SORAYA Investor Event

March 20, 2022

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FORWARD-LOOKING STATEMENTS

This presentation includes forward-looking statements. These statements include, but are not limited to, ImmunoGen's current expectations related to: the design and potential success of ImmunoGen's mirvetuximab soravtansine preclinical and clinical studies and regulatory pathways, including the timing of initiating and receiving data from, as well as the likelihood of success of, the studies for mirvetuximab; the potential of mirvetuximab to become a standard of care; the potential of mirvetuximab to become a combination agent of choice; the presentation of preclinical and clinical events related to mirvetuximab; and the Company's business and product development strategies. 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. We undertake no obligation to update or revise any of these forward-looking statements except as may be required by applicable law. Factors that could cause future results to differ materially from such expectations include, but are not limited to: the difficulties inherent in the development of novel biopharmaceuticals; the risks and uncertainties inherent in the Company's development programs, including its preclinical and clinical studies and regulatory processes, their timing, expense, and results as well as the possibility that studies of the Company's development programs fail to confirm the hypotheses suggested by exploratory analyses or fail to satisfy the requirements for approval by one or more regulatory agencies; the Company's ability to financially support its development programs; 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 and other risks can be found in the "risk factors" set forth in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 28, 2022, and other reports filed with the Securities and Exchange Commission and available at www.sec.gov and on our website at immunogen.com.

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Agenda

1. Welcome
2. Full Results from the SORAYA Study
3. Ovarian Cancer Expert Panel
4. Q&A

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Efficacy and Safety of Mirvetuximab Soravtansine in Patients With Platinum-Resistant Ovarian Cancer With Positive (High) Folate Receptor Alpha Expression: Results From the SORAYA Study

Ursula Matulonis, MD
Chief of the Division of Gynecologic Oncology at the Dana-Farber Cancer Institute, Professor of Medicine at the Harvard Medical School, and SORAYA Co-Principal Investigator

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Financial Disclosures and Investigational Uses

FINANCIAL DISCLOSURES

- I have the following financial relationships with ACCME-defined ineligible companies to report over the past 24 months:
  - Consulting: Novartis, AstraZeneca, Merck, GSK, Trillium, Blueprint Medicines, Agenus (all ongoing)
  - Scientific Advisory Boards: ImmunoGen, NextCure, Ovarian Cancer Research Alliance, Rivkin Foundation, Clearity (all ongoing)
  - Data Safety Monitoring Boards: Symphogen, Alkermes, Advaxis

INVESTIGATIONAL USES

- Mirvetuximab soravtansine is not approved for use outside of clinical trials

Background

- Treatment options for platinum-resistant ovarian cancer are limited, consisting primarily of single-agent chemotherapy as many patients will have received prior bevacizumab
- Single-agent chemotherapy has limited activity (ORR 4%–13%) and considerable toxicity[1–12]
- No known biomarker-directed therapy is indicated specifically for patients with platinum-resistant disease
- Ovarian cancer overexpresses folate receptor α (FRα); FRα is associated with poor clinical outcomes[13–15]
- Mirvetuximab soravtansine (MIRV) is a first-in-class antibody-drug conjugate comprising an FRα-binding antibody, cleavable linker, and maytansinoid DM4, a potent tubulin-targeting agent
- Pooled analysis from previous studies with MIRV identified 70 patients with FRα-high platinum-resistant ovarian cancer, 1–3 priors, all with prior bevacizumab: ORR, 31.4%; mDOR, 7.8 months; and mPFS, 4.4 months[11,16–18]

SORAYA is a global, single-arm, phase 3 study evaluating MIRV in adult patients with FRα-high platinum-resistant high-grade serous epithelial ovarian, primary peritoneal, or fallopian tube cancers.

Primary Endpoint: Confirmed ORR by Investigator | Key Secondary Endpoint: Duration of Response

Mirvetuximab soravtansine is an investigational product candidate and has not been approved by the FDA.

FRα, folate receptor alpha; mDOR, median duration of response; ORR, confirmed objective response rate; mPFS, median progression-free survival.

1. ten Bokkel Huinink W, et al. J Clin Oncol. 1997;15(6):2183-2193. 2. Gore M, et al. Eur J Cancer. 2002;38(1):57-63. 3. Mutch DG, et al. J Clin Oncol. 2007;25(19):2811-2818. 4. Vergote I, et al. Eur J Cancer. 2009;45(13):2324-2332. 5. Vergote I, et al. Int J Gynecol Cancer. 2010;20(5):772-780. 6. Sehouli J, et al. J Clin Oncol. 2011;29(2):242-248. 7. Colombo N, et al. J Clin Oncol. 2012;30(31):3841-3847. 8. Pujade-Lauraine E, et al. J Clin Oncol. 2014;32(13):1302-1308. 9. Gaillard S, et al. Gynecol Oncol. 2021;163(2):237-245. 10. Hamanishi J, et al. J Clin Oncol. 2021;39(33):3671-3681. 11. Moore KN, et al. Ann Oncol. 2021;32(6):757-765. 12. Pujade-Lauraine E, et al. Lancet Oncol. 2021;22(7):1034-1046. 13. Crane LM, et al. Cell Oncol (Dordr). 2012;35(1):9-18. 14. Kalli KR, et al. Gynecol Oncol. 2008;108(3):619-626. 15. Chen YL, et al. Mol Oncol. 2012;6(3):360-369. 16. Moore KN, et al. Poster presented at: ASCO 2017 (abstr 5547). 17. Moore KN, et al. Presented at: ESMO 2019 (abstr 9920). 18. Data on file. ImmunoGen.

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Baseline Demographics and Clinical Characteristics

Characteristic		All Patients (N=106)
Age, median (range)		62 (35-85 years)
Primary cancer diagnosis,* n (%)	Epithelial ovarian cancer	85 (80)
	Fallopian tube cancer	8 (8)
	Primary peritoneal	12 (11)
Stage at initial diagnosis,† n (%)	I - II	2 (2)
	III	63 (59)
	IV	40 (38)
BRCA mutation, n (%)	Yes	21 (20)
	No/unknown	85 (80)
No. of prior systemic therapies, n (%)	1	10 (9)
	2	41 (39)
	3	54 (51)
Prior exposure, n (%)	Bevacizumab	106 (100)
	PARP inhibitor	51 (48)
Primary platinum-free interval, n (%)	3-12 months†	64 (60)
	>12 months	42 (40)
Platinum-free interval, n (%)	0-3 months	39 (37)
	3-6 months	64 (60)

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Data cutoff: November 16, 2021.

Patients with ECOG PS of 0, n=60 (57%); 1, n=46 (43%).

*Primary cancer diagnosis includes 1 patient with serous tubal intraepithelial carcinoma. †One patient missing information for stage at initial diagnosis. ‡Includes 1 patient with primary platinum-free interval of 2.8 months.

ECOG PS, Eastern Cooperative Oncology Group performance status; PARP, poly ADP-ribose polymerase.

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Efficacy Endpoints Assessed by Investigator and BICR

Endpoints	Investigator-Assessed (N=105)	BICR-Assessed (N=95)
ORR, n (%)	**34 (32.4)**	**30 (31.6)**
95% CI	[23.6, 42.2]	[22.4, 41.9]
Best overall response, n (%)		
Complete response	**5 (4.8)**	**5 (5.3)**
Partial response	29 (27.6)	25 (26.3)
Stable disease	48 (45.7)	53 (55.8)
Progressive disease	20 (19.0)	8 (8.4)
Not evaluable	3 (2.9)	4 (4.2)
mDOR,* months	**6.9**	**11.7**
95% CI	[5.6, 8.1]	[5.0, NR]
mPFS, months	**4.3**	**5.5**
95% CI	[3.7, 5.1]	[3.8, 6.9]

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Data cutoff: November 16, 2021, investigator-assessed DOR: March 3, 2022.
BICR, blinded independent central review; CI, confidence interval; DOR, duration of response; mDOR, median duration of response; MIRV, mirvetuximab soravtansine; mPFS, median progression-free survival; NR, not reached; ORR, confirmed objective response rate; RECIST v1.1, Response Evaluation Criteria in Solid Tumors.

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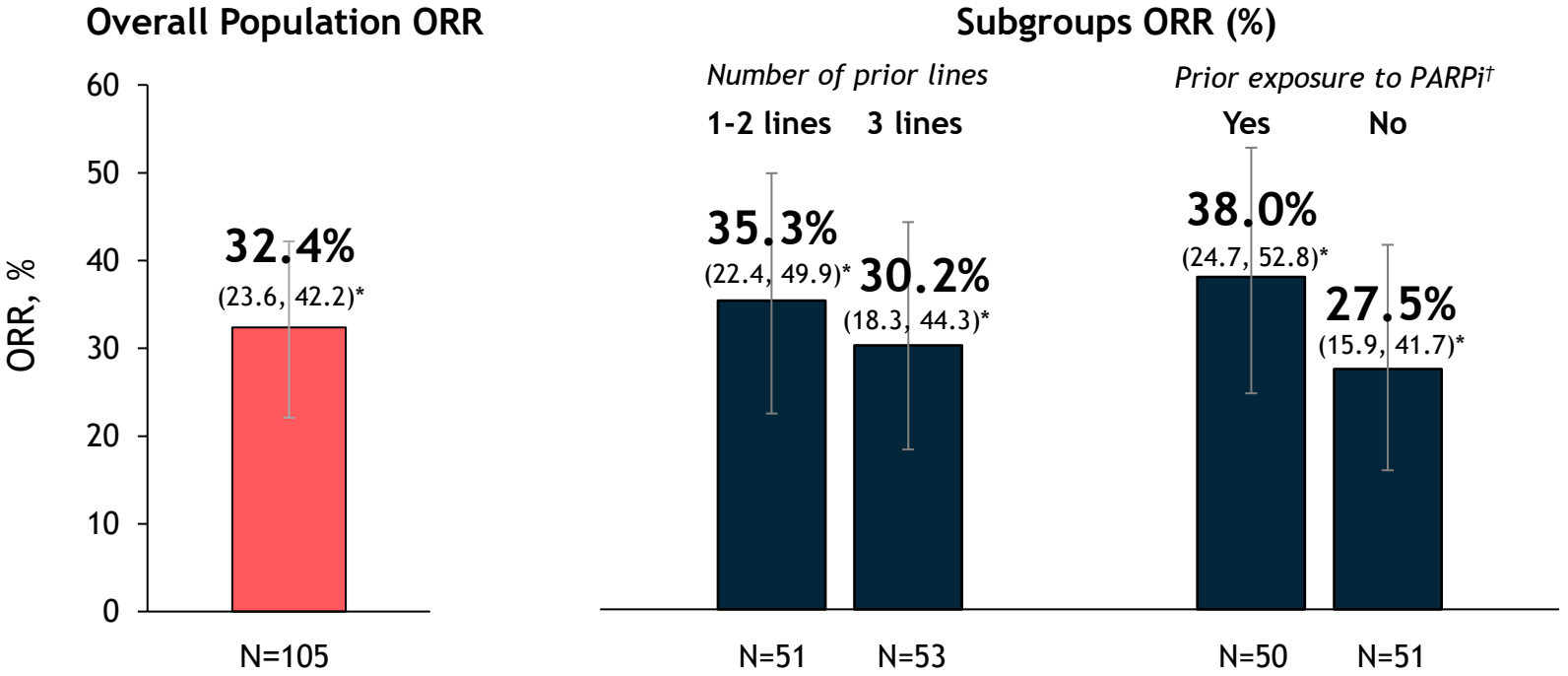
Investigator-Assessed Objective Response Rate by Prior Therapy



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The denominator for the percentage is the number of patients in the investigator-assessed population in each of the analyses. Patients without at least 1 postbaseline RECIST assessment were treated as not evaluable.

*95% exact confidence interval is estimated by Clopper-Pearson method (Clopper-Pearson exact CI). †Prior PARPi exposure was uncertain for 4 patients in the investigator-assessed population.

ORR, objective response rate; PARPi, poly ADP-ribose polymerase inhibitor; RECIST, Response Evaluation Criteria in Solid Tumors.

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Treatment-Related Adverse Events (≥10%)

TRAEs, n (%)	All Grades	Grade 3	Grade 4
Patients with any event	91 (86)	29 (27)	1 (1)
Blurred vision	43 (41)	6 (6)	0 (0)
Keratopathy*†	38 (36)	8 (8)	1 (1)
Nausea	31 (29)	0 (0)	0 (0)
Dry eye	24 (23)	2 (2)	0 (0)
Fatigue	24 (23)	1 (1)	0 (0)
Diarrhea	23 (22)	2 (2)	0 (0)
Asthenia	16 (15)	1 (1)	0 (0)
Photophobia	15 (14)	0 (0)	0 (0)
Peripheral neuropathy	13 (12)	0 (0)	0 (0)
Decreased appetite	13 (12)	1 (1)	0 (0)
Vomiting	12 (11)	0 (0)	0 (0)
Neutropenia	11 (10)	1 (1)	0 (0)

- Most AEs were low-grade, reversible ocular and GI events
- Serious grade ≥3 TRAEs were reported in 8% of patients
- TRAEs led to dose delay in 32% and dose reduction in 19%
- 7 patients (7%) discontinued treatment due to TRAEs
- 1 death was recorded as possibly related to study drug
  - Respiratory failure
  - Autopsy: No evidence of drug reaction; lung metastases

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Data cutoff: November 16, 2021.

*The grouped preferred term "Keratopathy" includes the following preferred terms: "corneal cyst," "corneal disorder," "corneal epithelial microcysts," "keratitis," "keratopathy," "limbal stem cell deficiency," "corneal opacity," "corneal erosion," "corneal pigmentation," "corneal deposits," "keratitis interstitial," "punctate keratitis," and "corneal epithelial defect." †One patient experiencing a grade 4 event recorded as keratopathy was based upon the visual acuity evaluation of one eye (20/200). This patient had confirmed grade 2 corneal changes, and both the visual acuity and these corneal changes resolved completely (grade 0) in 15 days by ophthalmic exam.

AE, adverse event; GI, gastrointestinal; TRAEs, treatment-related adverse events.

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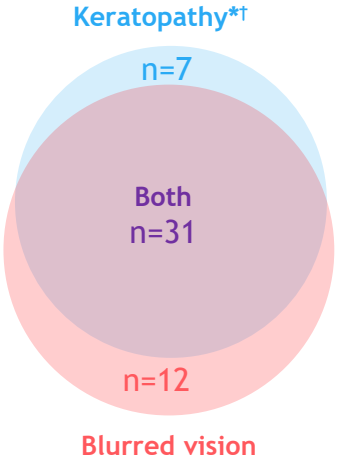
Events Specific to MIRV: Keratopathy and Blurred Vision

Events developed in 50/106 (47%) patients: mostly low grade



- **Proactive supportive care**
  - Lubricating artificial tears
  - Corticosteroid eye drops
- **Predictability**
  - Median time to onset: cycle 2 (~1.5 months)
- **Manageable with dose modifications, if needed**
  - 22% of patients (23/106) had dose delay and/or reduction
  - Majority of patients with ocular AEs required no dose modifications
- **Reversibility**
  - At data cutoff: >80% of patients with grade 2–3 events had resolved to grade 0–1
    - 9 patients still receiving MIRV or being followed up for resolution
- **<1% discontinuation due to ocular events**
  - 1 of 106 patients discontinued due to grade 4 keratopathy,† which resolved within 15 days

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Data cutoff: November 16, 2021.

The grouped preferred term "Keratopathy" includes the following preferred terms: "corneal cyst," "corneal disorder," "corneal epithelial microcysts," "keratitis," "keratopathy," "limbal stem cell deficiency," "corneal opacity," "corneal erosion," "corneal pigmentation," "corneal deposits," "keratitis interstitial," "punctate keratitis," and "corneal epithelial defect." †One patient experiencing a grade 4 event recorded as keratopathy was based upon the visual acuity evaluation of one eye (20/200). This patient had confirmed grade 2 corneal changes, and both the visual acuity and these corneal changes resolved completely (grade 0) in 15 days by ophthalmic exam.

MIRV, mirvetuximab soravtansine; AEs: adverse events.

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Conclusions

- MIRV demonstrated clinically meaningful antitumor activity in patients with FRα-high platinum-resistant ovarian cancer
  - **ORR: 32.4%** investigator-assessed, including 5 complete responses
  - **Median DOR: 6.9 months**
  - Consistent antitumor activity regardless of prior number of therapies or prior PARPi
- The safety and tolerability profile of MIRV in SORAYA is consistent with that observed in previous studies
  - Mostly low-grade, reversible ocular and GI events, manageable with supportive care
  - No appreciable myelosuppression and limited low-grade neuropathy
  - TRAEs led to dose delay in 32%, dose reduction in 19%, and treatment discontinuation in 7% of patients
- We believe these results show the potential for MIRV to become a practice-changing, biomarker-driven standard of care treatment option for patients with FRα-positive platinum-resistant ovarian cancer

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DOR, duration of response; FRα, folate receptor alpha; GI, gastrointestinal; MIRV, mirvetuximab soravtansine; ORR, confirmed objective response rate
PARPi, poly ADP-ribose polymerase inhibitor; TRAEs, treatment-related adverse events.

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Ovarian Cancer Expert Panel Discussion

Moderated by Anna Berkenblit, MD
SVP and Chief Medical Officer, ImmunoGen

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Ovarian Cancer Expert Panel

Robert Coleman, MD
Chief Scientific Officer of US Oncology Research
SORAYA Co-Principal Investigator

Gottfried Konecny, MD
Professor and Lead Clinician for Gynecologic Oncology in the Department of Medicine at UCLA

Ursula Matulonis, MD
Chief of the Division of Gynecologic Oncology at the Dana-Farber Cancer Institute, Professor of Medicine at the Harvard Medical School
SORAYA Co-Principal Investigator

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Putting the PFS data from SORAYA into context….

What are the best data to provide insights into the potential PFS of MIRASOL?

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SORAYA Results Consistent with those from the Phase 1 and Phase 3 (FORWARD I) 70 Patient Pooled Post-hoc Analysis

POOLED POST-HOC ANALYSIS: PH1 & FORWARD I [1,2,3] PROC, FRα-High via PS2+ Scoring, n=70, 100% prior BEV 1-3 Priors (60% 1-2, 40% 3)[5]; 21% prior PARPi[6]		SORAYA [4] PROC, FRα-High via PS2+ Scoring, n=106, 100% prior BEV 1-3 Priors (49% 1-2, 51% 3); 48% prior PARPi	
31.4% ORR	95% CI (20.9%, 43.6%)	**32.4% ORR**	95% CI (23.6%, 42.2%)
7.8 mos mDOR	95% CI (4.0, --)	**6.9 mos mDOR**	95% CI (5.5, 8.1)
4.4 mPFS	95% CI (3.9, 7.0)	**4.3 mPFS**	95% CI (3.7, 5.1)

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Note: All data as assessed by Investigator; Data reflect an exploratory post-hoc analysis and should be considered accordingly.
[1]ASCO 2017 Poster; Moore, K., et al. [2]ESMO 2019 FORWARD I Oral Presentation; Moore, K., et al. [3]Internal data on file. [4]GO 2022 Oral Presentation; Matulonis, U., et al.

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MIRASOL Population is Expected to be Similar to FORWARD I, Less Heavily Pre-Treated Than SORAYA

FORWARD I (Exploratory Analysis) [1] PROC, FRα-High via PS2+ Scoring, n=116 (2:1) **Overall, 65% 1-2 priors; 35% 3 priors; ~50% prior BEV** **~10% prior PARPi**		MIRASOL PROC, FRα-High via PS2+ Scoring, n=440 **Expect similar % 1-2 vs 3 priors, % prior BEV as in FWD I** **Expect higher % prior PARPi vs FWD I**
5.6 **mPFS by Inv**	**HR: 0.619** (0.394, 0.975) mPFS: 5.6 vs 3.7 months	Design considerations: **HR 0.7** **mPFS of IC chemotherapy 3.5 months**
5.6 **mPFS by BICR**	**HR: 0.549** (0.336, 0.897) mPFS: 5.6 vs 3.2 months	

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[1]ESMO 2019 FORWARD I Oral Presentation; Moore, K., et al.
IC: investigator's choice
Note: Data reflect an exploratory post-hoc analysis and should be considered accordingly.

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Q&A

APPENDIX

Expanding the Mirvetuximab Label: Move Into Platinum-sensitive Disease, Potentially Becoming the Combination Agent of Choice in Ovarian Cancer

MIRVETUXIMAB PSOC MONOTHERAPY

PHASE 1 EFFICACY DATA[1]

64% ORR

FRα-HIGH RECURRENT OVARIAN CANCER
n= 11

- Potential activity in FRα-high recurrent platinum-sensitive ovarian cancer
  - 64% ORR (7/11); 2 CRs and 5 PRs

PICCOLO

- Single-arm Phase 2 trial for mirvetuximab in FRα-high patients with platinum-sensitive ovarian cancer
- Now enrolling
- Potential for label expansion in 2024

MIRVETUXIMAB IN COMBINATION

MIRVETUXIMAB + BEVACIZUMAB[2,3]

64% ORR

FRα-HIGH RECURRENT OVARIAN CANCER
n= 33

- Encouraging activity in FRα-high recurrent ovarian cancer, regardless of platinum status
  - 59% ORR (10/17), 9.4 month mDOR, 9.7 month mPFS in the platinum-resistant subgroup
  - 69% ORR (11/16), 12.7 month mDOR, 13.3 month mPFS in the platinum-sensitive subgroup

GLORIOSA

- Randomized Phase 3 trial for mirvetuximab + bevacizumab maintenance in FRα-high platinum-sensitive ovarian cancer
- Aligned with FDA on trial design
- Trial initiation in Q2 2022

MIRVETUXIMAB + CARBOPLATIN[4]

80% ORR

15 MOS mPFS
FRα-MED and -HIGH
n= 10

- Highly active in recurrent platinum-sensitive ovarian cancer with mDOR of 24 months
- Supporting ongoing ISTs in recurrent platinum-sensitive ovarian cancer: ~70 patient neo-adjuvant study initiated in H1 2021; and a randomized Phase 2 ~140 patient study

TRIAL 420

- Single-arm Phase 2 trial for mirvetuximab + carboplatin followed by mirvetuximab continuation in FRα-low, medium, and high patients with platinum-sensitive ovarian cancer
- Initiate trial in Q2 2022

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[1]Internal data on file. [2]ASCO 2020 Oral Presentation; Gilbert, L., et al. [3]ASCO 2021 Oral Presentation; O'Malley, D., et al. [4]Gynecologic Oncology 151 (2018) 46-52.
PSOC: platinum-sensitive ovarian cancer; ORR: objective response rate; FRα: folate receptor alpha; CR: complete response; PR: partial response; mDOR: median duration of response mPFS: median progression-free survival; IST: investigator sponsored trial; FDA: Food and Drug Administration

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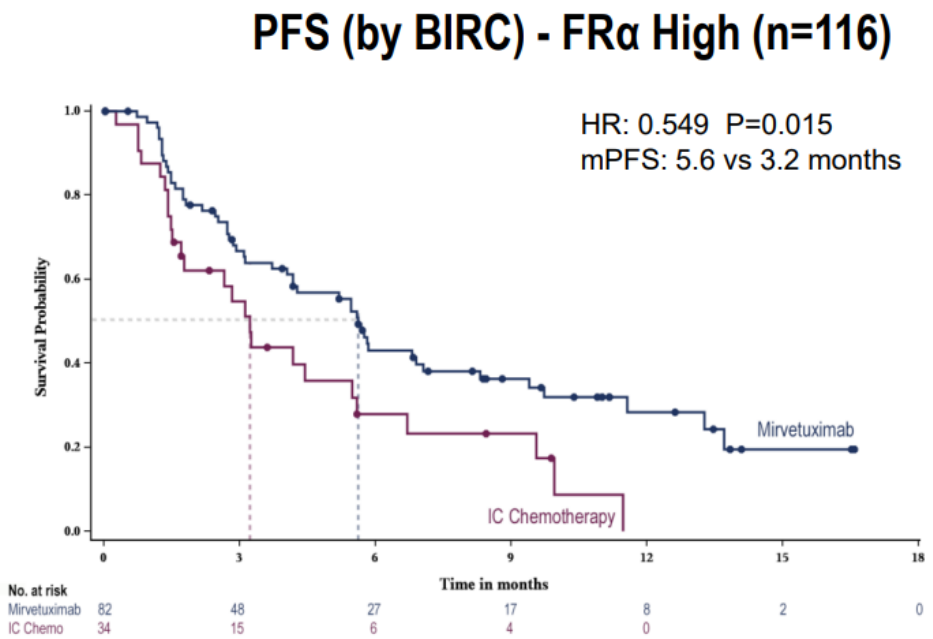
PFS in FORWARD I Exploratory PS2+ FRα High Subgroup[1]



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[1]ESMO 2019 FORWARD I Oral Presentation; Moore, K., et al.
Data reflect an exploratory post-hoc analysis and should be considered accordingly.

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This presentation is dedicated to the patients and their families who participated in the SORAYA clinical trial.

We thank all of the clinical investigators and research teams.

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Participating Sites

Massachusetts General Hospital Boston, MA, USA	Medical Center at Mount Sinai New York, NY, USA	Stanford Health Care Stanford, CA, USA	Hospital Universitari Germans Trias i Pujol Barcelona, Spain	SP ZOZ Ministerstwa Spraw Wewnętrznych z Warmińsko - Mazurskim Centrum Onkologii Olsztyn, Poland	Policlinico S. Orsola-Malpighi Bologna, Italy	St James's Hospital Dublin, Leinster, Ireland
Tennessee Oncology Nashville, TN, USA	USOR, Investigational Product Center Irving, TX, USA	Universitair Ziekenhuis Leuven Leuven, Belgium	Institut Català d'Oncologia Badalona Barcelona, Spain	Instytut Centrum Zdrowia Matki Polki Łódź, Poland	Istituto Nazionale Tumori - G. Pascale Napoli, Italy	Všeobecná fakultní nemocnice v Praze Prague, Czech Republic
University of Kansas Hospital Westwood, KS, USA	St. Tammany Parish Hospital Pharmacy Covington, LA, USA	Universitair Ziekenhuis Ghent Ghent, Belgium	Hospital Teresa Herrera A Coruña, Spain	Specjalistyczna Przychodnia Lekarska Medicus Chorzow, Silesia Province, Poland	Istituto Oncologico Candiolo - I.R.C.C.S Candiolo (Torino), Italy	Universitätsklinikum Mannheim, Baden-Württemberg, Germany
Dana-Farber Cancer Institute Boston, MA, USA	Research Medical Center Kansas City, MO, USA	Cliniques Universitaires Saint Luc Bruxelles, Belgium	IOR-Hospital Quiron Dexeus Barcelona, Spain	Sheba Medical Center Ramat Gan, Israel	ASST degli Spedali Civili di Brescia Brescia, Italy	Kliniken Essen Mitte Apotheke Essen, Germany
Sarasota Memorial Health Cancer Center Sarasota, FL, USA	Holy Name Medical Center Teaneck, NJ, USA	Centre Hopsitalier de l'Ardenne Luxembourg, Belgium	Hospital Clínico San Carlos Madrid, Spain	Meir Medical Center Kfar Saba, Israel	Ospedale Cannizzaro di Catania Catania, Italy	River City Pharmacy (ICON Cancer Care) Auchenflower, QLD, Australia
Center of Hope Reno, NV, USA	Florida Cancer Specialists West Palm Beach, FL, USA	CHU UCL Namur / St. Elisabeth Namur, Belgium	Hospital Universitario Reina Sofia, Córdoba, Spain	Hadassah Ein Kerem Medical Center Jerusalem, Israel	Bon Secours Hospital Cork, Munster, Ireland	St John of God Subiaco Hospital Subiaco, WA, Australia
Memorial Sloan-Kettering Cancer Center New York, NY, USA	UW Health - University Hospital Madison, WI, USA	MD Anderson Cancer Center Madrid, Spain	Hospital Clínico de Valencia Valencia, Spain	Ziv Medical Center Safed, Israel	Mater Misericordiae University Hospital Dublin, Leinster, Ireland	PSEHOG - Slade Pharmacy Subiaco, WA, Australia
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Hospital La Paz Madrid, Spain	Clínica Universidad de Navarra Madrid, Spain	Istituto Europeo di Oncologia Milano, Italy	Cork University Hospital Cork, Munster, Ireland	City of Hope Duarte, CA, USA	Kadlec Clinic Hematology and Oncology Kennewick, WA, USA	Northside Hospital, Inc. Atlanta, GA, USA
ICO Hospitalet Barcelona, Spain	Complex Oncology Center Burgas, Bulgaria	Fondazione Policlinico Universitario Agostino Gemelli Rome, Italy	Beaumont Hospital Dublin, Ireland			

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