Forschung und Entwicklung in der Onkologie von Astellas – Personalisierte Medizin als Zukunfts-Chance

PharmaForum 2021

Gudrun Mächler
Leiterin Medizin, Astellas Pharma GmbH

NBM_2021_0001_DE, erstellt APR 21

DISCLAIMER

This presentation includes information about an Astellas product(s) or investigational compound(s) that is or may be approved by regulatory agencies for specific indications. Information about current usage statistics and/or about other potential future uses is intended only for discussion of a product's current sales performance and/or a product's or investigational compound's regulatory lifecycle development and should not be interpreted as an intent to promote unapproved uses. The contents of this presentation should not be used in any manner to directly or indirectly promote or sell the product for unapproved uses. Astellas prohibits the promotion of unapproved uses and complies with all applicable laws, regulations and company policies.

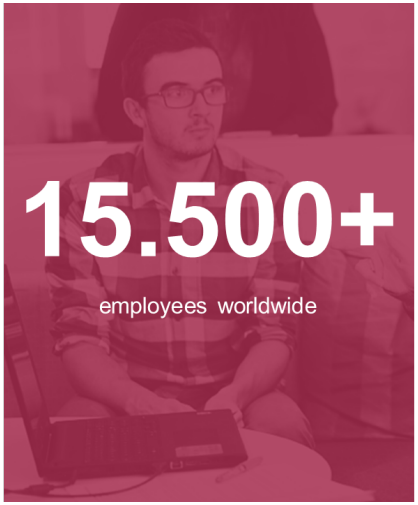
WE AT ASTELLAS: WITH PASSION AND INTEGRITY

ONCOLOGY
XTANDI™, ELIGARD™, XOSPATA™

TRANSPLANTATION
ADVAGRAF™, PROGRAF™, MODIGRAF™

UROLOGY
BETMIGA™, VESIKUR™

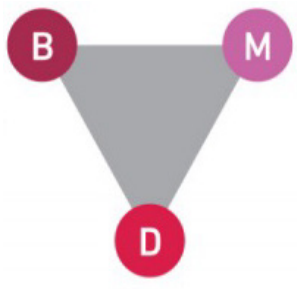
ANTI-INFECTIVES
MYCAMINE™



Data on file

WE PURSUE A FOCUS AREA APPROACH TO MAXIMIZE OUR POTENTIAL TO CAPTURE INNOVATION

Our Focus Area Approach guides how we approach our research to create the ideal ecosystem for novel innovation to thrive.



B **Biology** – Pathophysiology characterized

We harness an in-depth understanding of disease biology: how diseases originate, develop and thrive in the body. This enables us to identify the most promising mechanisms of action for treatment.

M **Modality/Technology** – Versatile technology

We use versatile technologies and modalities, innovative therapeutic molecules and delivery methods with unique applications, that allow us to physically reach and interrupt those biological mechanisms efficiently, effectively and safely.

D **Disease** – With high unmet medical needs

We select diseases with high unmet needs, those which have few or no current treatments and a significant impact on quality or length of life, that will respond positively to the biology/modality combination. This ensures our efforts deliver meaningful value for the patients that need our help the most.

astellas

Data on file

WE ARE INVESTIGATING NOVEL MODALITIES AND TECHNOLOGIES THAT HAVE THE POTENTIAL TO TREAT DISEASES WITH NO, OR SEVERELY LIMITED, EXISTING OPTIONS

We are engaging in collaborations with world-leading academic research institutes and biotechnology companies that share our vision to bring breakthrough discoveries to patients that could define an entirely new chapter in medicine

Our recent strategic acquisitions and partnerships *include*:

Audentes Therapeutics, Inc.
(acquisition in 2020, strengthening our position as a global leader in gene therapy)

CLINO
(a partnership to develop a gene therapy for the treatment of retinitis pigmentosa)

Xyphos Biosciences, Inc.
(acquisition in 2019, adding a novel and proprietary therapeutic platform, as well as industry-leading talent, to help accelerate next-generation cancer immunotherapy)

Frequency Therapeutics, Inc.
(a license agreement to develop a regenerative medicine candidate for sensorineural hearing loss)

Mitobridge, Inc.
(acquisition in 2018, establishing our position as a global leader in mitochondrial directed-therapy)

Nanna Therapeutics Limited
(acquisition in 2020, adding a unique screening platform to strengthen our mitochondria-related research and early-stage development capabilities)

Quethera Limited
(acquisition in 2018, bolstering our commitment to innovation in ophthalmology with the addition of a novel gene therapy program for glaucoma)

Universal Cells, Inc.
(acquisition in 2018, enabling us to utilize cell therapy technology across multiple disease areas, with the addition of the proprietary Universal Donor Cell technology)

Data on file

THE ASTELLAS PIPELINE

AS OF AUGUST 2020

Phase 1

- ASP1235/AGS62P1 (Acute myeloid leukemia)
- ASP8374/PTZ-201 (Cancer)
- ASP1948/PTZ-329 (Cancer)
- ASP1951/PTZ-522 (Cancer)
- ASP9801 (Cancer)
- ASP7517 (Cancer)
- ASP0892 (Peanut allergy)
- ASP0367/MA-0211 (Duchenne muscular dystrophy)
- ASP0598 (Chronic tympanic membrane perforation)
- ASP2390 (House dust mite-induced allergic rhinitis)
- AT845 Pompe disease
- ASP1617 (Systemic lupus erythematosus)
- ASP8062 (Substance use disorders)

Phase 2

- enfortumab vedotin (ASG-22ME) (Metastatic urothelial cancer and other solid
- zolbetuximab (IMAB362) (Pancreatic adenocarcinoma)
- ASP1650 (Testicular cancer)
- ASP7317 (Dry AMD and Stargardt's disease)
- ASP1128/MA-0217 (Acute kidney injury)
- ASP3772 (Prevention of pneumococcal disease)
- FX-322 (Sensorineural hearing loss)
- resamirigene bilparvovec (AT132)* (X-linked myotubular myopathy)
- bleselumab (ASKP1240) (rFSGS)
- roxadustat (ASP1517/FG-4592) (Chemotherapy-induced anemia)
- ASP8302 (Underactive bladder)
- isavuconazole (Pediatric invasive aspergillosis and mucormycosis: US)

Phase 3

- enzalutamide (MDV3100)
- gilteritinib (ASP2215) (Other AML; pediatric AML)
- zolbetuximab (IMAB362) (Gastric and gastroesophageal junction adenocarcinoma)
- peficitinib (ASP015K) (Rheumatoid arthritis: China)
- fezolinetant (ESN364) (Menopause-related vasomotor symptoms)

Filed

- enzalutamide (MDV3100) ina; M1 CSPC: EU)
- (ASP2215) na)
- t (ASP1517/FG-4592) iated with CKD non-dialysis: JP, EU; Anemia associated with CKD on dialysis: EU)

Oncology | Focus Area approach (excluding IO projects) | Others

*AT132 clinical study for registration put on clinical hold by FDA, due to recently observed serious adverse events

AML: acute myeloid leukemia, AMD: dry age-related macular degeneration, rFSGS: recurrence of focal segmental glomerulosclerosis in de novo kidney transplant recipients, M0: non-metastatic, CSPC: castration-sensitive prostate cancer, M1: metastatic, CRPC: castration-resistant prostate cancer, CKD: chronic kidney disease, R/R: relapsed or refractory

zolbetuximab (IMAB362)

(Gastric and gastroesophageal junction adenocarcinoma)

astellas

ZOLBETUXIMAB COMBINES HIGH-PRECISION TARGETING WITH IMMUNE-MEDIATED MECHANISM OF ACTION

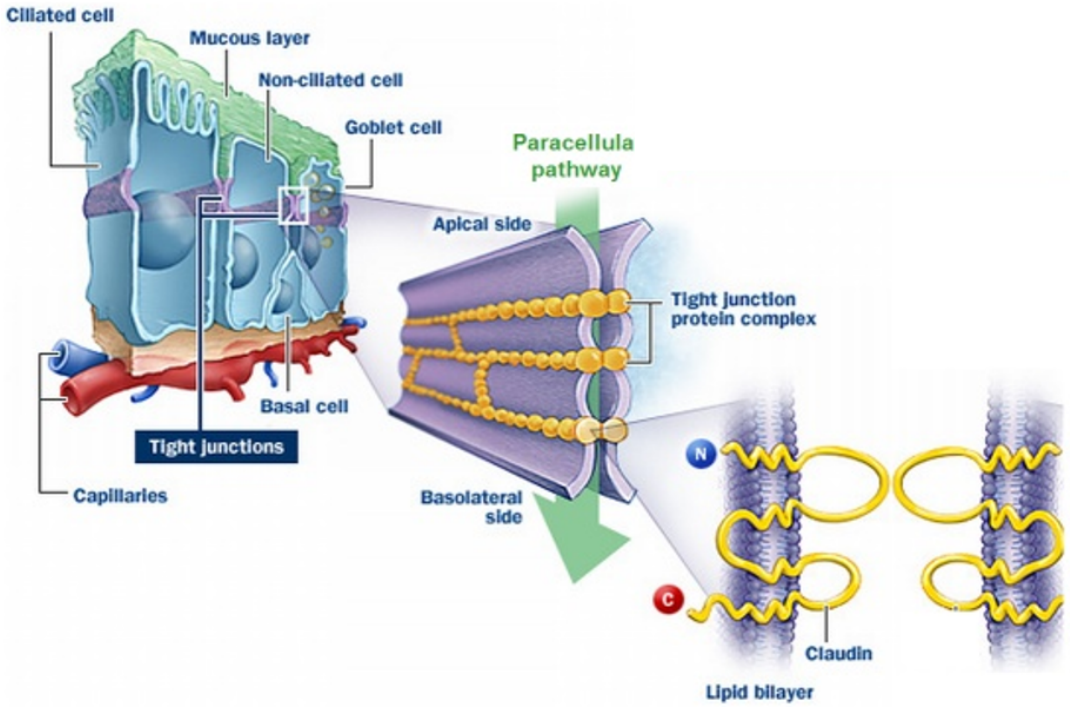
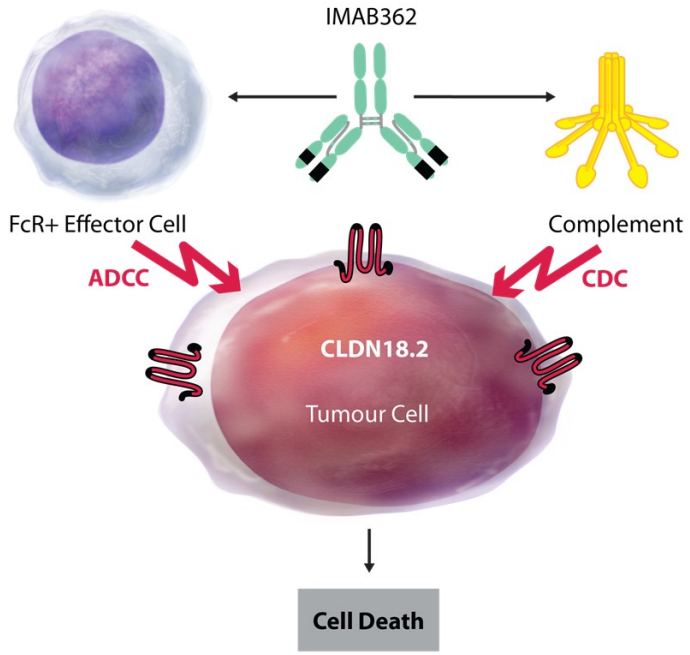


Image adapted from Al-Batran SE, et al. *J Clin Oncol*. 2016; 34



Treatment of cells with **chemotherapy increased CLDN18.2 cell surface expression** and improved the activity of zolbetuximab-induced ADCC and CDC

Image adapted from Singh P, et al. *J Hematol Oncol*. 2017; 10(1):105

1. Al-Batran SE, et al. *J Clin Oncol*. 2016; 34. 2. Singh P, et al. *J Hematol Oncol*. 2017; 10(1):105.

ADCC: antibody-dependent cellular cytotoxicity, CDC: complement-dependent cytotoxicity

ZOLBETUXIMAB, THE MOST ADVANCED MONOCLONAL ANTIBODY IN OUR DEVELOPMENT PIPELINE

Target: Claudin 18.2

- Claudin is a major structural component of tight junctions and seals intercellular space in epithelial sheets.
- Broadly expressed in various cancer types.
  - ~70% of gastric tumors; 30% of these met the eligibility criteria for the ongoing Phase 3 studies
  - ~60% of primary pancreatic adenocarcinomas; approx. 20% of these meet the eligibility criteria for the ongoing Phase 2 study

Gastric and gastroesophageal junction (GEJ) adenocarcinoma

- Target patient population: locally advanced and metastatic gastric and GEJ adenocarcinoma with high Claudin 18.2 expression.
- Third leading cause of cancer death worldwide.[1]
- Overall 5-year survival rate for metastatic gastric and GEJ cancer is under 25%.[2,3]
- Median OS for Stage IV gastric cancer is 8 -15 months. [4]

Gastric and GEJ adenocarcinoma	**P3: SPOTLIGHT**	First line, combination with mFOLFOX6, vs. placebo	n=550	FSFT: Oct. 2018
	P3: GLOW	First line, combination with CAPOX, vs. placebo	n=500	FSFT: Jan. 2019
	P2: ILUSTRO	Cohort 1: Third or later line, zolbetuximab monotherapy Cohort 2: First line, combination with mFOLFOX6 Cohort 3: Third or later line, combination with pembrolizumab	n=112	FSFT: Sep. 2018
Pancreatic adenocarcinoma	**P2**	Combination with nab-paclitaxel and gemcitabine, vs. placebo	n=141	FSFT: May 2019

SPOTLIGHT: https://clinicaltrials.gov/ct2/show/NCT03504397 accessed 14 Sep 2020, GLOW: https://clinicaltrials.gov/ct2/show/NCT03653507 Accessed 14 Sep 2020, ILUSTRO: https://clinicaltrials.gov/ct2/show/NCT03505320 Accessed 14 Sep 2020, P2 https://clinicaltrials.gov/ct2/show/NCT03816163 Accessed 14 Sep 2020

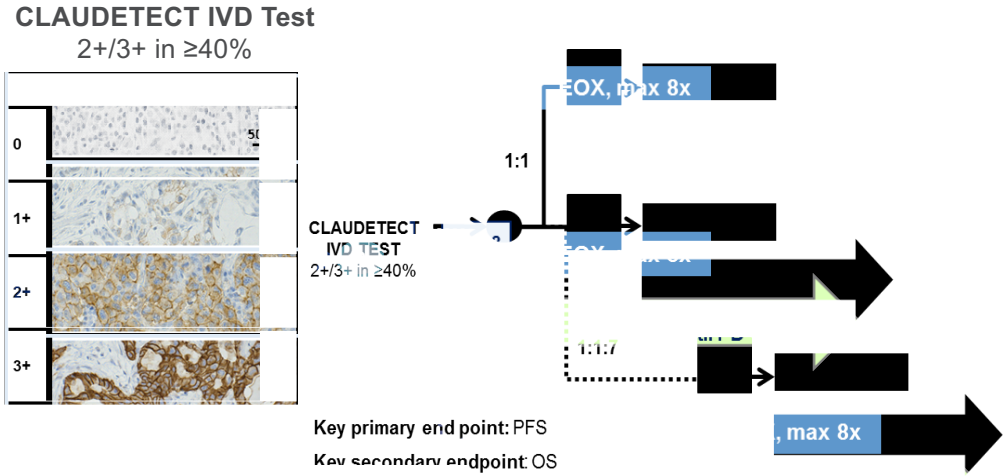
astellas

1.WHO Cancer Fact Sheet – Globacan 2020, 2. Pennathur et al., *Lancet*. 2013;381:400-12. 3. Sahin et al., Clin Cancer Res. 2008;14(23):7624-34. 4. Iizumi *et al*., 2018; Cancer Chemother Pharmacol. 81:981-989

OS: Overall survival, CAPOX: Capecitabine and oxaliplatin, mFOLFOX6: 5-FU, leucovorin and oxaliplatin, FSFT: First subject first treatment

FAST PH2B STUDY: LONGER SURVIVAL WITH ZOLBETUXIMAB IN HIGHER CLDN18.2 EXPRESSING TUMORS[1]

FAST Ph2b Study Design[1]

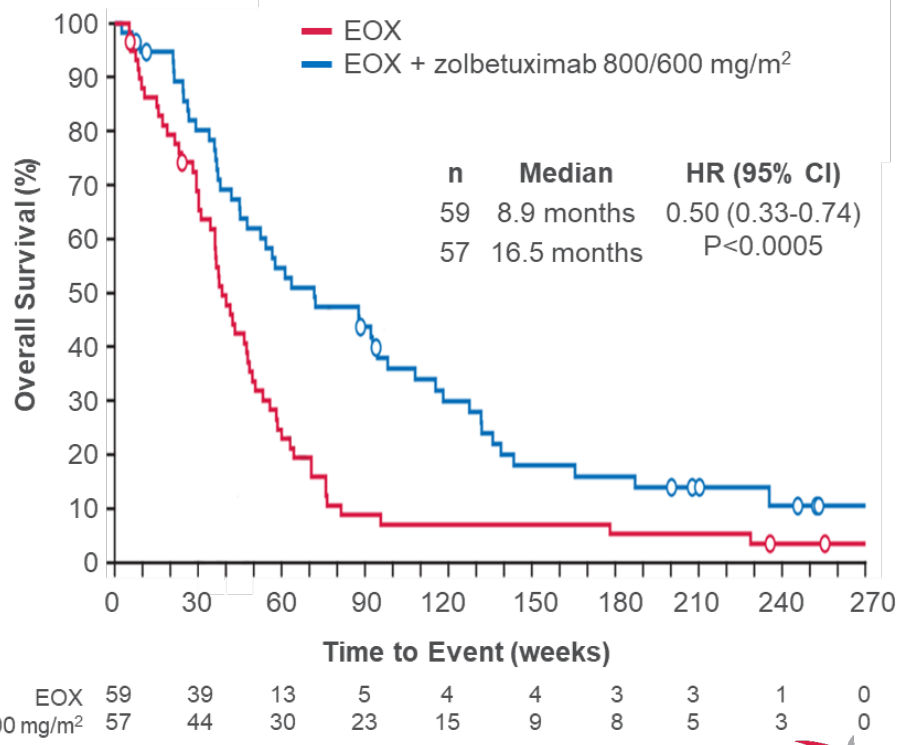


Key primary end point: PFS
Key secondary endpoint: OS

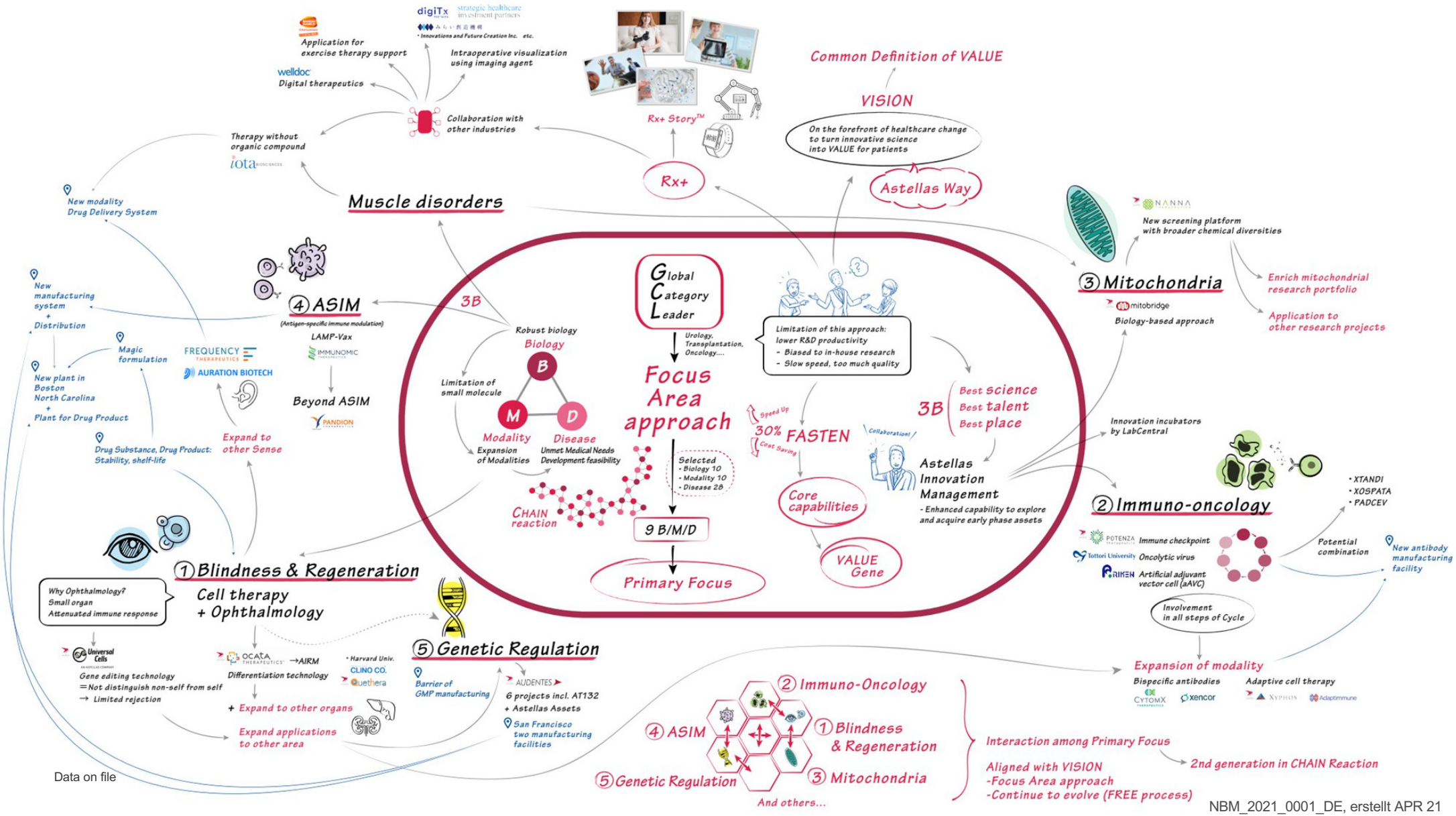
l of each cycle
d1 of each cycle
m² per day, d1-21 of each cycle

EOX:
Epirubicin, 50 mg/m², d1 of each cycle
Oxaliplatin, 130 mg/m², d1 of each cycle
Capecitabine, 1250 mg/m² per day, d1-21 of each cycle

Overall Survival in ≥70% CLDN18.2[2]



1. Lordick et al., Annals of Oncology (2016) 27 (suppl_9): ix68-ix85.; 2. Sahin et al., Ann Oncol. 2021, S0923-7534(21)00122-8. Online ahead of print.



Data on file

NBM_2021_0001_DE, erstellt APR 21

NBM_2021_0001_DE, erstellt APR 21