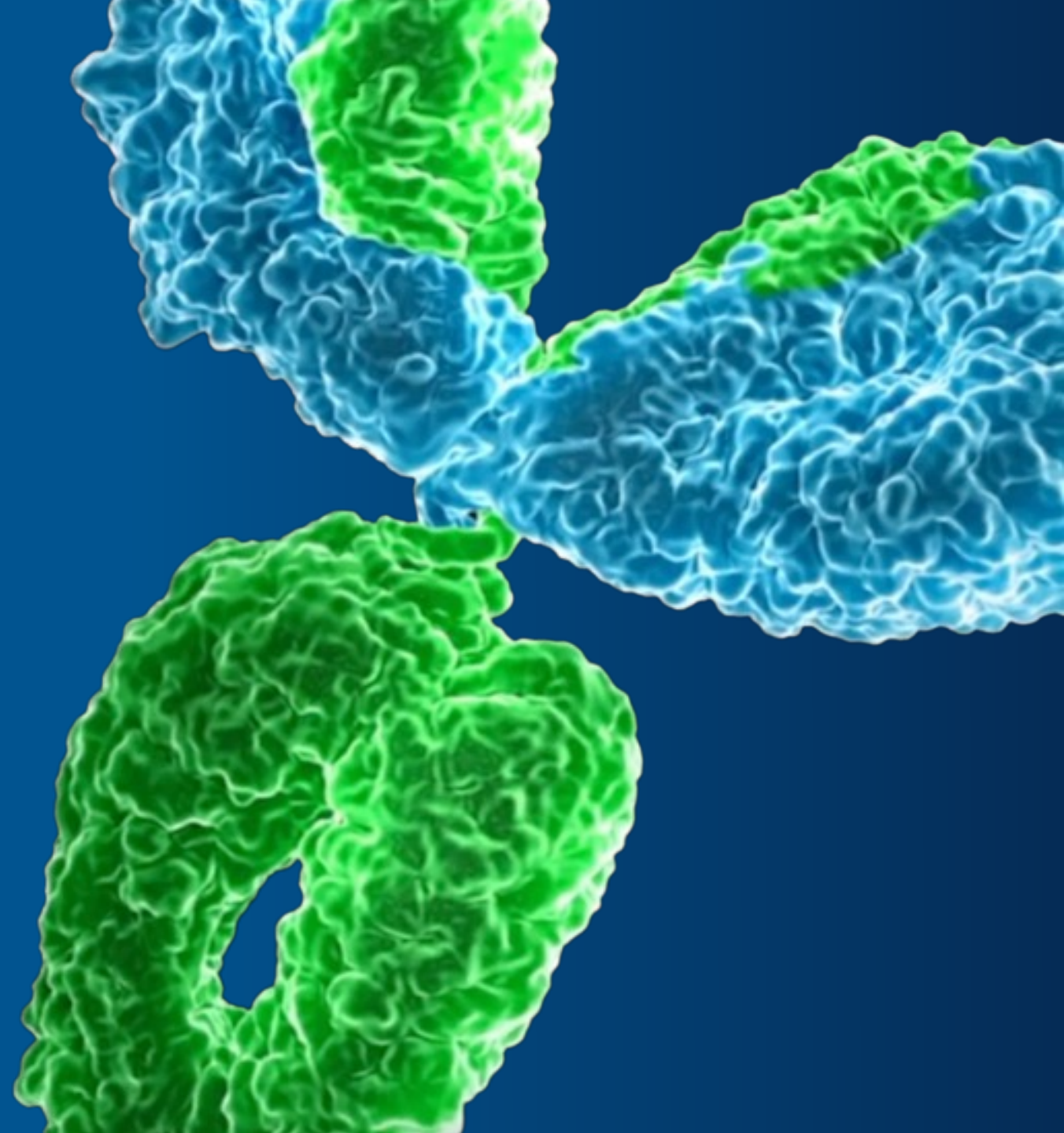
SUTRO BIOPHARMA

Luveltamab Tazevibulin (Luvelta, STRO-002) Phase 1 Data and Regulatory Strategy

January 9, 2023



Agenda for Today
January 9, 2023

Topic	Speaker
Welcome and Introduction Forward-Looking Statements	**Ed Albini,** Chief Financial Officer, Sutro Biopharma **Bill Newell,** Chief Executive Officer, Sutro Biopharma
Luvelta (STRO-002) Phase 1 Dose-Expansion Study Results	**Dr. R. Wendel Naumann,** Professor and Director of Gynecologic Oncology Research, Associate Medical Director of Clinical Trials at the Levine Cancer Institute, Atrium Health
Registrational Path Forward for Luvelta	**Bill Newell** **Dr. Stan Frankel,** Scientific Advisory Board member, Sutro Biopharma
Market Opportunity for Ovarian Cancer Treatment	**Bill Newell** **Jane Chung,** Chief Commercial Officer, Sutro Biopharma
Closing Remarks	**Bill Newell**
Q&A	**Bill Newell** **Dr. R. Wendel Naumann** **Dr. Stan Frankel** **Trevor Hallam,** President, Research & Chief Scientific Officer, Sutro Biopharma **Jane Chung**

Forward-Looking Statements

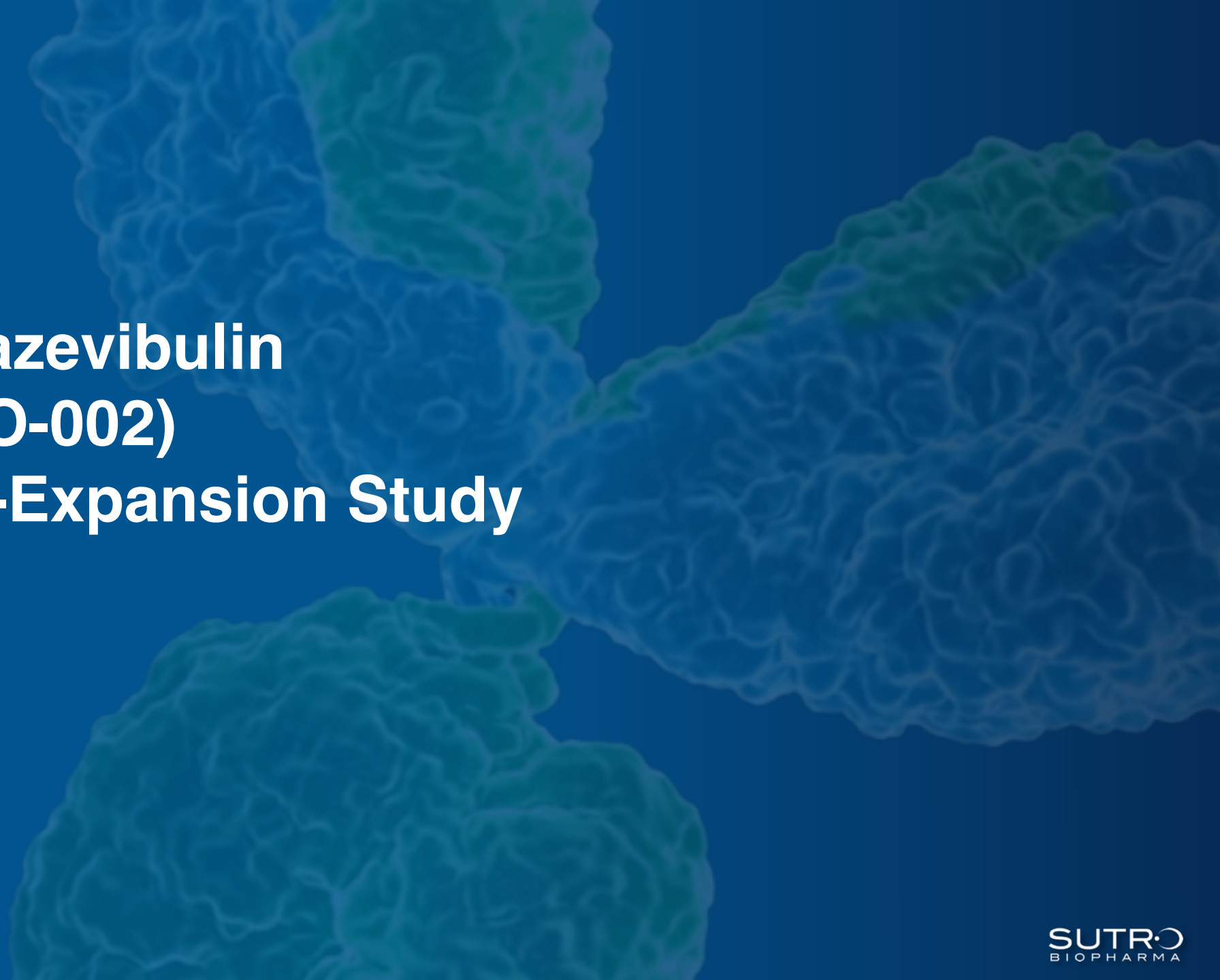
This presentation and the accompanying oral presentation contain “forward-looking” statements that are based on our management’s beliefs and assumptions and on information currently available to management. Forward-looking statements include all statements other than statements of historical fact contained in this presentation, including information concerning our future financial performance, business plans and objectives, current and future clinical activities, timing, design and success of our ongoing and planned clinical trials and related data, updates and results of our clinical trials and related data, timing and success of our planned development activities, our ability to obtain and maintain regulatory approval, the potential therapeutic benefits and economic value of our product candidates, potential growth opportunities, financing plans, potential future milestone and royalty payments, competitive position, industry environment and potential market opportunities for the Company’s product candidates.

Forward-looking statements are subject to known and unknown risks, uncertainties, assumptions and other factors, including risks and uncertainties related to our cash forecasts, our and our collaborators’ ability to advance our product candidates, the receipt, feedback and timing of potential regulatory submissions, designations, approvals and commercialization of product candidates, the design, timing and results of preclinical and clinical trials, and the expected impact of the COVID-19 pandemic on our operations. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. These factors, together with those that may be described in greater detail under the heading “Risk Factors” contained in our most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and other reports the company files from time to time with the Securities and Exchange Commission, may cause our actual results, performance or achievements to differ materially and adversely from those anticipated or implied by our forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although our management believes that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or occur. Moreover, neither we nor our management assume responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to publicly update any forward-looking statements for any reason after the date of this presentation to conform these statements to actual results or to changes in our expectations, except as required by law.

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions, and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

Luveltamab Tazevibulin (Luvelta, STRO-002) Phase 1 Dose-Expansion Study



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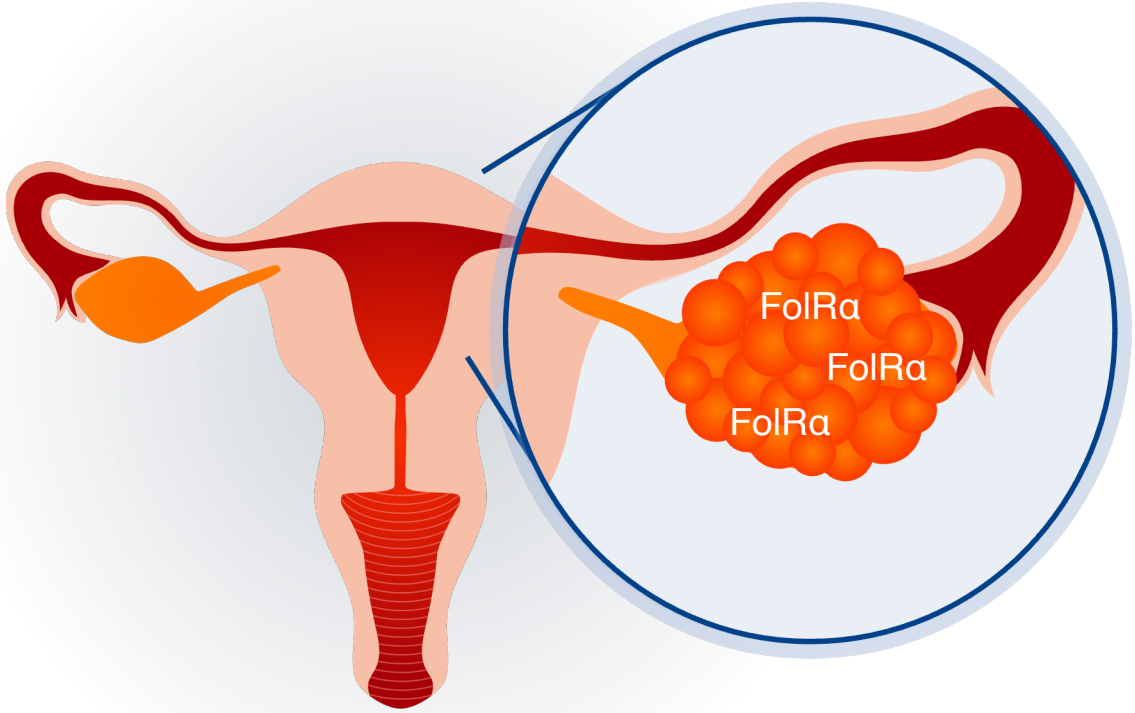
Advanced Ovarian Cancer Has a High Unmet Medical Need

Due to advanced stage of disease at diagnosis and limited progress of available treatments

- Ovarian cancer is the most common cause of death from gynecological cancers
  - Accounts for **2.1%** of all estimated cancer deaths[1,2]
  - Almost half of affected women live less than **five years** following diagnosis[1,2]
- In 2022, an estimated **19,880** new ovarian cancer cases were diagnosed in the United States[1,2]
  - Total estimated death from this disease was 12,810
- Folate receptor alpha, or **FolRα** is highly expressed in ovarian cancer
  - Associated with disease burden and treatment outcomes[3,4]



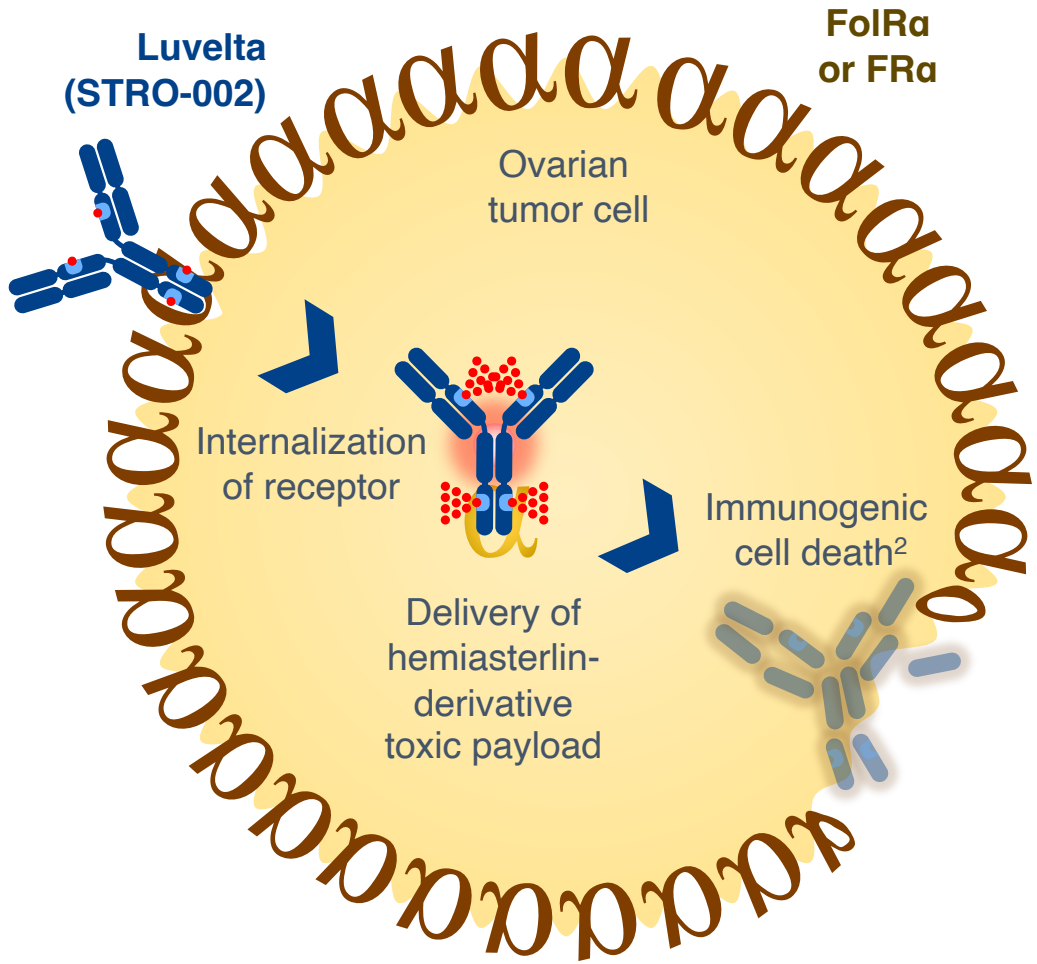
FolRα, folate receptor alpha.

1. Cancer facts and figures 2022. https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2022/2022-cancer-facts-and-figures.pdf. Accessed December 14, 2022.
2. 2022 Estimates. American Cancer Society. https://cancerstatisticscenter.cancer.org/?_ga=2.9856755.798860474.1671221534-46877757.1671052212#!/. Accessed December 16, 2022.
3. Birrer MJ, et al. *Oncologist*. 2019;24:425–429. 3. https://www.nature.com/articles/s41416-022-02031-x

Luveltamab Tazevibulin (Luvelta, STRO-002)

Next-generation ADC designed to have efficacy across a broad range of FolRα-expression levels

- Luvelta (STRO-002) is a homogenous ADC, targeting folate receptor alpha, or FolRα
  - Conjugation of linker payload to 4 precisely positioned conjugatable non-natural amino acids
- Cathepsin B linker, which is a stable protease-cleavable linker
  - Positioning of linker payloads allows for the cleaving of cathepsin B linker more efficiently, rapidly releasing cytotoxin that is accumulated in the tumor
  - Prevents release of payload in circulation and the free payload is rapidly cleared, therefore preventing collateral systemic tolerability issues
- Hemiasterlin-derivative(1) cytotoxic payload, with various mechanisms
  - Relatively poor ability of tumor efflux pumps to extrude the hemiasterlin derivative
  - **Bystander Effect:** Once the tumor cell dies, the cytotoxin is released into the tumor micro-environment, where it can kill surrounding tumor cells
  - **Immunogenic Cell Death(2):** Stress to the tumor cell induces signals to the innate immune system that helps remove the tumor

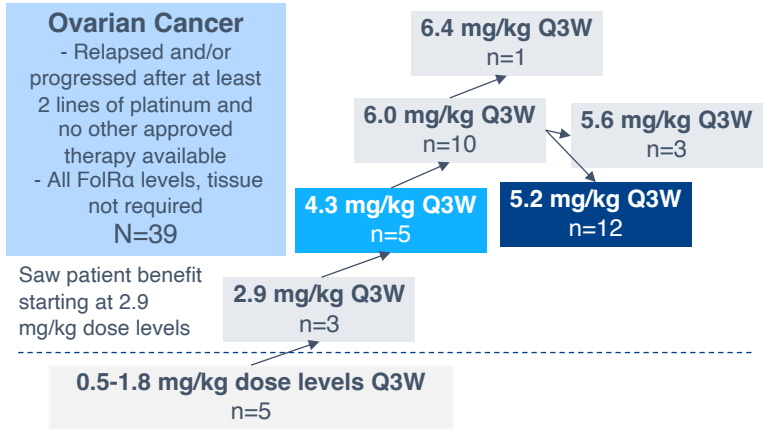


ADC, antibody drug conjugate. DAR, drug antibody ratio.
1. Sutro-proprietary tubulin-targeting 3-aminophenol hemiasterlin warhead, SC209.
2. Based on STRO-002 pre-clinical models showing immune stimulation at site of tumor upon cell death

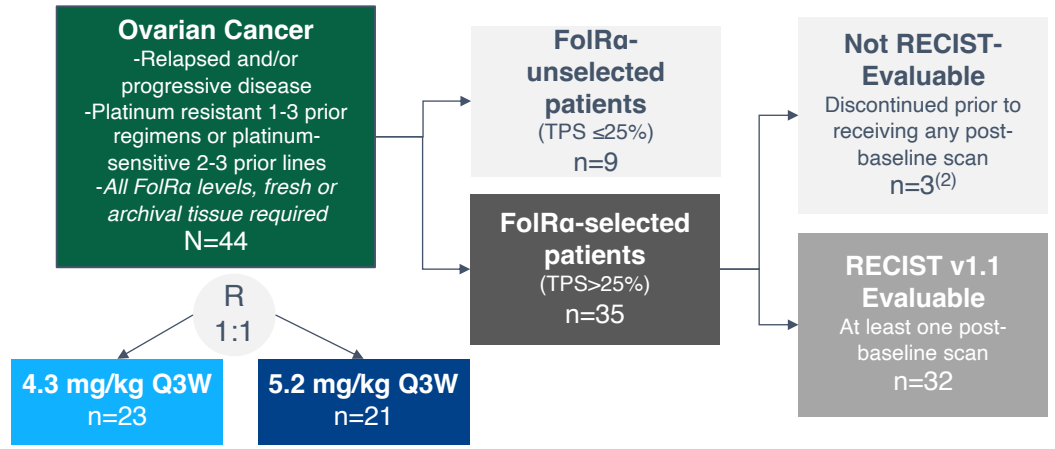
Two-Part Phase 1 Study for Patients with Advanced Ovarian Cancer[1]

Explored dosing regimen and biomarker levels for which luvelta is optimal

Part 1: Dose-escalation cohort



Part 2: Dose-expansion cohort – Cohort A



Part 2: Cohort C

5.2 mg/kg Q3W + prophylactic pegfilgrastim on Day 8
N=15[3]

Patient Baseline Demographics – Part 2: Dose-Expansion – Cohort A	All Patients Enrolled (N=44)			FolRα-Selected Patients (N=35)			Cohort C
	4.3 mg/kg n=23	5.2 mg/kg n=21	Total N=44	4.3 mg/kg n=19	5.2 mg/kg n=16	Total N=35	Total N=10[3]
Median age (range), years	63 (39–91)	56 (40–72)	60 (39–91)	63 (39–91)	55.5 (45–72)	60 (39–91)	67 (36-86)
Median time since diagnosis (range), years	2.8 (0.8–9.3)	3.0 (0.7–7.8)	2.9 (0.7–9.3)	2.8 (0.9–9.3)	3.5 (1.0–7.8)	3.0 (0.9–9.3)	Mean: 3.0
Mean number of prior lines of therapy	2.5	2.3	2.4	2.6	2.3	2.5	2.5
Prior Therapies							
Prior Bevacizumab, n (%)	13 (57)	16 (76)	29 (66)	12 (63)	12 (75)	24 (69)	6 (60)
Prior PARP inhibitor, n (%)	18 (78)	18 (86)	36 (82)	14 (74)	15 (94)	29 (83)	6 (60)

1. Phase 1 for patients with advanced ovarian cancer is named STRO-001-GM1, clinicaltrials.gov NCT identifier: NCT03748186.
2. Three patients were not evaluable for RECIST as they discontinued before receiving any post-baseline scan for the following reasons: clinical disease progression, adverse event, and consent withdrawn.
3. Cohort C enrolled 15 patients and interim data on 10 patients were made available as of December 8, 2022.

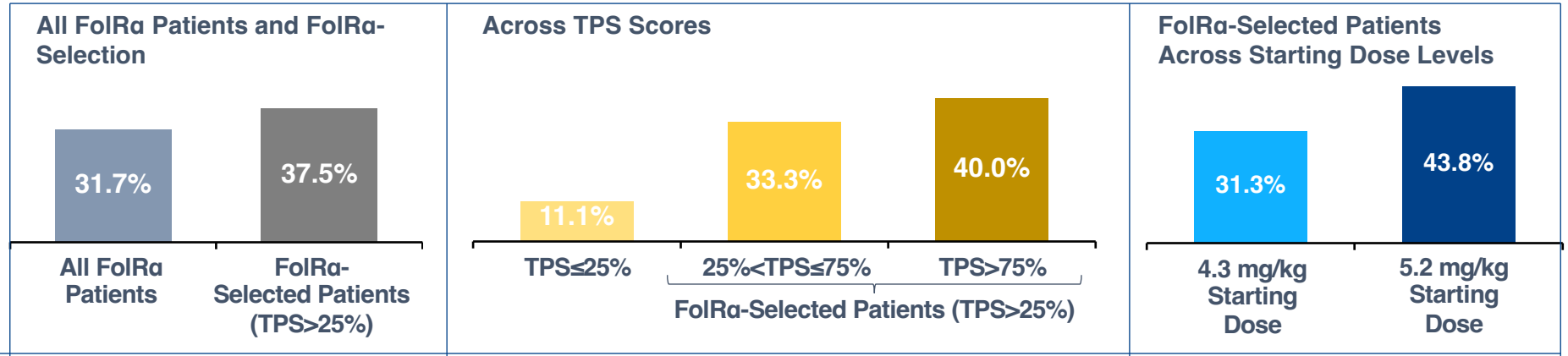
Q3W, every 3-week dosing; RECIST v1.1, Response Evaluation Criteria in Solid Tumors v1.1; TPS, tumor proportion score.

Luvelta Phase 1 Data Establishes FolRα-Selection Criteria

Patients who started at the higher dose level demonstrated higher ORR and median PFS

Dose-expansion efficacy data establishes TPS>25% as appropriate enrichment cutoff for luvelta
Patients who started at 5.2 mg/kg experienced 43.8% ORR, 5.4 months median DOR, and 6.6 months median PFS

RECIST-Evaluable ORR (%), Median DOR (%), and Median PFS



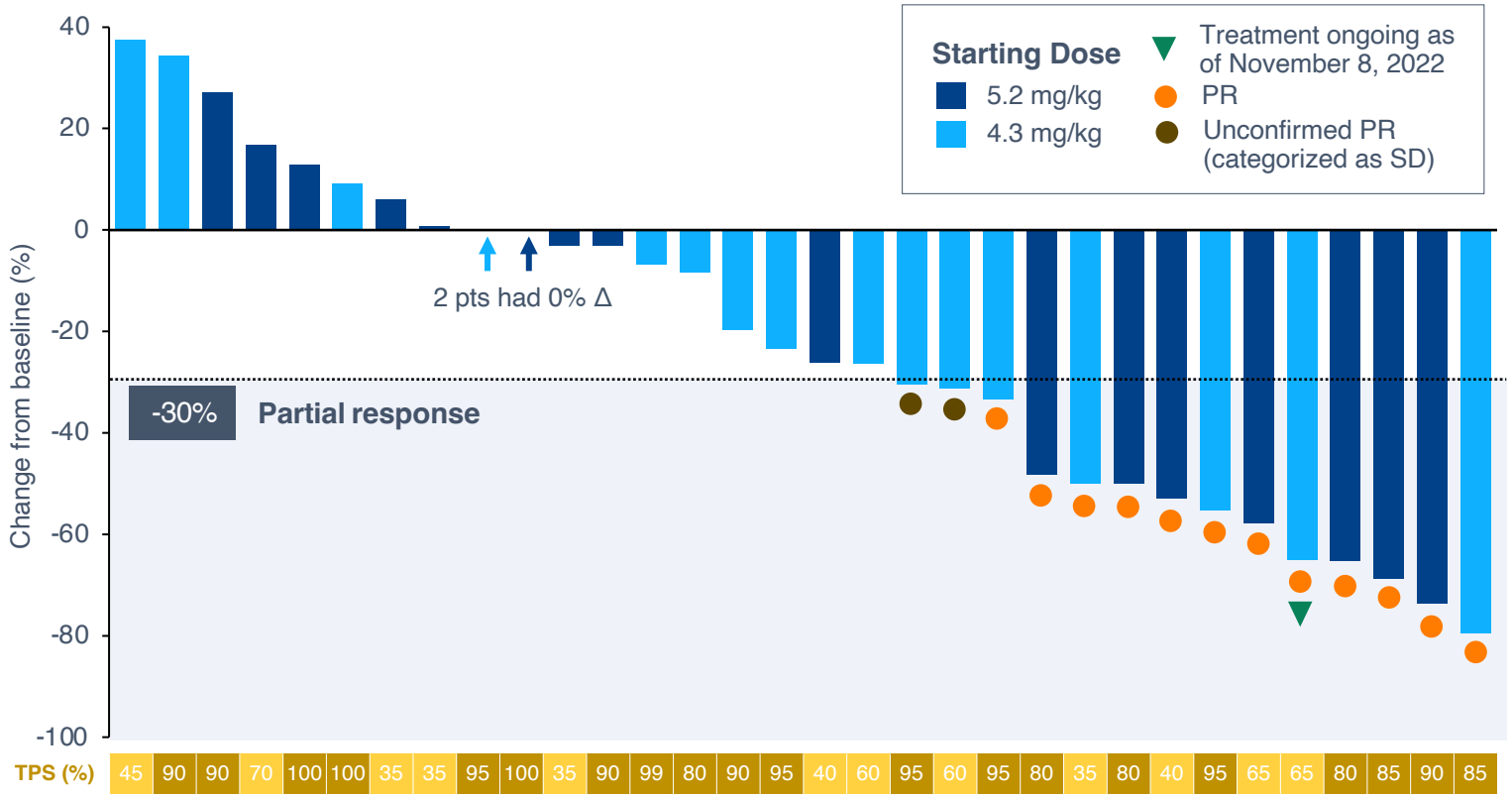
	All FolRα Patients and FolRα-Selection		Across TPS Scores			FolRα-Selected Patients Across Starting Dose Levels	
	All FolRα Patients	FolRα-Selected Patients (TPS>25%)	TPS≤25%	25%<TPS≤75%	TPS>75%	4.3 mg/kg Starting Dose	5.2 mg/kg Starting Dose
RECIST-Evaluable Patients	N=41	N=32	N=9	N=12	N=20	N=16	N=16
PR	13	12	1	4	8	5	7
ORR (95%, CI), %	31.7 (18.1, 48.1)	37.5 (21.1, 56.3)	11.1 (0.3, 48.3)	33.3 (10.0, 65.1)	40.0 (19.1, 63.9)	31.3 (11.0, 58.7)	43.8 (19.8, 70.1)
Median DOR (95% CI), mo	5.4 (2.9, 11.0)	5.5 (2.5, 11.0)	2.9	5.6 (2.5, NE)	5.5 (2.4, NE)	13 (4.5, NE)	5.4 (2.4, 6.1)
Patients for median PFS	n=44	n=35	n=9	n=12	n=23	n=19	n=16
Median PFS (95% CI), mo	4.3 (4.0, 6.3)	6.1 (4.1, 7.0)	3.8 (1.3, 4.2)	6.4 (1.4, 10.4)	5.8 (4.0, 6.6)	6.1 (4.0, 8.3)	6.6 (2.9, 7.6)

Note: Data are as of November 8, 2022.
FolRα-selected defined as TPS>25%.
ORR, overall response rate; DOR, duration of response; PFS, progression free survival; PR, partial response; CI, confidence interval; mo, months; NE, not estimable.

Majority of FolRα-Selected Patients Experienced Disease Control

12 FolRα-selected patients demonstrated confirmed partial response

BOR: Maximum Reduction in Tumor Target Lesions in FolRα-Selected Patients (N=32)[1]



BOR in FolRα-Selected Patients (N=32)

	Both Doses N=32	5.2 mg/kg n=16	4.3 mg/kg n=16
PR	12	7	5
ORR %	*37.5*	*43.8*	*31.3*
SD, n (%)	14 (43.8)	6 (37.5)	8 (50.0)
DCR [2] %	*81.3%*	*81.3%*	*81.3%*
PD, n (%)	6 (18.8)	3 (18.8)	3 (18.8)

FolRα Stratification (N=32)

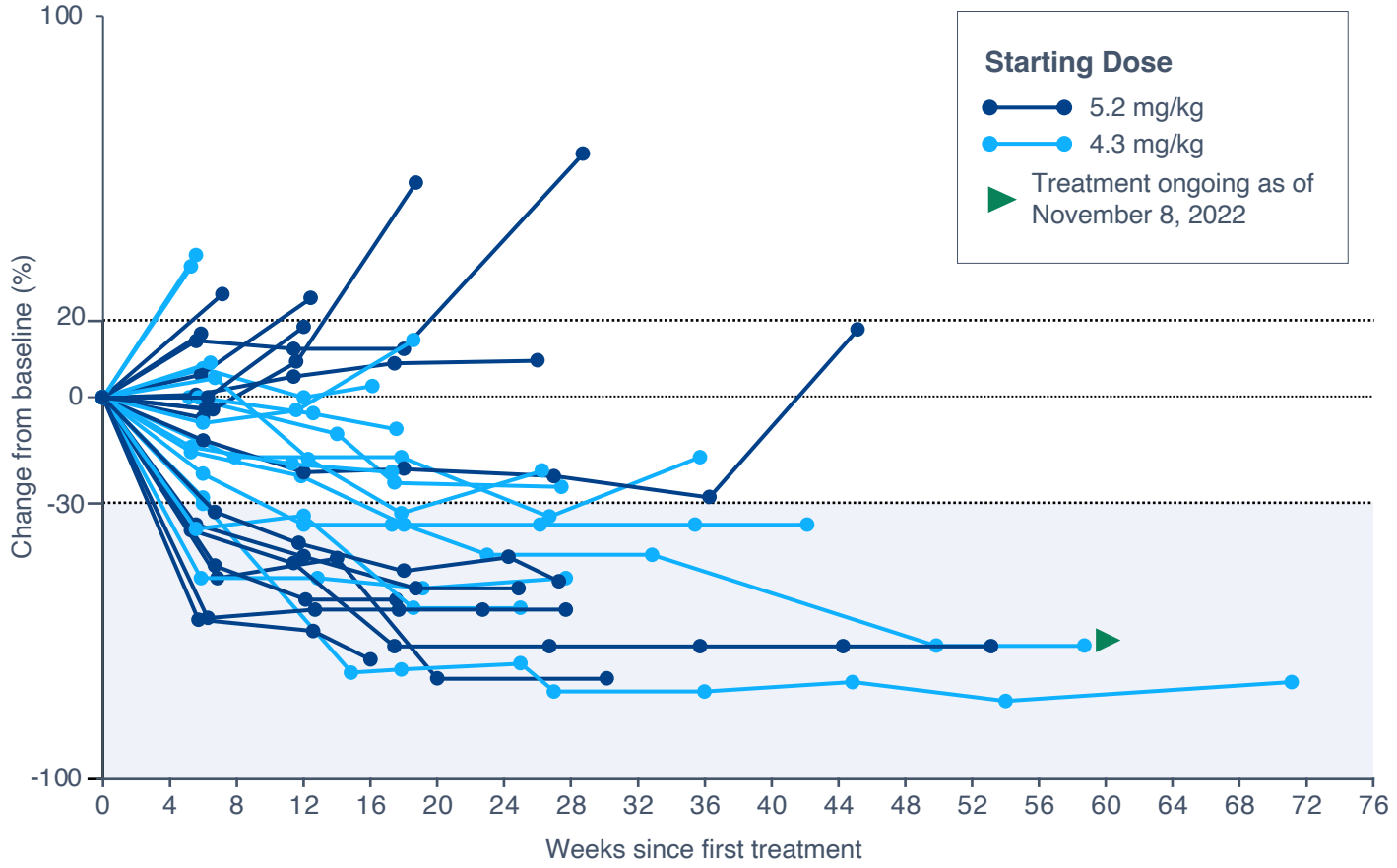
Number of patients (%)	5.2 mg/kg n=16	4.3 mg/kg n=16
25%<TPS≤75%	7 (43.8%)	5 (31.3%)
TPS>75%	9 (56.3%)	11 (68.8%)

Note: Data are as of November 8, 2022.
1. Data on FolRα-selected patients who are evaluable for RECIST v1.1.
2. Disease control includes SD ≥ 6 weeks.
BOR, best overall response; SD, stable disease; DCR, disease control rate; PD, progressive disease.

Robust Anti-Tumor Activity and Disease Control Demonstrated

Responders experienced rapid tumor reduction or a steady deepening of response

Change in Sum of Diameters for Target Lesions Over Time in FolRα-Selected Patients (N=32)[1]



Time to Response for Responders

Starting dose level (mg/kg)	Number of PRs	Mean in weeks (St. Dev)	Range in weeks (min, max)
5.2	n=7	6.3 (0.6)	(5.4, 7.0)
4.3	n=5	11.4 (5.5)	(5.7, 18.1)

Patients at the **5.2mg/kg** starting dose level demonstrated **faster time to response**

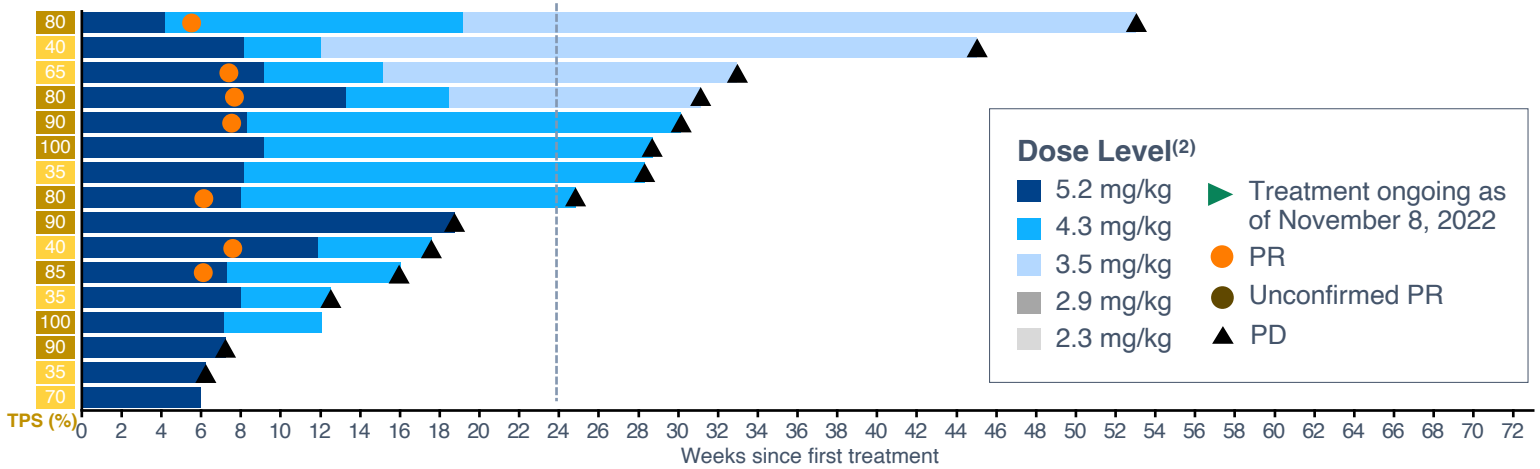
Note: Data are as of November 8, 2022.

1. Data are from Cohort A of Phase 1 dose expansion on FolRα-selected patients who are evaluable for RECIST v1.1.

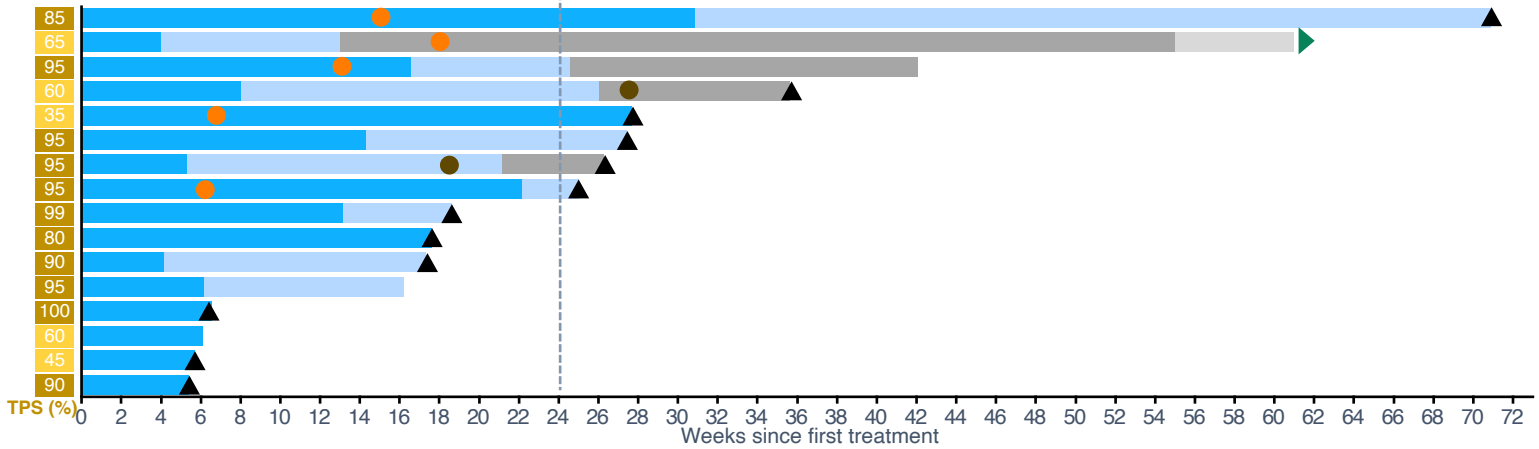
Patients Had Durable Responses even with Dose Modifications

Patients who started at the higher dose experienced rapid time to response

Starting Dose, 5.2 mg/kg (n=16)[1]



Starting Dose, 4.3 mg/kg (n=16)[1]



Dose Intensity by Starting Dose (N=44)[3]

	5.2 mg/kg n=21	4.3 mg/kg n=23
Dose intensity (mg/kg per week)		
Mean	**1.2**	**1.0**
Min, max	0.8, 1.6	0.7, 1.5
Relative dose intensity (%)		
Mean	**66.8**	**72.4**
Min, max	48.5, 90.7	46.3, 105.1

Summary of Dose Modification (N=44)[3]

Patients (%)	5.2 mg/kg n=21	4.3 mg/kg n=23
Dose delay	20 (95.2%)	15 (65.2%)
Dose interruption	2 (9.5%)	0
Dose Reduction	16 (76.2%)	11 (47.8%)

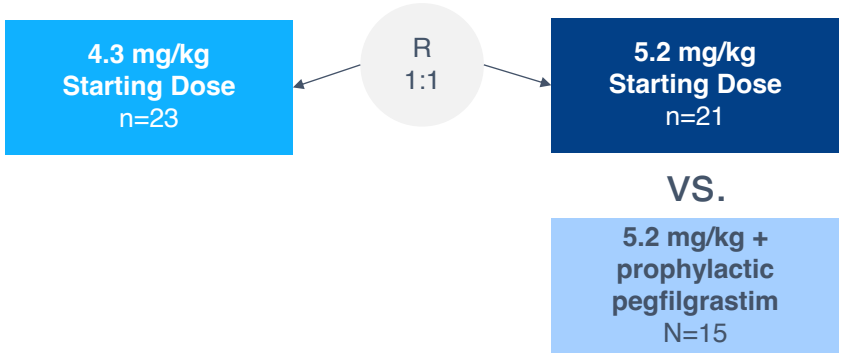
Note: Data are as of November 8, 2022.

1. Data are from Cohort A of Phase 1 dose expansion on FolRα-selected patients who are evaluable for RECIST v1.1.
2. Patients are dosed Q3W, and patient scans generally coincide with every other cycle.
3. Data on all 44 patients in Cohort A of Phase 1 dose expansion, including patients who are FolRα-unselected and patients who are not RECIST v1.1 evaluable; PD, progressive disease; PR, partial response.

Cohort C as a Deep Dive Into Managing Neutropenia

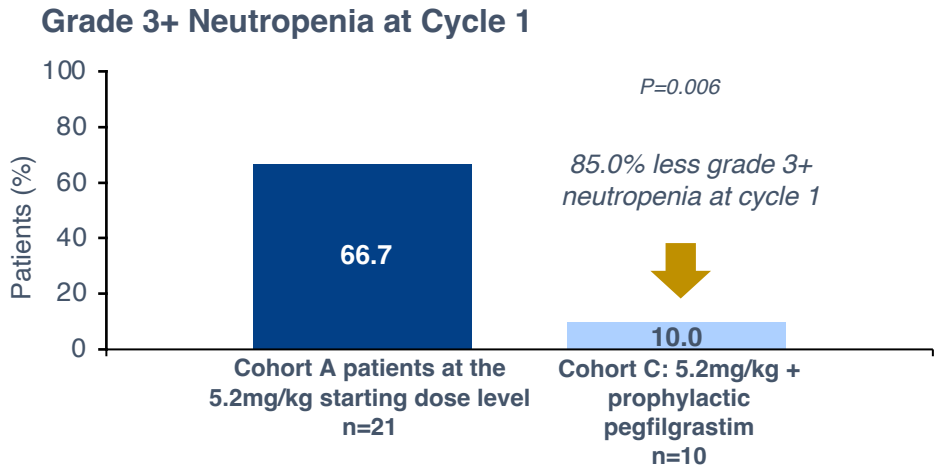
Prophylactic use of pegfilgrastim reduced Grade 3+ neutropenia and dose delays

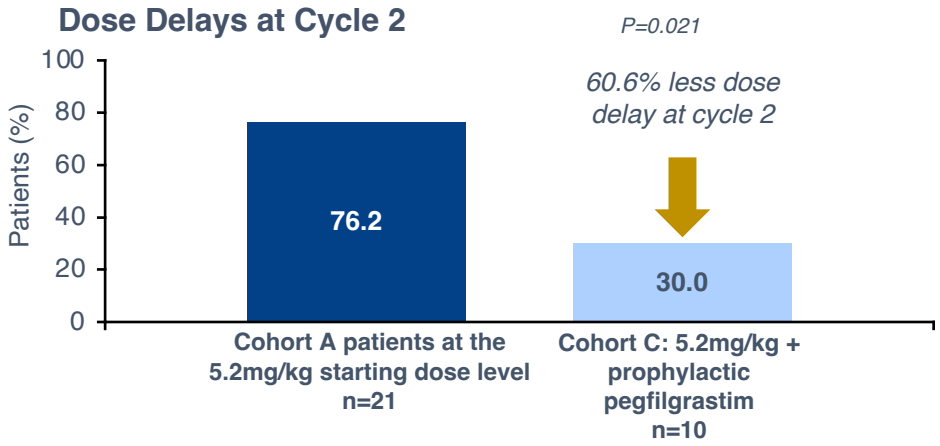
Part 2 Dose-expansion cohorts - Cohort A vs. Cohort C



- Use of prophylactic pegfilgrastim on day 8 per protocol in Cohort C **reduced Grade 3+ neutropenia at Cycle 1 by 85%**, when compared to Cohort A
- On average, patients in Cohort A at the 5.2 mg/kg dose level were delayed in their dose for ~10 days
- **Dose delays were decreased by 60.6%** in Cohort C, when compared to Cohort A

Cohort A (patients at 5.2mg/kg starting dose) vs. Cohort C





Note: Cohort A data are as of November 8, 2022. Cohort C data are as of December 8, 2022.

Most Common Treatment-Emergent Adverse Event was Neutropenia

No new safety signals were observed, including the absence of meaningful drug-related ocular and lung AEs

Most Common Grade 3+ TEAEs (≥2 Subjects) by Dose and General Category

	4.3 mg/kg (n=23)			5.2 mg/kg (n=21)			Total (N=44)		
n (%)	Grade 3	Grade 4	Grade 5	Grade 3	Grade 4	Grade 5	Grade 3	Grade 4	Grade 5
Subjects reporting at least 1 event	**12 (52)**	**6 (26)**	**0**	**8 (38)**	**11 (52)**	**1 (5)**	**20 (45)**	**17 (39)**	**1 (2)**
Hematological									
Neutropenia[1]	10 (43)	5 (22)	0	4 (19)	11 (52)	1 (5)	14 (32)	16 (36)	1 (2)
Febrile neutropenia	1 (4)	0	0	0	0	1 (5)	1 (2)	0	1 (2)
White blood cell count decreased	5 (22)	1 (4)	0	2 (10)	2 (10)	0	7 (16)	3 (7)	0
Platelet count decreased	2 (9)	0	0	2 (10)	0	0	4 (9)	0	0
Thrombocytopenia	0	0	0	2 (10)	0	0	2 (5)	0	0
Anemia	1 (4)	0	0	5 (24)	0	0	6 (14)	0	0
Pain-related									
Neuralgia	2 (9)	0	0	1 (5)	0	0	3 (7)	0	0
Arthralgia	6 (26)	0	0	2 (10)	0	0	8 (18)	0	0
Bone pain	1 (4)	0	0	1 (5)	0	0	2 (5)	0	0
Gastrointestinal									
Small intestinal obstruction	2 (9)	0	0	1 (5)	0	0	3 (7)	0	0
Large intestinal obstruction	0	0	0	2 (10)	0	0	2 (5)	0	0
Diarrhea	2 (9)	0	0	0	1 (5)	0	2 (5)	1 (2)	0
Vomiting	0	0	0	2 (10)	0	0	2 (5)	0	0
Other									
Fatigue	3 (13)	0	0	1 (5)	0	0	4 (9)	0	0
Hyponatremia	3 (13)	0	0	0	0	0	3 (7)	0	0
Cataract	2 (9)	0	0	0	0	0	2 (5)	0	0
Activated partial thromboplastin time prolonged	2 (9)	0	0	0	0	0	2 (5)	0	0
Dehydration	1 (4)	0	0	1 (5)	0	0	2 (5)	0	0
Acute kidney injury	0	0	0	2 (10)	0	0	2 (5)	0	0
Pulmonary embolism	2 (9)	0	0	0	0	0	2 (5)	0	0

- **Neutropenia** was the most common G3+ AE and the most common reason for dose reduction
  - Higher incidence at 5.2 mg/kg
  - Other G3+ hematological TEAEs infrequently required dose modifications
- **Arthralgia** was the second most common G3+ and second most common TEAE leading to dose reduction
- **Other G3+ TEAE** which were unrelated to study drug
  - G3+ large and small intestinal obstructions as complications of metastatic cancer
  - G3+ acute kidney injury attributed to concomitant AEs (sepsis and dehydration) and not direct drug injury
  - G3+ pulmonary embolism in 2 patients

Note: Data are as of November 8, 2022 on all patients enrolled in Phase 1 dose expansion Cohort A.
1. Neutropenia included the following preferred terms: neutropenia, febrile neutropenia, and neutrophil count decreased.
AE, adverse events; TEAE, treatment-emergent adverse event

Registrational Path Forward for Luveltamab Tazevibulin (Luvelta, STRO-002)

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Luvelta (STRO-002) Has a Favorable Product Target Profile

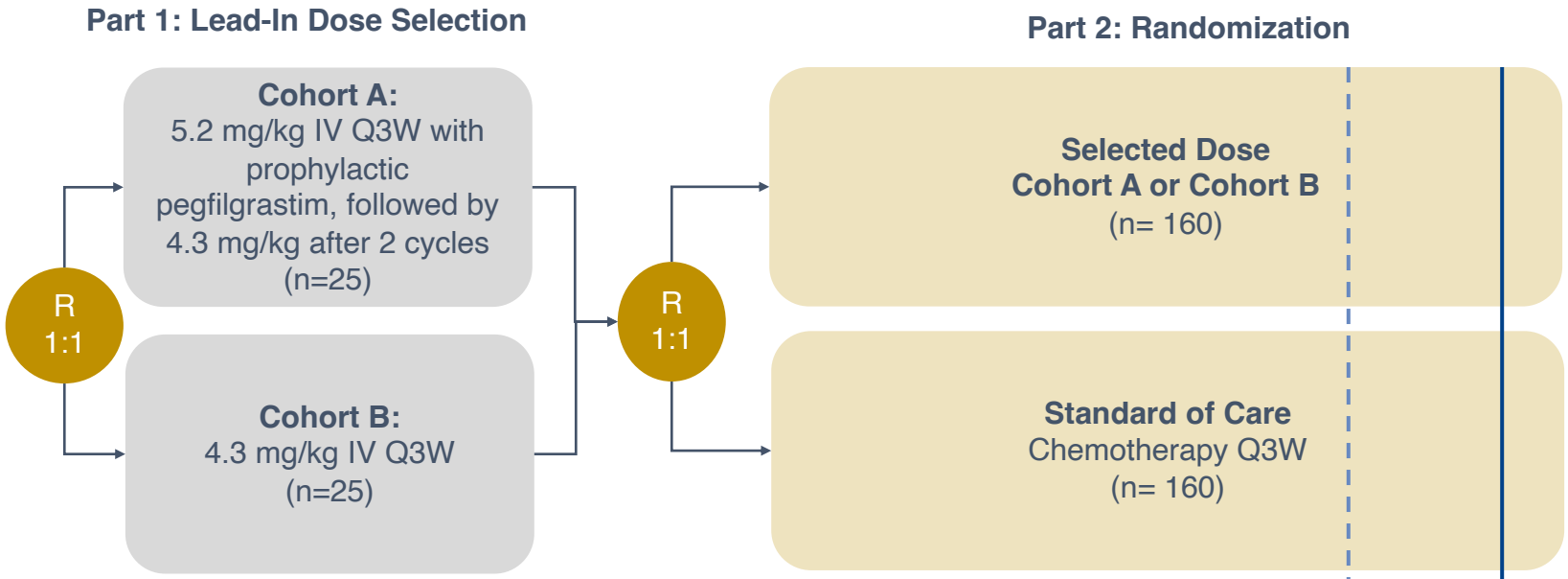
Confidence to move forward into registrational-enabling study

- Potential to treat ~80% of patients with platinum-resistant ovarian cancer
- Efficacy demonstrated by ORR in the 31-44% range in FolRα-selected patients
- Manageable safety profile, even at the higher dose levels when given prophylactic pegfilgrastim

Note: Cohort A data are as of November 8, 2022. Cohort C data are as of December 8, 2022.

Luvelta Clinical Integrated Strategy for Phase 2/3 Study, REFRaME

Integrated design to potentially support accelerated and full approvals in platinum-resistant ovarian cancer



Key eligibility criteria

- Platinum resistant ovarian cancer, prior bevacizumab required
- 1–3 prior lines, exclude primary platinum refractory
- FolRα-selected (TPS > 25%)

Interim analysis for Accelerated Approval

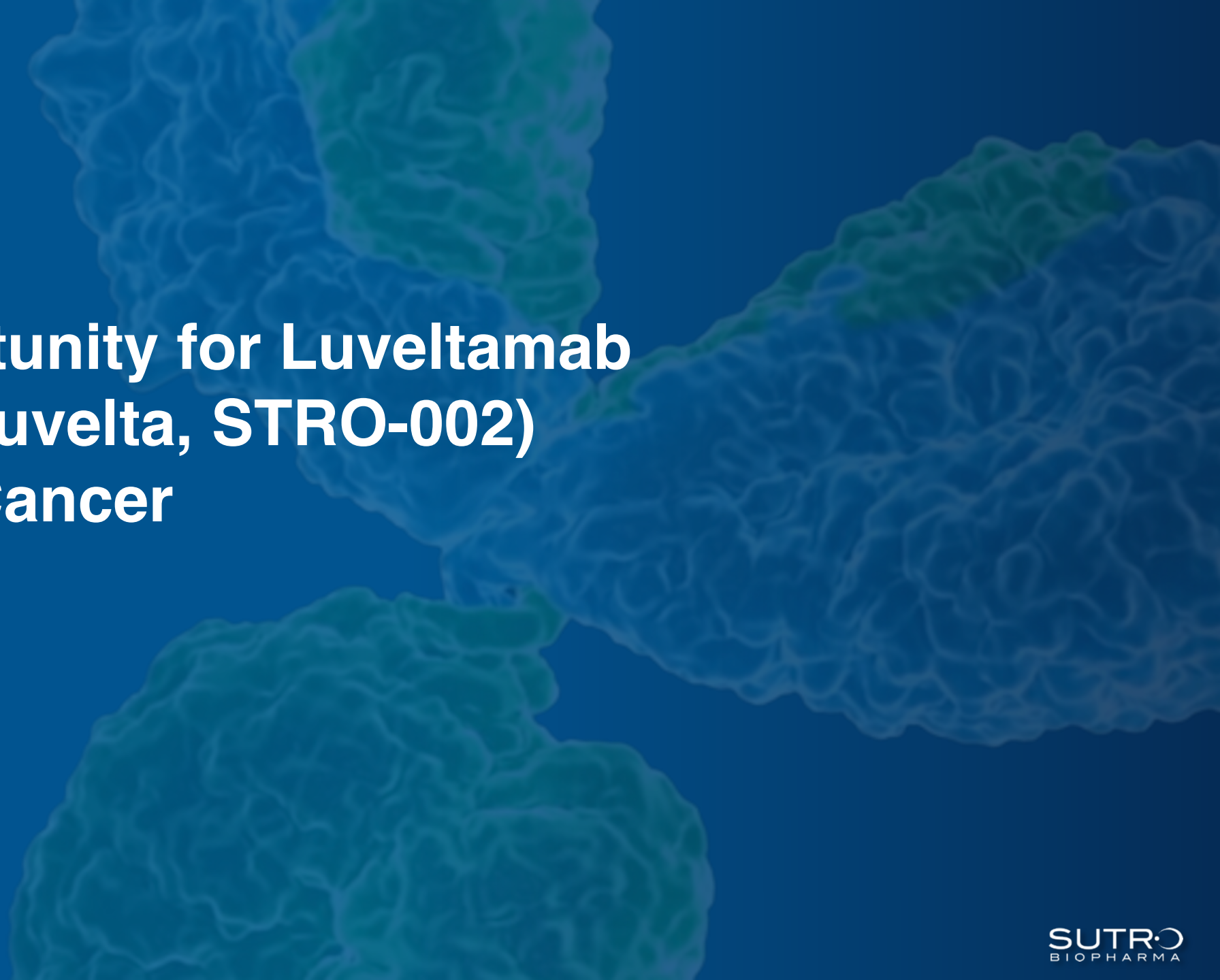
- Endpoints: ORR with DOR, safety
- Interim analysis on n=110 in luvelta arm
- Minimal hit to alpha
- Estimated time to accelerated approval unchanged vs. estimated time for a single arm pivotal Ph 2 design

Final analysis for full approval

- Endpoint: PFS
- Full approval on PFS analysis at 160 patients, each in luvelta and standard of care
- Power 80%, HR, 0.72
- Provides most rapid time course for full approval

HR, hazard ratio; IV, intravenous; Q3W, every 3 weeks.
TPS, tumor proportion score; ORR, overall response rate; DOR, duration of response; PFS, progression free survival; HR, hazard ratio.

Market Opportunity for Luveltamab Tazevibulin (Luvelta, STRO-002) and Ovarian Cancer



Luvelta Provides Opportunities for Pipeline-in-a-Drug

Multiple shots on goal for commercial opportunities, beyond gynecological cancers

Treatment	Indication	Estimated Market Size/Incidence	
Monotherapy	Platinum-resistant ovarian cancer **Phase 2/3**	**Market size:** ~4K patients per year in the U.S. (FolRα-selected)	**Registrational-enabling, Fast-track designation** Optimized dose of 4.3 mg/kg or 5.2 mg/kg + pegfilgrastim × 2 → 4.3 mg/kg
	Endometrial cancer **Phase 1 expansion**	**Incidence:** Across all stages, not FolRα-selected, ~66K newly diagnosed/year	Requires baseline FolRα-expression level N=40, enrolling
	Pediatric RAM phenotype AML with CBF/GLIS2 mutation **Compassionate use**	**Market size:** ~20 newly diagnosed patients per year	N=17+ Orphan drug designation Rare pediatric disease designation → To discuss with FDA registrational path
	NSCLC **Preclinical**	**Incidence:** Across all stages, squamous and non-squamous, not FolRα-selected. ~196K newly diagnosed patients/year	Translational research to define strategies for patient stratification based on FolRα
Combination therapy	Platinum-sensitive ovarian cancer combined with bevacizumab MT **Phase 1 dose escalation/expansion**	**Market size:** ~2-3K patients per year in the U.S. (FolRα-selected)	Bevacizumab 15 mg/kg combined with STRO-002 starting at 3.5 mg/kg N=40, enrolling

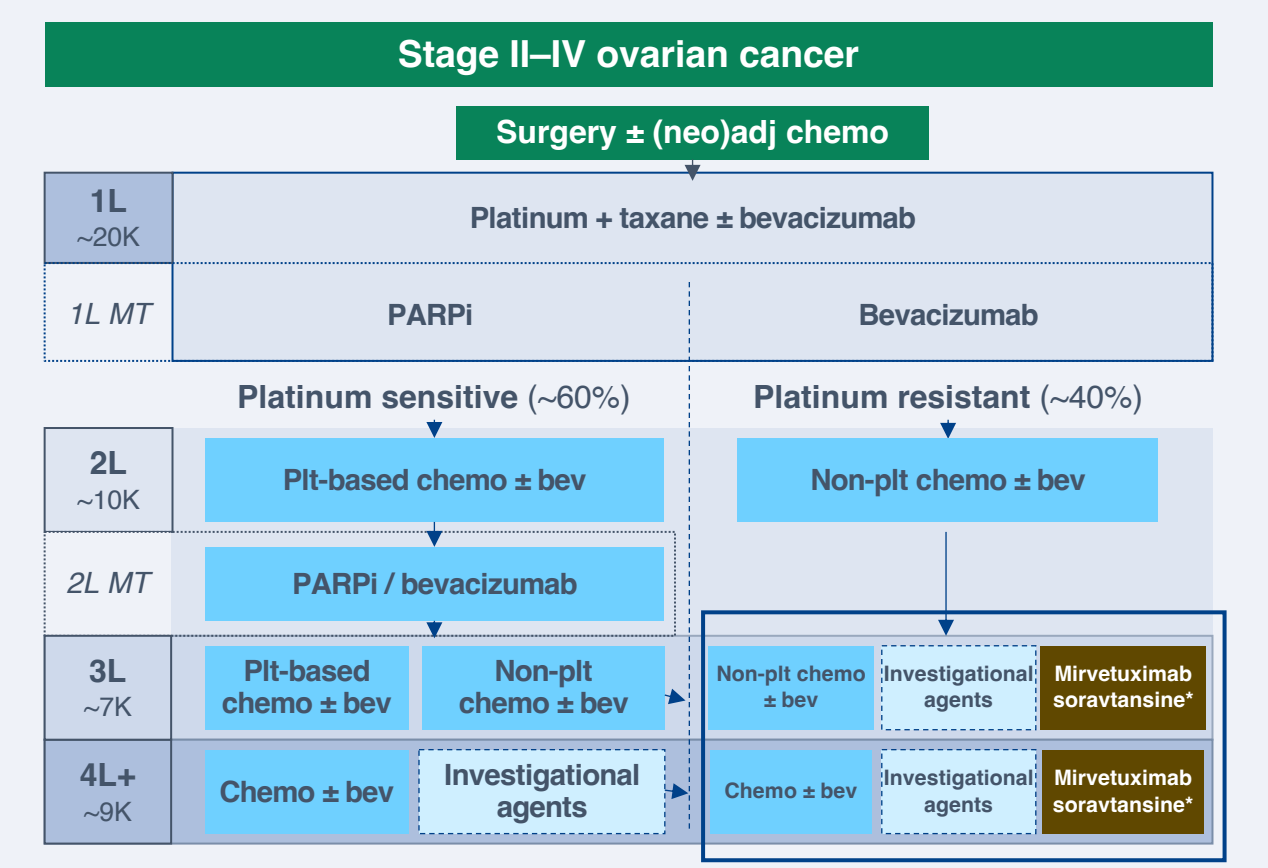
AML, acute myeloid leukemia; NSCLC, non-small cell lung cancer.

Platinum-resistant ovarian cancer source: Sutro internal estimate, based on overall ovarian cancer incidence from SEER data, 2022 (accessed Jan. 2023)
Endometrial cancer source: SEER data, 2022 (accessed Jan. 2023)
RAM-AML source: 1. SEER data explorer, 2022 (accessed Jan. 2023). 2. Eidenschink Brodersen L, et al. A recurrent immunophenotype… Leukemia. 2016;30(10):2077-2080. 3. Smith, JL et al. Comprehensive Transcriptome Profiling of Cryptic CBFA2T3-GLIS2 Fusion-Positive AML… Clinical Cancer Research. vol. 26,3 (2020): 726-737.
NSCLC source: 1. SEER data, 2022 (accessed Jan. 2023). 2. ASCO Cancer.net report, 2022. 3. American Cancer Society Key Statistics for Lung Cancer, 2022.
Platinum-sensitive ovarian cancer source: Sutro internal estimate, based on overall ovarian cancer incidence from SEER data, 2022 (accessed Jan. 2023)

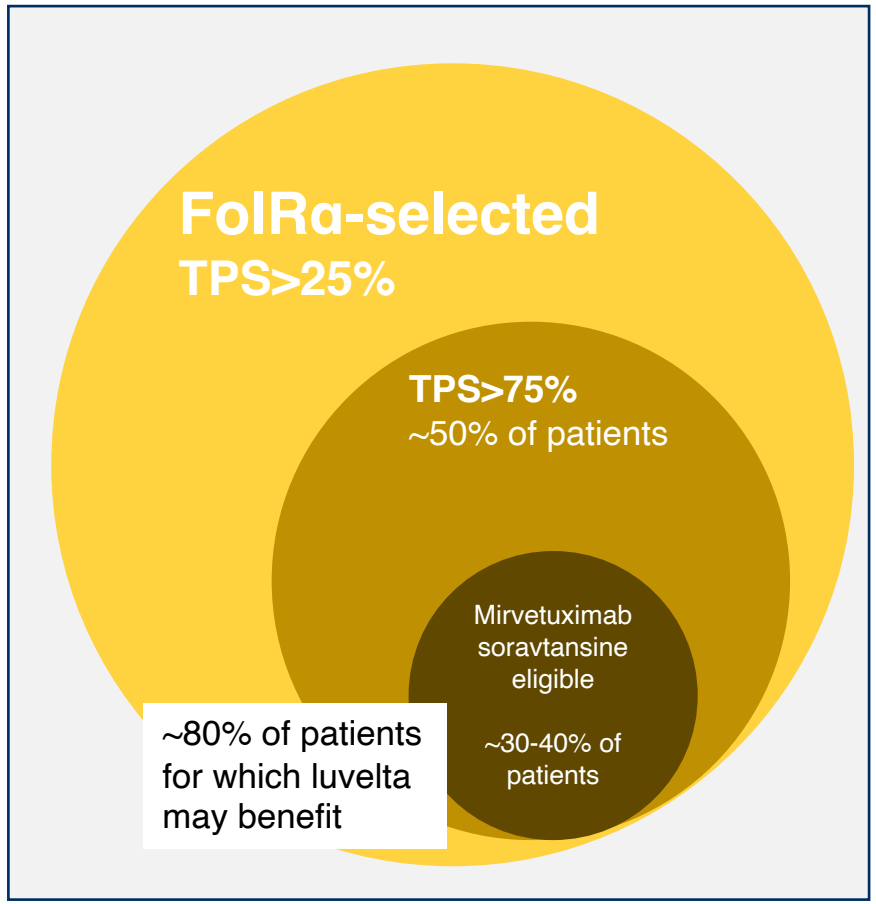
High Unmet Need Remains in Platinum-Resistant Ovarian Cancer

Majority of patients are FolRα expressors and candidates for luvelta

Current Treatment Algorithm



Platinum Resistant Ovarian Cancer Patients



1L, first line; 2L, second line; 3L, third line; 4L, fourth line; adj, adjuvant; bev, bevacizumab; chemo, chemotherapy; MT, maintenance; PARPi, PARP inhibitor; PROC, platinum-resistant ovarian cancer; plt, platinum.

* ELAHERE (mirvetuximab soravtansine-gynx) received accelerated approval in Nov, 2022 for PROC with TPS≥75% and PS2+ or PS3+ staining

1. American Cancer Society Ovarian Cancer Report, 2022. 2. American Cancer Society Key Statistics on Ovarian Cancer, 2022. 3. DRG 2020 Report. 4. WebMD, Ovarian Cancer Treatments, 2022. 5. OCRA, Ovarian Cancer Treatments, 2022. 6. Zhou, Z. et al. *Front Public Health.* 2021;9:619581. 7. Armstrong D, et al. *J Natl Compr Cancer Netw.* 2021;19:191–226. 7. SEER data, 2022 (accessed Jan, 2023). 8. Internal Sutro analysis, June 2022.

Closing Remarks and Q&A