalation w/ safety dose expansion • Up to 50 patients with relapsed / refractory AML	• **Primary Endpoints:** safety, tolerability • **Secondary Endpoints:** PK/PD, anti-tumor response, clinical benefit	• Ongoing in Europe and the U.S., with several additional trial sites opened end of 2018 • Preliminary anti-tumor activity has been observed • Data expected 2H 2019

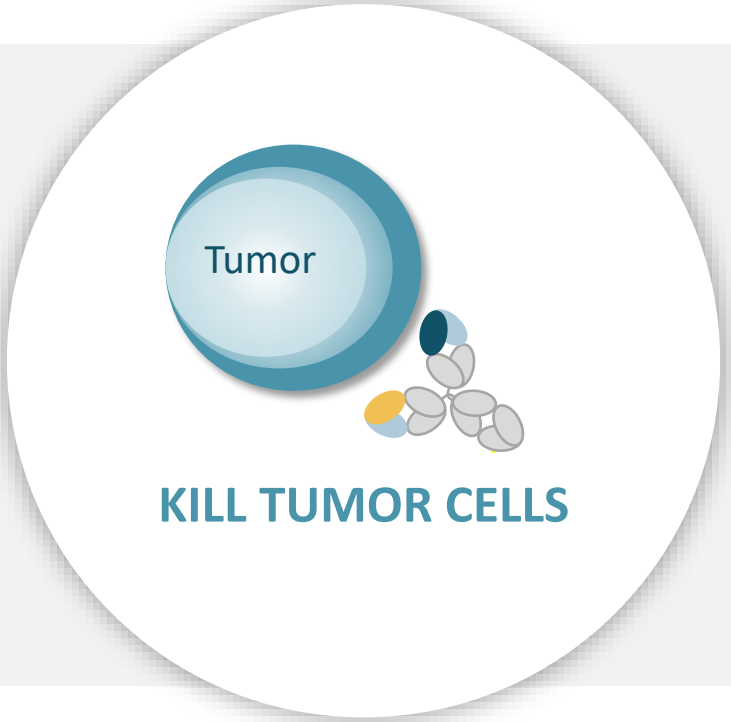
Merus

MCLA-128 – HER3 x HER2

Unique DOCK & BLOCK® approach potently inhibits tumor cell growth and survival; In clinic for multiple solid tumor indications

Block HER3

Blocks signaling even in high heregulin stress environments



Dock HER2

Docks to HER2 abundantly expressed on tumor cells to access HER3

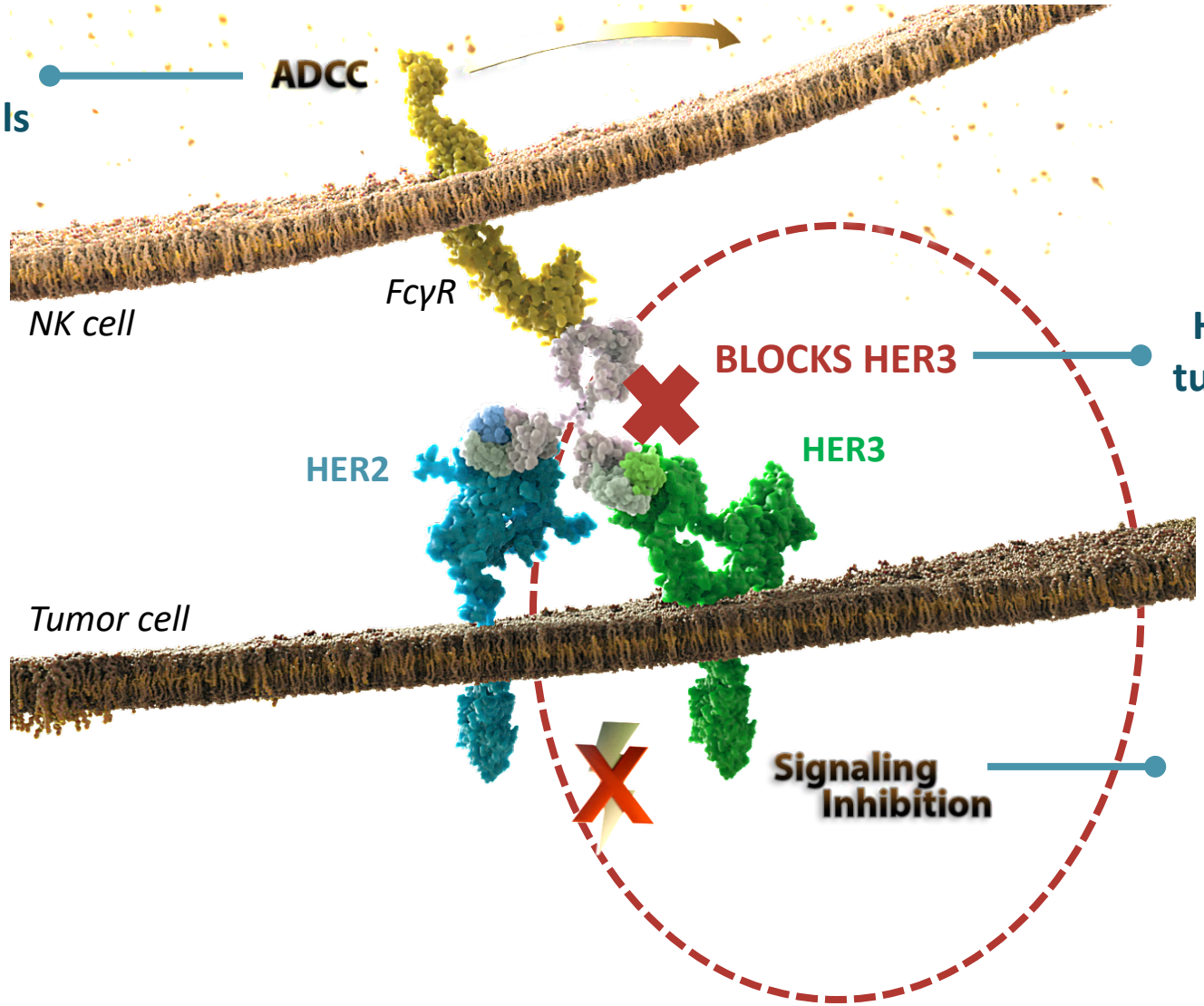
Combinations with HER2 targeted therapies possible

Metastatic Breast Cohort Phase 2 Trial Update Expected 2H 2019

Merus

MCLA-128 – Potently Inhibiting the HER3 Signaling Pathway, a Known Driver of Tumor Growth and Survival

Enhanced ADCC for efficient recruitment of immune killer cells



HER3 Blocking prevents tumor growth and escape

Even in high heregulin stress environments

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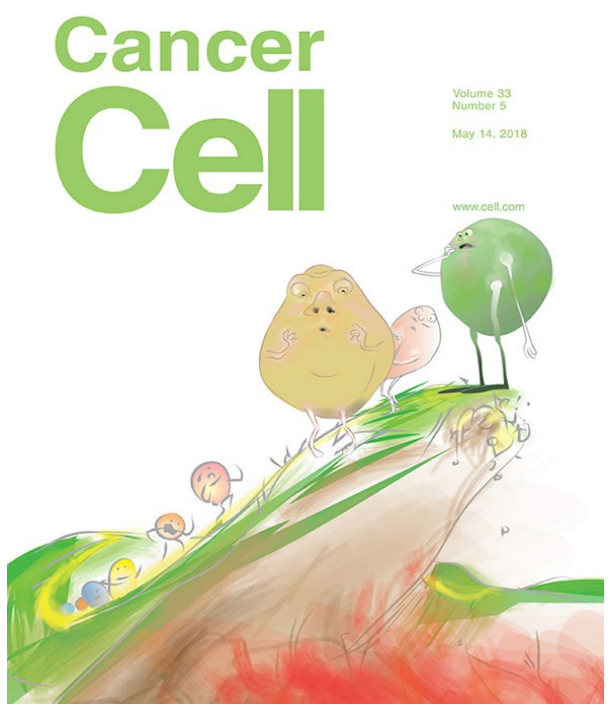
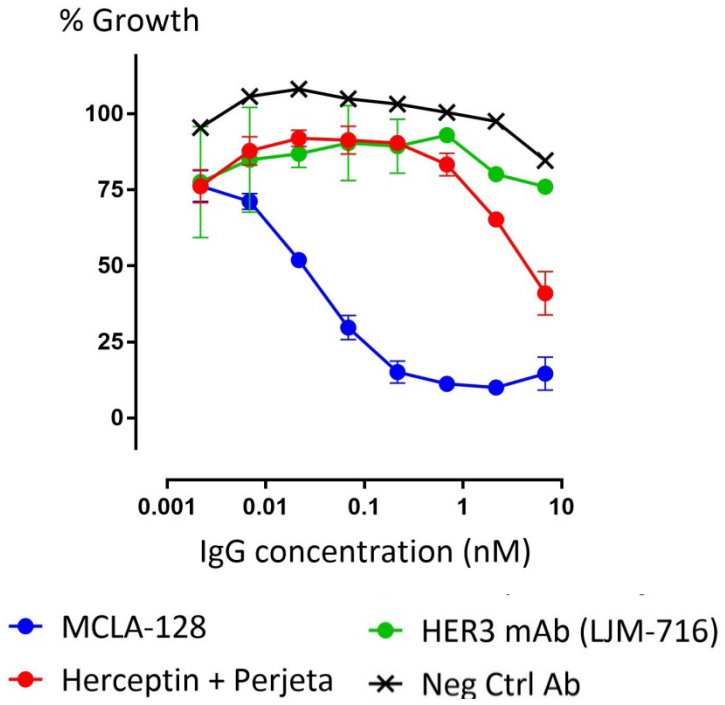
MCLA-128 – Potently Inhibits Heregulin-Driven Growth

PUBLISHED MAY 2018



SUPERIOR ACTIVITY SHOWN PRECLINICAL DATA



SAFETY AND TOLERABILITY DEMONSTRATED IN PHASE 1/2 TRIAL

MCLA-128 Dosing: 750 mg q3w

97 PATIENTS EVALUATED

- Single agent well tolerated
- Low risk for immunogenicity

Refer to Merus Publications for more information on MCLA-128 published and presented data: https://merus.nl/publications/

Merus

MCLA-128 – Phase 1/2 in Solid Tumors, Phase 2 in Combo MBC

WHOLLY-OWNED	TARGETS	INDICATION / DRUG COMBINATION	PRE-IND	PHASE 1	PHASE 2
MCLA-128	HER3 x HER2	Solid tumors (monotherapy)*			
		Metastatic Breast (2 cohorts)			2H 2019

DESIGN		ENDPOINTS	STATUS
Solid Tumors (Monotherapy)	**Phase 1/2 Study** Phase 1 : dose escalation Phase 2 : exploration in multiple solid tumor cohorts	• Safety, preliminary anti-tumor activity	• Well tolerated • Clinical POC established in MBC • Clinical POC established in Gastric • Study ongoing in other solid tumors
Metastatic Breast Cancer (MBC)	**Phase 2 Study in combination with 2 cohorts in MBC** Cohort1: HER2+ (MCLA-128 + Herceptin + Chemo) Cohort2: ER+/HER2^{low} (MCLA-128 + Hormone Therapy) Size: up to 120 patients in U.S. and Europe Dose: 750mg every 3 weeks	• Clinical benefit at 24 weeks	• Trial update 2H 2019

*Phase 1/2 Trial

Merus

Leading Collaborators Increasing Biclonics® Reach

Collaborator Focus On

Ex U.S. Development

Incyte

Formed December 2016

Potential to develop and commercialize ≤11 bispecific and monospecific antibodies from the Merus Biclonics® platform

Merus retains MCLA-145 U.S. rights

Collaborator Focus On

China Development

BETTA PHARMACEUTICALS

MCLA-129
EGFR x c-MET for solid tumors

先声药业 Simcere

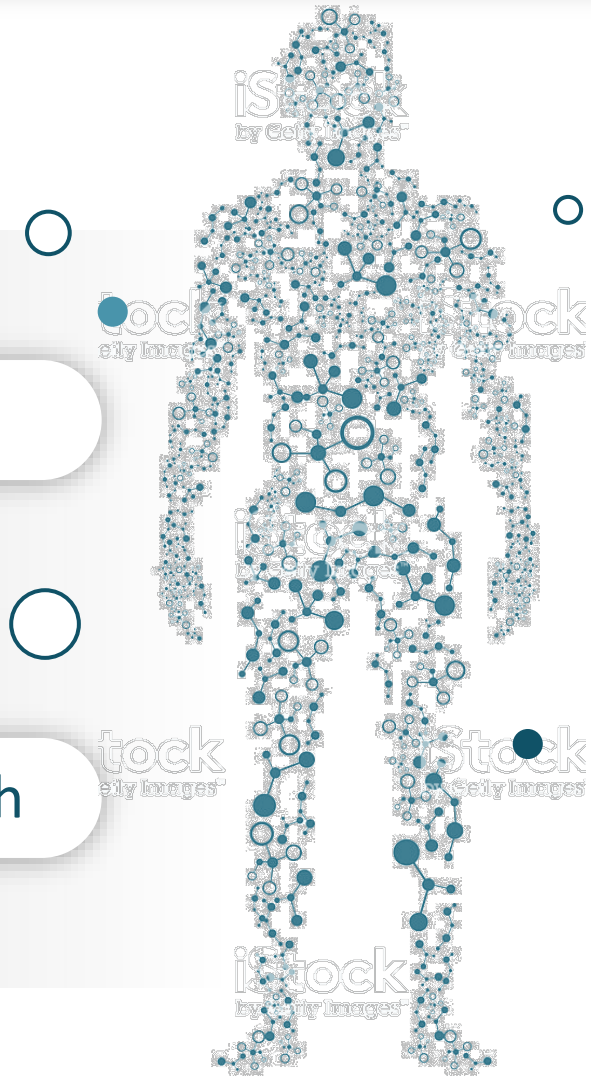
3 programs in
Immuno-oncology

Part of larger China platform strategy:
Efficient, cost effective approach to unlock additional pipeline candidates and platform value

Merus retains Rest-of-World rights

Merus

Expanding Biclonics® Platform



Cancer

Next-Gen Tech

Autoimmune Disease

ONO PHARMACEUTICAL CO.,LTD.

Exploring new formats, designs and targets

Merus

Strong Intellectual Property Positioning

EXTENSIVE IP ESTATE

- Breadth: Platform and Pipeline
- Depth: Discovery to Manufacturing

PATENTED BICLONICS® PLATFORM from Discovery to Clinic

- Patented MeMo® transgenic common light chain mouse for bispecific-ready antibody generation
- Spleen to Screen® patented technology for high throughput screening of antibodies
- Heterodimerization patented technology for efficient bispecific production
- Patented T Cell Engaging Technology through Binding CD3 and CLEC12a

Uniquely positioned to develop innovative bispecific antibody therapeutics

Merus

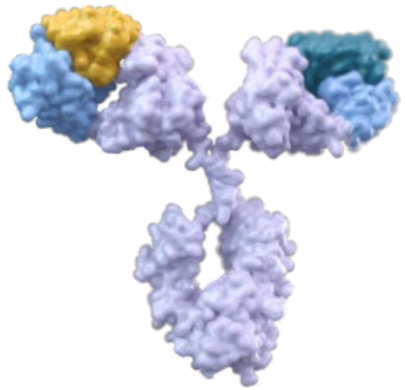
Multiple 2019 Milestones

Merus

Merus: Pioneering Bispecific Antibodies Since 2006

4 clinical-stage bispecific antibodies in oncology *

Multiple clinical trial readouts expected 2H 2019



Designed by nature. Selected by Merus.

Sophisticated, protected technology & processes

Ability to discover and design for non-obvious target combinations

Fully integrated discovery-to-manufacturing capabilities

* 4th Clinical program, MCLA-145: IND Cleared, Clinical trial anticipated start Q2 2019

Merus

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Pioneering Bispecific Antibodies

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