



TARGET A BETTER NOW

immun•gen

Nasdaq: IMGN

J.P. Morgan Healthcare Conference
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FORWARD-LOOKING STATEMENTS

This presentation includes forward-looking statements regarding ImmunoGen's expectations related to the design and potential success of ImmunoGen's mirvetuximab soravtansine and IMGN632 clinical studies and regulatory pathways, including the timing of initiating and receiving data from, as well as the likelihood of success of, the studies to support approval of mirvetuximab and IMGN632; the occurrence, timing, and outcome of other potential preclinical, clinical, and regulatory events related to ImmunoGen's and its collaboration partners' programs; and potential future collaborations. For these statements, ImmunoGen claims the protection of the safe harbor for forward-looking statements provided by the Private Securities Litigation Reform Act of 1995. Various factors could cause ImmunoGen's actual results to differ materially from those discussed or implied in the forward-looking statements, and you are cautioned not to place undue reliance on these forward-looking statements, which are current only as of the date of this presentation. Factors that could cause future results to differ materially from such expectations include, but are not limited to, the risks and uncertainties inherent in the Company's development programs, including clinical studies and regulatory processes, their timings and results, including the possibility that studies of mirvetuximab fail to confirm the hypotheses suggested by the exploratory analyses of the FORWARD I data, and the risks and uncertainties associated with the scale and duration of the COVID-19 pandemic and resulting impact on ImmunoGen's industry and business. A review of these risks can be found in the "Risk Factors" set forth in Exhibit 99.1 to ImmunoGen's current report on Form 8-k, filed with the Securities and Exchange Commission on December 18, 2020 and subsequent documents filed with the Securities and Exchange Commission.

WHY IMMUNOGEN?



ACCELERATED PATH FOR
MIRVETUXIMAB IN PROC

*PIVOTAL DATA: Q3 2021
POTENTIAL APPROVAL: 2022*

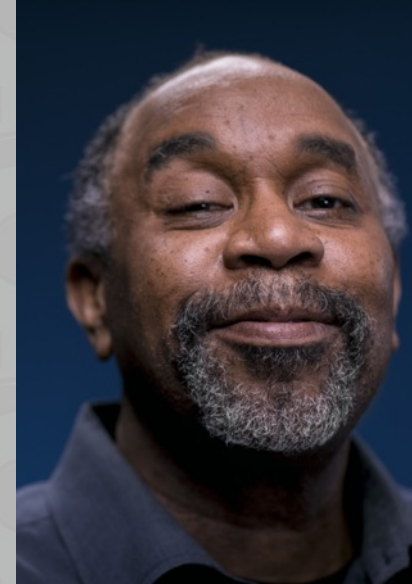


ANTICIPATED COMPENDIA
LISTINGS FOR
MIRVETUXIMAB
COMBINATIONS



PATH TO FULL APPROVAL
FOR IMGN632 IN BPDCN

*PIVOTAL DATA: 12-18 MONTHS
POTENTIAL APPROVAL: 2022*



INNOVATIVE EARLIER
STAGE CANDIDATES AND
ADVANCED ADC
TECHNOLOGY



EXPERIENCED LEADERSHIP
TEAM AND STRONG
CASH POSITION

POISED TO BECOME A FULLY-INTEGRATED ONCOLOGY COMPANY
WITH TWO PRODUCTS ON THE MARKET BY THE END OF 2022

STRATEGIC PRIORITIES

BRINGING ANTIBODY-DRUG CONJUGATES TO CANCER PATIENTS

COMPLETE
MIRVETUXIMAB
REGISTRATION STUDIES
AND PURSUE
OPPORTUNITIES TO
MOVE INTO EARLIER
LINES OF THERAPY

ADVANCE
PORTFOLIO OF
EARLIER STAGE
PRODUCT CANDIDATES
WITH A FOCUS ON
PATH TO FULL
APPROVAL FOR
IMGN632

FURTHER
STRENGTHEN
BALANCE SHEET AND
EXPAND CAPABILITIES
THROUGH
PARTNERSHIPS



SOMEONE YOU KNOW
HAS BEEN DIAGNOSED
WITH OVARIAN CANCER...

WHAT'S NEXT
FOR HER?

OVARIAN CANCER IS THE LEADING CAUSE OF DEATH FROM GYNECOLOGICAL CANCERS

>14,000 WOMEN DIE ANNUALLY FROM OVARIAN CANCER IN THE US¹

DIAGNOSIS

~22,000 WOMEN
DIAGNOSED ANNUALLY¹

PLATINUM- RESISTANT

DISEASE PROGRESSION
WITHIN 6 MONTHS AFTER
PLATINUM TREATMENT

URGENT
NEED

PLATINUM-BASED
CHEMOTHERAPY
+/- PARPi/BEV
MAINTENANCE

SURGERY

PLATINUM-SENSITIVE

DISEASE PROGRESSION MORE
THAN 6 MONTHS AFTER
PLATINUM TREATMENT

MOST PATIENTS DEVELOP PLATINUM- RESISTANT DISEASE: LIMITED OPTIONS WITH POOR OUTCOMES

- Low response rates and short PFS with current single agents^{2, 3}
- Significant toxicities associated with current treatments^{2, 3}

MIRVETUXIMAB SORAVTANSINE

KEY ATTRIBUTES

- Novel ADC with distinct FR α -binding antibody, cleavable linker, and maytansinoid DM4 payload
- Favorable tolerability profile
- Demonstrated activity in patients with FR α -positive platinum-resistant and platinum-sensitive ovarian cancer¹
- Sizeable safety database; studied in more than 700 patients

DEVELOPMENT STRATEGY

- Seek initial label as monotherapy in platinum-resistant ovarian cancer
- Move into earlier lines of therapy and become the combination agent of choice in ovarian cancer
- Lever cooperative groups and ISTs to generate complementary data in ovarian and endometrial cancers

DESIGNED TO DISPLACE CHEMOTHERAPY TO DELIVER
MORE GOOD DAYS FOR WOMEN WITH OVARIAN CANCER

ALIGNED WITH FDA RECOMMENDATIONS

Women with FR α -high platinum-resistant ovarian cancer that has progressed after prior treatment with bevacizumab require better therapeutic options

12%

ORR

EXPECTATION
FOR BEST AVAILABLE
THERAPIES^{1,2}

MIRVETUXIMAB: POTENTIAL FOR ACCELERATED APPROVAL

SUPPORTING DATA

POOLED POST-HOC ANALYSIS FROM PHASE 1 AND PHASE 3 FORWARD I STUDIES BEVACIZUMAB PRE-TREATED PATIENTS

Platinum-Resistant Ovarian Cancer, Primary PFI >3 Months, PS2+ Scoring Method, 1-3 Priors, n=70

31.4%
ORR

95% CI
(**20.9%**, 43.6%)

7.8 mos
mDOR

95% CI
(3.98, --)

REPLICATING THESE DATA IN A
SINGLE-ARM STUDY COULD SUPPORT
ACCELERATED APPROVAL



**SINGLE-ARM PIVOTAL TRIAL
FOR MIRVETUXIMAB
IN FR α -HIGH PATIENTS WITH
PLATINUM-RESISTANT
OVARIAN CANCER**

TARGET TIMELINES

**ENROLLING
GLOBALLY**

**TOP-LINE
DATA
Q3 2021**

**BLA
H2 2021**

PRIMARY ENDPOINT

ORR by Investigator

BICR for Sensitivity Analysis

SECONDARY ENDPOINT

DOR by Investigator

ENROLLMENT AND KEY ELIGIBILITY

~110 patients

Platinum-resistant disease (primary PFI >3 mos)

Prior bevacizumab required

Prior PARPi allowed

Patients with BRCA mutations allowed

MIRASOL

PHASE 3 RANDOMIZED TRIAL
FOR MIRVETUXIMAB IN FR α -HIGH
PATIENTS WITH PLATINUM-
RESISTANT OVARIAN CANCER

TARGET TIMELINES

ENROLLING
GLOBALLY

TOP-LINE
DATA
H1 2022

sBLA
2023

1:1 RANDOMIZATION

Mirvetuximab

STRATIFICATION FACTORS

IC Chemotherapy (Paclitaxel, PLD, Topotecan)
Prior Therapies (1 vs 2 vs 3)

Investigator's Choice
Chemotherapy
Paclitaxel, PLD, or Topotecan

PRIMARY ENDPOINT

PFS by Investigator
BICR for Sensitivity Analysis

SECONDARY ENDPOINTS

ORR by Investigator, OS, and PRO

ENROLLMENT AND KEY ELIGIBILITY

430 patients/330 events for PFS by Investigator
Platinum-resistant disease (primary PFI >3 mos)
Prior bevacizumab allowed*
Prior PARPi allowed
Patients with BRCA mutations allowed

MOVE INTO EARLIER LINES OF TREATMENT AND BECOME COMBINATION AGENT OF CHOICE IN OVARIAN CANCER

Full doses of mirvetuximab can be combined
with full doses of all agents studied ^{1, 2, 3}

Favorable safety data; adverse events in line
with known profiles of each agent

MIRVETUXIMAB + BEVACIZUMAB²

64% ORR

FR α -HIGH RECURRENT
OVARIAN CANCER
n= 33

- Compelling activity in FR α -high recurrent ovarian cancer, regardless of platinum status, compared to available therapies
 - 59% ORR (10/17) in the platinum-resistant subgroup
 - 69% ORR (11/16) in the platinum-sensitive subgroup

MIRVETUXIMAB + CARBOPLATIN³

80% ORR

15 MOS mPFS
FR α -MED and -HIGH
n= 10

- Highly active in recurrent platinum-sensitive ovarian cancer
- Supporting initiation of randomized Phase 2 ~140 patient IST in recurrent platinum-sensitive ovarian cancer as well as a ~70 patient neo-adjuvant IST in H1 2021

MIRVETUXIMAB TRIPLET⁴

MIRVETUXIMAB + BEVACIZUMAB + CARBOPLATIN

83% ORR

12.8 MOS mPFS
FR α -MED and -HIGH
n= 41

- Efficacy outcomes encouraging relative to current standard of care triplet regimens

EVALUATING COMBINATIONS FOR POTENTIAL LABEL EXPANSION WHILE
GENERATING DATA TO SUPPORT COMPENDIA LISTINGS

MIRVETUXIMAB MARKET OPPORTUNITY

ADDRESSING KEY SEGMENTS OF THE RECURRENT OVARIAN CANCER MARKET

SORAYA

~2,100
FR α -HIGH
PATIENTS

MONOTHERAPY
Bevacizumab Pre-Treated
2L-4L Platinum-Resistant

TOP-LINE RESULTS
Q3 2021

MIRASOL

~2,100
FR α -HIGH
PATIENTS

MONOTHERAPY
2L-4L Platinum-Resistant

TOP-LINE RESULTS
H1 2022

FORWARD II
MIRV + BEV

~2,700
FR α -HIGH
PATIENTS

COMBINATION
Recurrent

POTENTIAL FOR
Compendia Listing in 2022

FORWARD II
MIRV + CARBO

~2,000
FR α -HIGH
PATIENTS

COMBINATION
Platinum-Sensitive

POTENTIAL FOR
Compendia Listing in 2023

~40% OF OVARIAN CANCER PATIENTS ARE FR α -HIGH EXPRESSORS

MIRVETUXIMAB FOR OVARIAN CANCER



ROBUST DATA IN MORE THAN 700 PATIENTS

- Strong and consistent efficacy data in FR α -high patients
- Favorable tolerability profile
- Selection assay identifies patients most likely to benefit

SORAYA: POTENTIAL PATH TO ACCELERATED APPROVAL

- Enrolling patients globally
- Top-line data expected in Q3 2021
- BLA expected by the end of 2021 with potential for accelerated approval in 2022

MIRASOL: DESIGNED TO PROVIDE DATA TO SUPPORT FULL APPROVAL

- Enrolling patients globally
- Top-line data expected in H1 2022
- Potential for full approval in 2023

COMBINING TO DEVELOP MIRVETUXIMAB FOR EARLIER LINES OF THERAPY

- Mature MIRV + BEV data in recurrent ovarian cancer to be presented at ASCO 2021
- Planning for label expansion and compendia listings

PREPARING FOR COMMERCIALIZATION

- Pre-commercial activities underway in the US
- Strategic collaboration with Huadong established to develop and commercialize mirvetuximab in mainland China, Hong Kong, Macau, and Taiwan

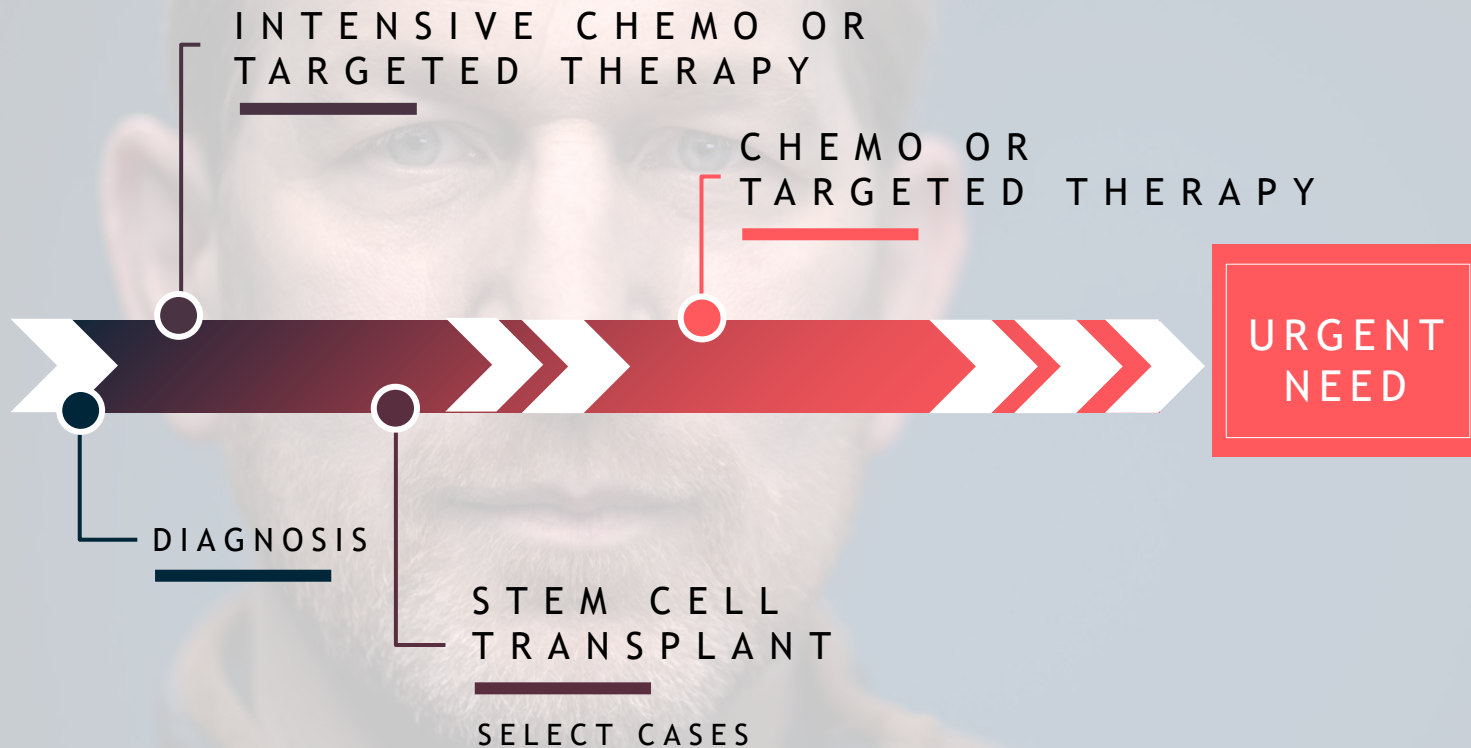


SOMEONE YOU KNOW
HAS BEEN DIAGNOSED
WITH BPDCN...

WHAT'S NEXT?

BPDCN IS A RARE AND AGGRESSIVE HEMATOLOGIC MALIGNANCY

~500-1,000 NEW CASES DIAGNOSED ANNUALLY IN THE US¹
60% TO 70% BECOME R/R



OUTCOMES
REMAIN POOR,
PARTICULARLY FOR
NON-TRANSPLANT
CANDIDATES

CURRENTLY APPROVED
THERAPIES REQUIRE INPATIENT
HOSPITALIZATION AND
ARE ASSOCIATED WITH
SIGNIFICANT TOXICITIES

IMGN632

KEY ATTRIBUTES

- CD123-targeted ADC with novel DNA-acting payload
- Demonstrated activity with complete responses in BPDCN^{1,2} and AML¹
- Favorable safety and tolerability observed at multiple dose levels^{1,2}
- Administered in the outpatient setting via short (less than 30 minutes) infusion every three weeks

DEVELOPMENT STRATEGY

- Fast-to-market in BPDCN patients; granted Breakthrough Therapy Designation and aligned with FDA on a pathway to full approval
- Potential label expansion: in combination for relapsed AML and frontline AML patients unfit for intensive induction chemotherapy; monotherapy in frontline MRD+ AML
- Seek proof of concept in additional CD123-positive hematologic malignancies including ALL

DESIGNED TO TARGET MULTIPLE CD123+
HEMATOLOGIC MALIGNANCIES

ASH 2020 CONCLUSIONS¹

FAVORABLE SAFETY PROFILE

- No capillary leak syndrome
- No drug-related discontinuations
- No drug-related deaths
- Limited grade ≥ 3 TEAEs

EFFICACY

In all R/R BPDCN patients:

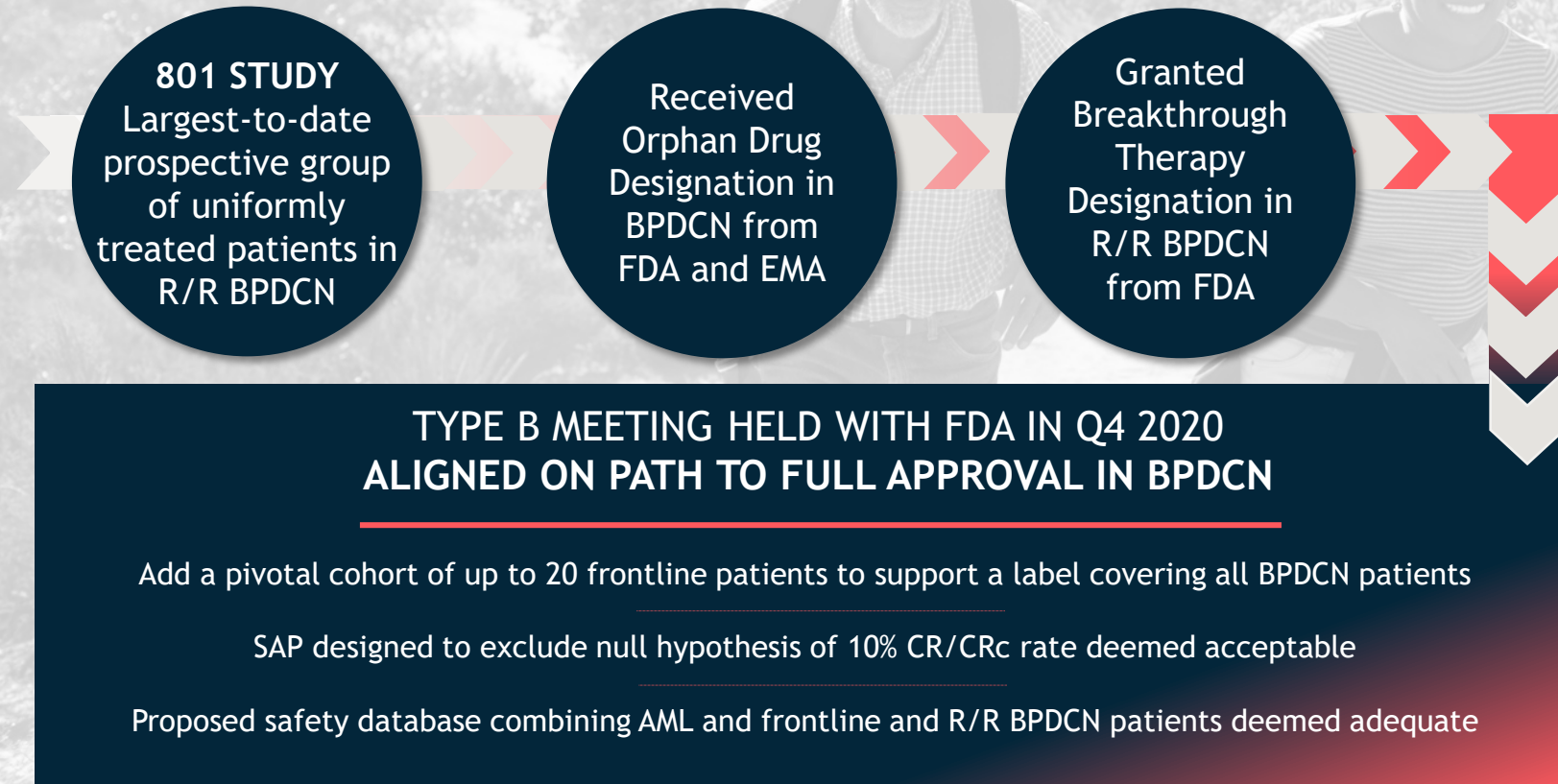
- ORR: 29% (8/28, 2 CR, 2 CRc, 1 CRi, 3 PR)
- CCR: 18% (5/28)

In patients with prior tagraxofusp exposure:

- ORR: 31% (4/13, 1 CR, 1CRi, 2 PR)
- CCR: 15% (2/13)

IMGN632

PATHWAY TO FULL APPROVAL IN BPDCN



¹ASH 2020 Oral Presentation; Pemmaraju, N., et al.

801 PIVOTAL COHORT DESIGN

**SINGLE-ARM PIVOTAL
COHORT FOR IMGN632
IN FRONTLINE BPDCN**

TARGET TIMELINES

**ENROLLING
IN THE
US AND EU**

**ENROLLMENT AND
TOP-LINE DATA
12-18
MONTHS**

**BLA
2022**

PRIMARY ENDPOINT
CR plus CRc

SECONDARY ENDPOINT
Duration of CR/CRc

ENROLLMENT AND KEY ELIGIBILITY
Up to 20 frontline patients
Includes patients with prior local therapy
Patients ≥ 18 years old
CD123+ by flow cytometry or IHC
No minimum serum albumin required

SUPPORTING DATA
3 patients previously enrolled in Study 801 meet the eligibility criteria for the frontline cohort; all 3 of these patients have achieved CR/CRc

IMGN632 IN AML

ANTICIPATE INITIAL COMBINATION DATA IN MID-2021

PRE-CLINICAL COMBINATION DATA¹

- IMGN632+VEN+AZA triplet significantly improved survival compared to VEN+AZA doublet in CD123+ AML patient-derived xenograft models
- Triplet demonstrated significant improvement in survival in a model sensitive to VEN+AZA
- In two models refractory to VEN+AZA, triplet demonstrated the potential to overcome VEN+AZA resistance

PATH FORWARD

- Actively enrolling R/R AML patients in a Phase 1b/2 dose escalation and expansion study
- Working to determine recommended Phase 2 dose and schedule for combination regimens
- No dose limiting toxicities reported, including none in the triplet cohort

EVALUATING COMBINATION DOUBLET AND TRIPLET REGIMENS OF IMGN632
PLUS AZACITIDINE AND/OR VENETOCLAX

ADVANCING OUR PORTFOLIO OF EARLIER STAGE PRODUCT CANDIDATES

IMGC936

CONTINUED INNOVATION
GENERATING DIFFERENTIATED ADCs

- First-in-class ADAM9-targeting therapy
- ADAM9 is overexpressed in multiple solid tumors (e.g., non-small cell lung, gastric, pancreatic, triple-negative breast, and colorectal)¹ but has a low level of expression in normal tissues/cells
- Comprised of high-affinity humanized antibody with YTE mutation conjugated to DM21, a highly potent next-generation maytansinoid payload, with a stable peptide linker
- 50/50 co-development with MacroGenics; first patient dosed November 2020

ADVANCING OUR PORTFOLIO OF EARLIER STAGE PRODUCT CANDIDATES

IMGN151

CONTINUED INNOVATION
GENERATING DIFFERENTIATED ADCs

- Next-generation anti-FR α ADC designed to have improved activity against tumors with a broad range of FR α -expression (e.g., ovarian, endometrial, triple-negative breast, and non-small cell lung cancer)¹
- Comprised of a bivalent, biparatopic antibody targeting two independent epitopes of FR α conjugated to DM21, a highly potent next-generation maytansinoid payload, with a stable peptide linker
- In preclinical development; IND expected by end of 2021

OUR APPROACH TO PARTNERING

MAXIMIZE THE VALUE OF OUR STRATEGIC PROGRAMS
BY RISK SHARING AND PARTNERING FOR CAPABILITIES



**HUADONG
MEDICINE**

Development and commercialization
of mirvetuximab in Greater China



Global co-development and
co-commercialization of IMGC936

RICH PORTFOLIO OF EARLY-STAGE IP PROVIDES
OPPORTUNITIES FOR PARTNERSHIPS AND PIPELINE EXPANSION

OUT-LICENSING

Key legacy licenses enabled KADCYLA® (Roche/Genentech), SARCLISA® (Sanofi); current licenses to nine parties for cancer and non-cancer applications

IP AND KNOW-HOW

Portfolio comprised of latest generation of maytansinoid, IGN, and novel camptothecin toxins, associated linkers, and antibodies

OUR PATH TO BECOMING A FULLY-INTEGRATED ONCOLOGY COMPANY

2021 Milestones



MIRVETUXIMAB

- Complete enrollment in pivotal SORAYA trial
- Share top-line SORAYA data in Q3 2021 and submit BLA by end of 2021
- Present mature MIRV + BEV data in recurrent ovarian cancer at ASCO 2021
- Support initiation of neoadjuvant and platinum-sensitive MIRV + CARBO ISTs



IMGN632

- Continue enrollment in frontline and R/R BPDCN monotherapy cohorts
- Present mature R/R BPDCN and initial AML combination data at ASH 2021
- Continue evaluation of triplet combination in AML and MRD+ monotherapy



IMG936

- Continue enrollment in Phase 1 dose escalation study
- Potential for initial data by late 2021



IMGN151

- Continue pre-clinical development work
- Submit IND in H2 2021

TARGET A BETTER NOW

IMPORTANT CATALYSTS IN 2021 FOR LEAD MIRVETUXIMAB PROGRAM
PIVOTAL DATA IN Q3 AND BLA BY YEAR-END

PATH TO FULL APPROVAL FOR IMGN632 IN BPDCN ESTABLISHED
ENROLLMENT AND TOP-LINE DATA IN 12-18 MONTHS AND BLA IN 2022

INNOVATIVE EARLIER STAGE CANDIDATES IN SOLID TUMORS
IMGC936: FIRST-IN-CLASS ADAM9-TARGETING ADC IN THE CLINIC
IMGN151: NEXT-GENERATION FR α -TARGETING ADC IND EXPECTED BY YEAR-END
LEADING ADC TECHNOLOGY

ADVANCING TO FULLY-INTEGRATED ONCOLOGY COMPANY
POTENTIAL FOR TWO MARKETING PRODUCTS IN 2022
STRONG CASH POSITION AND EXPERIENCED MANAGEMENT TEAM