

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K
CURRENT REPORT

Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of report (Date of earliest event reported): **June 8, 2023**

Verastem, Inc.

(Exact Name of Registrant as Specified in Charter)

Delaware
(State or Other Jurisdiction
of Incorporation)

001-35403
(Commission
File Number)

27-3269467
(IRS Employer
Identification No.)

117 Kendrick Street, Suite 500, Needham, MA
(Address of Principal Executive Offices)

02494
(Zip Code)

Registrant's telephone number, including area code: **(781) 292-4200**

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, \$0.0001 par value per share	VSTM	The Nasdaq Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 7.01 Regulation FD Disclosure

On June 8, 2023, Verastem, Inc. posted its corporate presentation on its website, a copy of which is furnished hereto as Exhibit 99.1 to this Current Report on Form 8-K.

Item 9.01. Financial Statements and Exhibits

Exhibit No.	Description
99.1	Corporate Presentation, dated June 8, 2023
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

VERASTEM, INC.

Dated: June 8, 2023

By: /s/ Brian M. Stuglik
Brian M. Stuglik
Chief Executive Officer



Corporate Presentation

June 2023





Disclaimers

This presentation includes forward-looking statements about, among other things, Verastem Oncology's programs and product candidates, including anticipated regulatory performance and potential benefits of Verastem Oncology's product candidates, as well as Verastem Oncology's potential income under its asset purchase agreement with borrowings under its credit facility, that are subject to substantial risks and uncertainties that could cause actual results to differ materially from those expressed or implied. Applicable risks and uncertainties include the risks and uncertainties, among other things, regarding: the success in the development and potential commercialization of our including defactinib and other compounds in combination with avutometinib (VS-6766); the occurrence of adverse safety events and/or unexpected concerns that may arise analysis or result in unmanageable safety profiles as compared to their levels of efficacy; or our ability to obtain, maintain and enforce patent and other intellectual property product candidates.

Other risks and uncertainties include those identified under the heading "Risk Factors" in the Company's Annual Report on Form 10-K for the year ended December 31, 2022, Securities and Exchange Commission (SEC) on March 14, 2023, and in any subsequent filings with the SEC, which are available at www.sec.gov and www.verastem.com.

The forward-looking statements in this presentation speak only as of the original date of this presentation, and we undertake no obligation to update or revise any of these

This presentation contains references to our non-GAAP operating expense, a financial measure that is not calculated in accordance with generally accepted accounting principles ("GAAP"). This non-GAAP financial measure excludes certain amounts or expenses from the corresponding financial measures determined in accordance with GAAP. Non-GAAP information is useful for investors, taken in conjunction with the Company's GAAP financial statements, because it provides greater transparency and period-over-period information with respect to the Company's operating performance and can enhance investors' ability to identify operating trends in the Company's business. Management uses these measures, among other factors, to assess and analyze operational results and trends and to make financial and operational decisions. Non-GAAP information is not prepared under a comprehensive set of rules and should only be used to supplement an understanding of the Company's operating results as reported under GAAP, not in isolation or as a substitute for, or superior information prepared and presented in accordance with GAAP. In addition, this non-GAAP financial measure is unlikely to be comparable with non-GAAP information provided by other companies. The determination of the amounts that are excluded from non-GAAP financial measures is a matter of management judgment and depends upon, among other things, the underlying expense or income amounts. Reconciliations between these non-GAAP financial measures and the most comparable GAAP financial measures are included in the slides in this presentation on which a non-GAAP number appears.

Certain information contained in this presentation relates to or is based on studies, publications, surveys and other data obtained from third party sources and Verastem Oncology's estimates and research. While Verastem Oncology believes these third party sources to be reliable as of the date of this presentation, it has not independently verified, and does not represent or warrant as to the adequacy, fairness, accuracy or completeness of, any information obtained from third party sources. In addition, all of the market data included in this presentation involves a number of assumptions and limitations, and there can be no guarantee as to the accuracy or reliability of such assumptions.



Verastem Oncology

Well Positioned to Capitalize on Growth Opportunities

We are a biopharmaceutical company committed to developing and commercializing new medicines for patients battling cancer

Lead clinical program has best-in-class potential

Avutometinib (VS-6766; RAF/MEK clamp) and defactinib (defactinib) are clinically active against RAS pathway-driven cancers

Rapid development path to market in LGSOC

FDA Breakthrough Therapy Designation; Updated RAMP 201 trial show a confirmed objective response rate in patients with recurrent low-grade serous ovarian cancer treated with avutometinib and defactinib; target enrollment was achieved; timing of accelerated approval filing to be based on data from finalization of confirmatory study plans

Significant downstream market opportunity and blockbuster potential

30% of all human cancers are driven by mutations in RAS pathway; Avutometinib combinations potentially broadly applicable across a variety of tumor types.

Clinical collaborations with Amgen & Mirati evaluate combinations of avutometinib with sotorasib & adagrasib in KRAS G12C NSCLC supported by strong pre-clinical data. **Multiple clinical studies in progress** evaluating avutometinib combinations across RAS pathway-driven cancers

Patent Update

Recently issued intermittent dosing IP for both avutometinib + defactinib extends patent coverage up to 2035

Strong balance sheet

Cash balance of \$111.2 million as of March 31, 2023
Up to \$150 million of non-dilutive funding available from strategic partners
Company ended Q1 2023 with \$15.7 million GAAP operating expenses and \$17.8 million non-GAAP operating expenses*

* Q1 2023 GAAP operating expenses - \$15.71M plus change in FV of preferred stock tranche liability of \$3.43 million minus Q1 2023 non-GAAP operating expenses of \$1.31M = \$17.83M Q1 2023 non-GAAP operating expenses

Key VSTM Achievements & Anticipated Milestones

	1H2022	2H2022	1Q2023	2Q2023
LGSOC	<ul style="list-style-type: none"> ✓ RAMP 201 Selection Phase Complete; Initiated enrollment of Expansion Phase ✓ RAMP 201 Selection Phase Update** ✓ Translational data from FRAME LGSOC cohort presented 	<ul style="list-style-type: none"> ✓ RAMP 201 Second Interim Update ✓ RAMP 201 FDA Meeting - Avuto + defactinib selected as Go-Forward 	<ul style="list-style-type: none"> ✓ RAMP 201 Complete target enrollment of Expansion Phase ✓ Launch LGSOC patient education campaign 	<ul style="list-style-type: none"> ✓ Present updated results of Part A RAMP 201 (ASCO) Discuss confirmatory trial study design with FDA for recurrent LGSOC program
NSCLC	<ul style="list-style-type: none"> ✓ RAMP 202 Complete enrollment of Selection Phase ✓ Initiate RAMP 203 (avuto + sotorasib) G12C ✓ Top-Line Data from avutometinib + everolimus in KRAS mt ✓ RAMP 202 Amended to include BRAF mt cohorts 	<ul style="list-style-type: none"> ✓ Initiate RAMP 204 (avuto + adagrasib) G12C ✓ Top-Line Data from RAMP 202 Selection Phase ✓ RAMP 203 advanced to final dose level 		<ul style="list-style-type: none"> ✓ RAMP 203: Determine recommended phase 2 dose ✓ Present updated results of IST avutometinib + everolimus in KRAS mt NSCLC
Additional Indications	<ul style="list-style-type: none"> ✓ PanCAN Agreement Executed 	<ul style="list-style-type: none"> ✓ Initiate combo study of avutometinib + cetuximab in KRAS mt CRC * ✓ Initiate RAMP 205 combo avutometinib + gemcitabine/nab-paclitaxel + defactinib in metastatic pancreatic cancer 		<ul style="list-style-type: none"> Initiate combo study of avutometinib + pembrolizumab in BRAF mt melanoma * Initiate thyroid cancer * Pediatric Cancer * Early safety data of avutometinib + cetuximab in KRAS mt CRC *



*Investigator-sponsored research

**RAMP 201 update expected to be provided once go-forward treatment regimen determined, timing of which will be driven by data

- - - Indicate anticipated milestones

Avutometinib is a Differentiated Agent with the Potential to Serve a Backbone for Combinations Across RAS Pathway-Driven Cancers

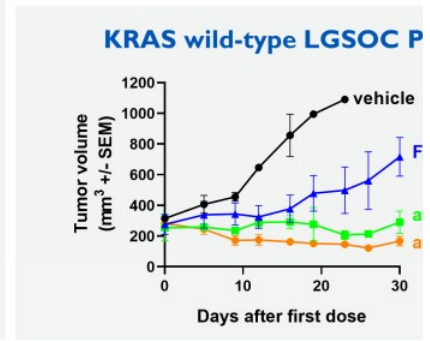
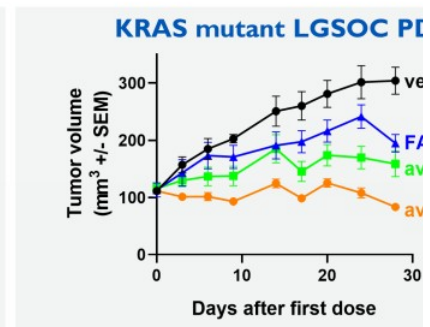
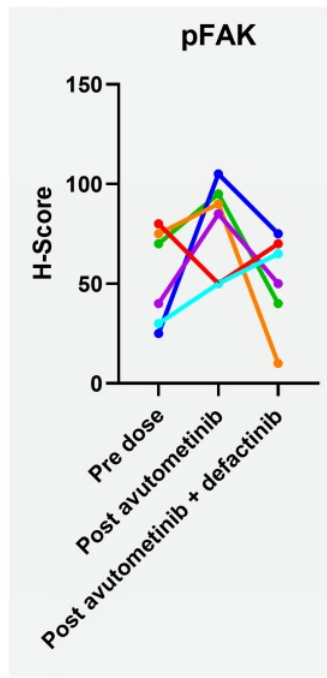
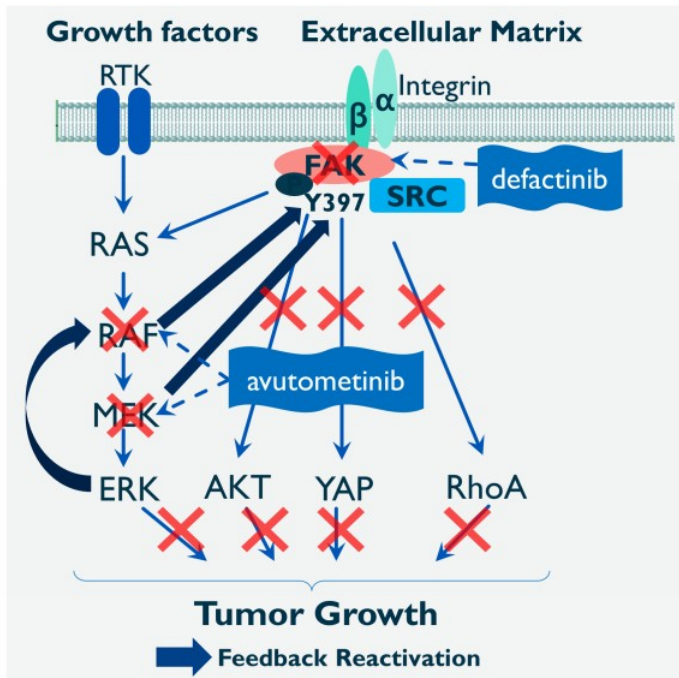
- Unique RAF/MEK clamp mechanism of action
- Novel intermittent dosing schedule; convenient oral regimen
- Breakthrough Therapy Designation for combination of avutometinib and defactinib for treatment of recurrent grade serous ovarian cancer (LGSOC) after one or more prior lines of therapy including platinum-based chemotherapy
- Potential best-in-class safety & tolerability profile relative to marketed MEK inhibitors, with potential for combinability with agents from multiple target classes
- Promising signals of clinical activity in various RAS pathway-driven cancers, including in patients who have previously progressed on other MEK inhibitors
- Preclinical anti-proliferative activity across multiple MAPK pathway alterations (e.g. KRAS, NRAS, BRAF), multiple solid tumor indications
- Strong preclinical combination data with other agents targeting RAS pathway (e.g. KRAS G12C inhibitors), multiple solid tumor indications (e.g. FAK inhibitors)



RAF-Rapidly accelerated fibrosarcoma
MEK-Mitogen-activated protein kinase kinase
RAS-Rat sarcoma virus
MAPK-Mitogen-activated protein kinase

KRAS-Kirsten rat sarcoma virus
NRAS-Neuroblastoma RAS viral oncogene homolog
BRAF-v-raf murine sarcoma viral oncogene homolog B1
NFI-Neurofibromatosis type I

Strong Scientific Rationale for Avutometinib and FAK Inhibitor Com Anti-Tumor Efficacy in KRAS Mutant and Wild-Type LGSOC models



References: Banerji, BTOG Dublin, Jan 23, 2019; Banerji, AACR VM 1, April 27, 2020, CT143; Banerji, unpublished; Santin, unpublished

LGSOC Unmet Need & Opportunity

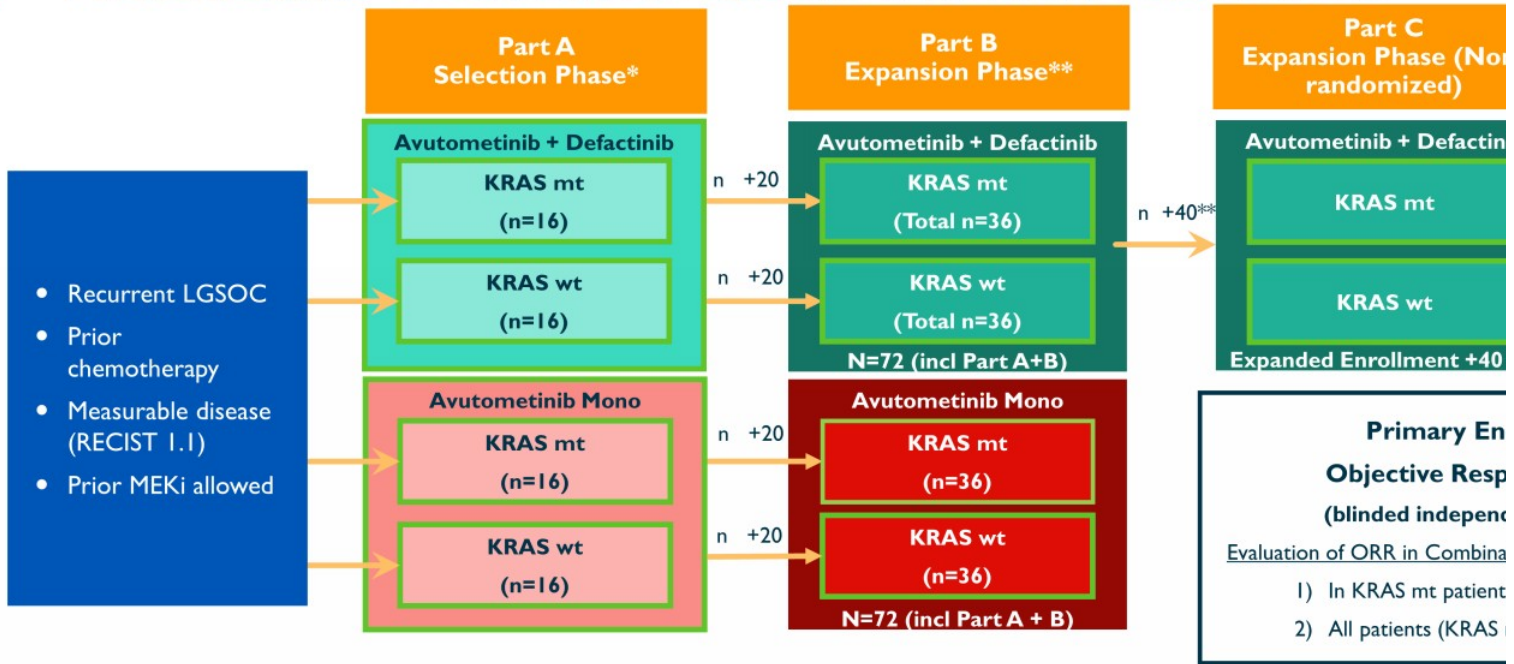
- LGSOC is a less common type of ovarian cancer that is often diagnosed in younger women
 - LGSOC is a unique disease that is distinct from high-grade serous ovarian cancer (HGSOC) in its protracted clinical course and low response to chemotherapy and thus requires a more tailored therapy
 - An estimated 1,000-2,000 patients are diagnosed with LGSOC per year in the U.S., with prevalence increasing with age
- There are currently no approved therapies specifically indicated for recurrent LGSOC
 - Recent clinical trials in recurrent LGSOC showed that standard-of-care chemo and endocrine therapy were ineffective (6-13% ORR).
 - LGSOC has a chemo-resistant nature and optimal treatment has not yet been defined. NCCN guidelines recommend clinical trials and observation highlighting the lack of approved & effective therapies
- LGSOC is known to be driven by the MAPK (RAS) pathway in $\geq 70\%$ of patients
- A phase I/II study in the UK (FRAME) evaluated the combination of avutometinib and defactinib
 - Results in recurrent LGSOC showed a 46% confirmed ORR with durable responses and favorable safety
- RAMP 201: A registration-directed Phase 2 trial of avutometinib and avutometinib + defactinib in recurrent LGSOC
 - Updated data from ASCO 2023 showed a 45% confirmed ORR in the combination arm with tumor response in 100% of evaluable patients

➤ Breakthrough Therapy Designation was granted for avutometinib and defactinib in recurrent LGSOC or more prior lines of therapy



References: Monk et al., The Evolving Landscape of Chemotherapy in Newly Diagnosed Advanced Epithelial Ovarian Cancer, 2019; Slomovitz et al., Low-grade serous ovarian cancer: State of the Science, 2020; Grisham et al., Low-Grade Serous Ovarian Cancer: Current Treatment Paradigms and Future Directions, 2020; Project GENIE Cohort v9.0-public and Verastem unpublished analysis; Banerjee et al., Phase I study of the combination of the dual RAF/MEK inhibitor FAK inhibitor defactinib: Results of efficacy in low grade serous ovarian cancer, ESMO 2021; Malpica et al., Interobserver and intraobserver variability system for grading ovarian serous carcinoma, 2007; NCCN guidelines v1.2023; Zwimpfer et al. Cancer treatment Reviews 112 (2023).

RAMP 201 (ENGOTov60/GOG3052): Registration-Directed Phase 2 Avutometinib ± Defactinib in Patients with Recurrent LGSOC



*Dosing: Avutometinib + Defactinib combo: Avutometinib 3.2 mg PO 2x/wk 21/28 days + Defactinib 200 mg PO BID: 21/28 days;
 Avutometinib monotherapy: Avutometinib 4.0 mg PO 2x/wk 21/28 days

**Expansion Phase – Final sample size to be adjusted based on adaptive design



RAMP 201
ASCO 2023 Update

Updated Data from Part A of RAMP 201

	Avutometinib + Defactinib	
	Total (n=29)	
ORR, % (n)	45% (13) 95% CI: (26%, 64%)	
	KRAS mt 60% (9/15)	KRAS wt 29% (4/14)
Tumor shrinkage, % (n)	86% (25)	
Median Time to Response	5.5 months (range 1.6-14.7 months)	
Relative Dose Intensity	83% ± 20%	

- 29 patients were evaluable for efficacy with a minimum follow-up of 12 months and 13 (45%) patients remain on study treatment
- Patients were heavily pretreated with a median of 4 prior systemic regimens (up to 11)
 - 3 out of 4 patients who received prior MEK inhibitors responded to the combination
- Median duration of response and median progression free survival have not been reached
- Safety and tolerability continued to be favorable and consistent with previously reported data
 - The discontinuation rate due to ≥ 1 adverse event was 12% in the combination overall to date (4.9% due to elevated bilirubin)
- Finalizing the design of a randomized confirmatory trial with the FDA, which is planned to begin in the second half of 2023

“These results demonstrate avutometinib in combination with defactinib can deliver high response rates for patients with recurrent ovarian cancer, with a promising safety profile to date. It is particularly encouraging to see extensive tumor shrinkage in women who have had severe side effects from prior MEK inhibitors. These latest findings suggest the combination may offer a new treatment option for women with recurrent ovarian cancer, and we are hopeful it will become the new standard of care.” –Dr. Susana Banerjee, MBBS, MA PhD, FRCP, global and lead investigator, Consultant Medical Oncologist at The Royal Marsden NHS Foundation Trust and Team Leader in Women’s Cancers at The Institute of Cancer Research



Reference: Banerjee et al., ASCO June 2023

Recent LGSOC Trials with Standard of Care Highlight High Unmet I in Recurrent LGSOC

Trial	Median Number of Prior lines of Therapy	Prior MEK Allowed	Prior Bevacizumab	Therapy	Response Rate ORR	Image Assessment	Median PFS Months (95% CI)
GOG 281 ¹	2 (1-10)	No	* Low %	Standard of Care	6% ^ 95% CI: (3%, 12%)	INV	7.2 (5.6-9.9)
				Trametinib	26% ^ 95% CI: (19%, 35%)	INV	13.0 (9.9-15.0)
MILO ²	2 (1-8)	No	* Low %	Standard of Care	13% 95% CI: (7%, 21%)	BICR	10.6 (9.2 to 14.5)
				Binimetinib	16% 95% CI: (11%, 22%)	BICR	9.1 (7.3-11.3)

¹ Study GOG 281 trial Gershenson et al., Lancet 2022

² MILO Study Monk et al., J Clin Oncol 2020.

* Low historical use of bevacizumab during trial conduct. % not reported
MILO: no more than 3 lines of prior chemotherapy

SoC = Standard of Care

GOG 281: (chemotherapy / endocrine therapy)

PLD (liposomal doxorubicin), paclitaxel, topotecan, letrozole or tamoxifen

MILO: (chemotherapy only)

PLD (liposomal doxorubicin), paclitaxel or topotecan

INV = Investigator

BICR = Blinded ind

PFS = Progression

CI = confidence int



Current Trials with Combination of Avutometinib and Defactinib Consistent Overall Response Rate of ~45%

Trial	Median Number of Prior lines of Therapy	Prior MEK Allowed	Prior Bevacizumab	Therapy	Response Rate ORR	Image Assessment	Median PFS Months (95% CI)
FRAME ¹	3	Yes	12 %	Avutometinib + Defactinib	46% [^] 95% CI: (26%, 67%)	INV	23 (11 - NR)
RAMP 201 Part A (ASCO 2023 data) ²	4	Yes	65%	Avutometinib + Defactinib	45% 95% CI: (26%, 64%) 52%*	BICR	Not Yet Reached

¹ Banerjee et al., ESMO Sept 2021

² Banerjee et al., ASCO June 2023

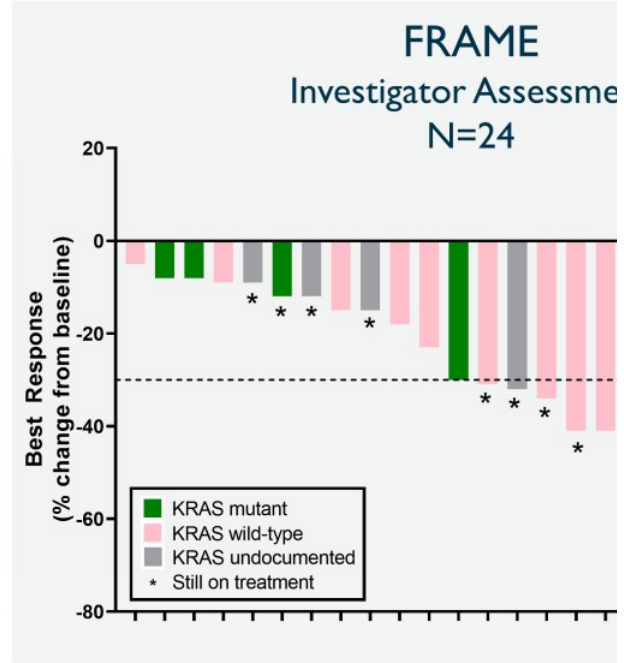
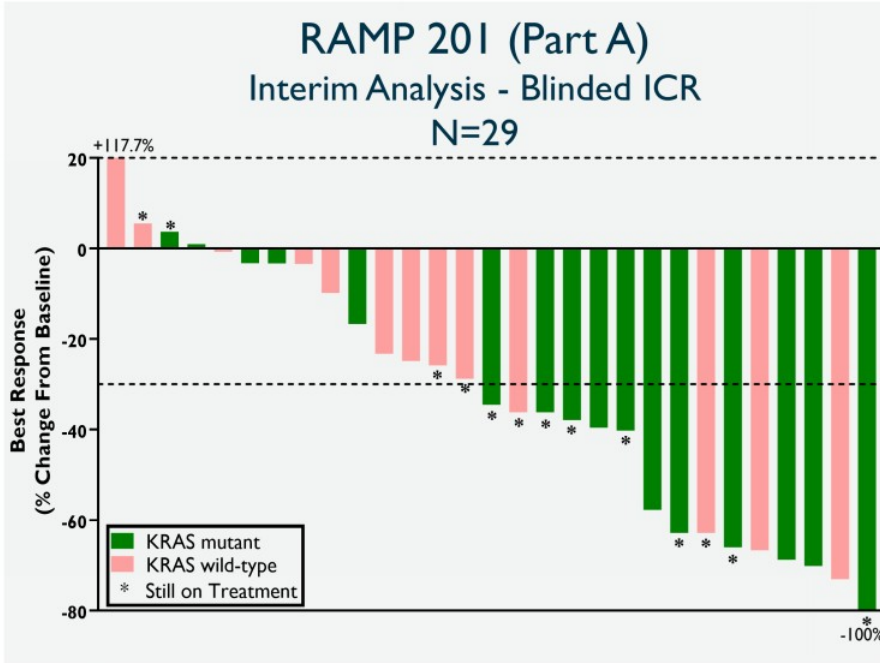
* Confirmed + Uncon

** 12% discontinuation in all combination pts (Part A + B (n=81): 4.9%

INV = Investigator
BICR = Blinded independent
PFS = Progression free survival

Go Forward Regimen: Combination of Avutometinib and Defactinib

Initial Data from RAMP 201 Trial Reinforce Findings from FRAME Trial



RAMP 201: Safety and Tolerability Profile of Avutometinib + Defactinib

No New Safety Signals; Few Discontinuations Due to Adverse Events

Most Common Treatment-Related Adverse Events (>20%) in All Treated Patients

- Majority of adverse events are mild to moderate and manageable/reversible¹
- Few discontinuations due to adverse events (12.3% in combo due to \geq I TEAE 4.9% due to elevated blood CPK*)
 - * No association to date with clinically significant toxicities, including rhabdomyolysis

Avutometinib + Defactinib (n=81)		
	Any Grade	G
Nausea, n (%)	50 (61.7)	
Diarrhea, n (%)	40 (49.4)	
Blood CPK increased, n (%)	39 (48.1)	
Oedema peripheral, n (%)	34 (42.0)	
Vomiting, n (%)	30 (37.0)	
Vision blurred, n (%)	29 (35.8)	
Dermatitis acneiform, n (%)	28 (34.6)	
Fatigue, n (%)	27 (33.3)	
Rash, n (%)	25 (30.9)	
Dry skin, n (%)	18 (22.2)	
Anemia, n (%)	14 (17.3)	



Reference: Banerjee et al., ASCO June 2023;
¹ J Clin Oncol 41, 2023 (suppl 16; abstr 5515)

Plan to File for Accelerated Approval based on Completed RAMP 20 and FRAME Study Results

Update











- Combination of avutometinib with defactinib selected as go forward treatment regimen
- Combination development continues in all recurrent LGSOC, regardless of KRAS status
- Encouraging efficacy results include independently confirmed responses
- No new safety signals; few discontinuations due to adverse events



Next Steps

- Target enrollment for primary analysis combination has been achieved
- Plan to file for accelerated approval based on totality of the data from the RAMP 20 studies
- Continued enrollment in RAMP 201 is planned to expand clinical experience in anticipation of initiation of a confirmatory study
- The Company will provide an update with the FDA on the confirmatory study
- The Company is planning a RAMP 20 presentation at ASCO 2023

Comprehensive approach to establish more complete blockade of RAS pathway & downstream pathways

	Indication	Incidence/ Prevalence	Regimen	Setting
Gynecologic Cancers	LGSOC	Prevalence ¹ : 6K 	Avutometinib + defactinib	Relapsed Refractory molecularly profiled LGSOC
	Gynecologic Basket*	Incidence ⁶⁻¹⁰ : 85K	Avutometinib + defactinib	Recurrent RAS Pathway-driven (RAS/RAF/NF1) endometrioid cancer, ovarian cancer, high-grade serous ovarian cancer or cervical cancer
NSCLC Adenocarcinoma	KRAS G12C	Incidence ^{2,3} : 114K 	Avutometinib + sotorasib  Avutometinib + adagrasib 	Recurrent KRAS G12C with prior KRAS G12C inhibitor(i) treatment G12Ci naïve Recurrent KRAS G12C with prior KRAS G12Ci treatment that pro
	BRAF mt	Incidence ^{2,3} : 114K 	Avutometinib + defactinib	Recurrent BRAFV600E & non-V600E mutant NSCLC
Pancreatic	PDAC	Incidence ⁴ : 58K 	Avutometinib + defactinib + gemcitabine/nab-paclitaxel 	Previously untreated (front-line) metastatic pancreatic ductal adenocarcinoma (PDAC)
CRC	KRAS mt*	Incidence ⁵ : 148K 	Avutometinib + cetuximab	Recurrent metastatic KRAS mt
Breast Cancer	ER+*	Incidence ⁵ : 279K 	Avutometinib + abemaciclib + fulvestrant	Recurrent ER+/HER2- breast cancer following progression on CDK4/6 inhibitor
Melanoma	BRAFV600E*	Incidence ⁴ : 108K 	Avutometinib + pembrolizumab	Recurrent BRAFV600E/K or NRAS (Phase I only) mutant Melanoma following progression on prior anti-PD1 therapy

¹ References: Monk, Randall, Grisham, The Evolving Landscape of Chemotherapy in Newly Diagnosed Advanced Epithelial Ovarian Cancer, Am Soc Clin Oncol Educ Book; 2019; Slomovitz, Gourley, Carey, Malpica, Shih, Huntsman, Fader., Grisham, State of the Science; Gynecol Oncol; 2020. Grisham, Iyer, Low-Grade Serous Ovarian Cancer: Current Treatment Paradigms and Future Directions; Curr Treat Options Oncology; 2018; Globocan 2020; ²Pakkala and Ramalingam JCI Insight 2018 | Cancer J Clin 2020;70:7-30; ³Cancer Statistics 2020, Siegel et. al. CA Cancer J Clin 2020;70:7-30 ⁴CbioPortal; ⁵Uterine cancer is one of the leading gynecologic neoplastic disorders in the US, of which over 80% are endometrioid adenocarcinomas (EA) for approximately 10% of all OC, with the majority of cases diagnosed as low grade, early stage disease with excellent clinical; ⁶Mucinous ovarian cancer: 3-11% of ovarian cancer (Hada et al., 2021); ⁷90% of Ovarian Cancer is Epithelial Ovarian Ca (https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2018/cancer-facts-and-figures-2018.pdf); ⁸HGSOC the most common type of ovarian cancer, accounting for approximately 75% (https://ocrahope.org/news/high-grade-serous-carcinoma/#:~:text=High%2Dgrade%20serous%20carcinoma%20is,unless%20another%20type%20is%20specified.)

Broad Development Opportunities Across Multiple RAS/MAPK Pathway-Driven

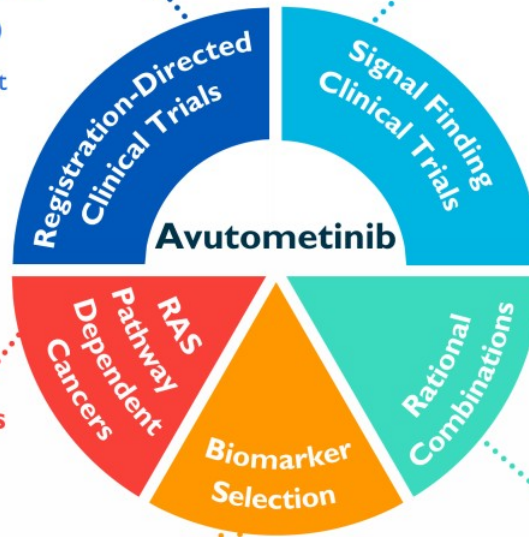
High Priority Registration Indication

Registration-Directed Trial Initiated in 4Q20

- LGSOC^{1,2} (RAMP 201)-Target enrollment reached

Key Signal Finding

- Avutometinib + G12Ci in KRAS (RAMP 203 - sotorasib) & (RAMP 204 - adagrasib)
- Avutometinib + defactinib in BR V600E NSCLC^{1,2} (RAMP 202)
- Avutometinib + defactinib and gemtuzumab in first line pancreatic
- Avutometinib + defactinib in RAS wild-type RA gynecological cancers^{1,2}
- Avutometinib + cetuximab in KRAS wild-type RA breast cancer²
- Avutometinib + abemaciclib and pembrolizumab in breast cancer²
- Avutometinib + pembrolizumab in melanoma²



RAS Pathway Dependent Cancers

- Gynecological^{1,2}
- NSCLC^{1,2}
- Colorectal^{1,2}
- Melanoma^{1,2}
- Pancreatic²
- Thyroid^{1,2}

Biomarker Selection

- KRAS mt^{1,2}
- BRAF mt (V600 & non-V600)^{1,2}
- NRAS mt^{1,2}
- CRAF mt/fusions²

Rational Combinations

- KRAS inhibitors² (G12Ci & G12S)
- Anti-EGFR²
- Everolimus^{1,2}
- CDK4/6 inhibitor²
- Anti-PD-1^{1,2}
- Chemotherapy²



¹ Supported by clinical data

² Supported by preclinical data

Robust Clinical Program: Avutometinib in multiple combinations across RAS/MAPK pathway-driven tumors

INDICATION	REGIMEN	STUDY NAME	PRECLINICAL	PHASE I	PHASE 2	PHASE 3
LGSOC ¹	Avutometinib + defactinib	RAMP 201	[Progress bar: Preclinical, Phase I, Phase 2]			Registration-directed trial cohort fully enrolled
R/R LGSOC	Avutometinib + defactinib	IST-FRAME	[Progress bar: Preclinical, Phase I, Phase 2]			
Gynecological Cancers (RAS Pathway-driven) ²	Avutometinib + defactinib	IST	[Progress bar: Preclinical, Phase I, Phase 2]			
Mesonephric ²	Avutometinib + defactinib	IST	[Progress bar: Preclinical, Phase I, Phase 2]			
R/R NSCLC (BRAF mt)	Avutometinib + defactinib	RAMP 202	[Progress bar: Preclinical, Phase I, Phase 2]			
R/R NSCLC (KRAS G12C)	Avutometinib + sotorasib	RAMP 203	[Progress bar: Preclinical, Phase I]			
R/R NSCLC (KRAS G12C)	Avutometinib + adagrasib	RAMP 204	[Progress bar: Preclinical, Phase I]			
Pancreatic Ductal Adenocarcinoma	Avutometinib + gemcitabine/nab-paclitaxel + defactinib	RAMP 205	[Progress bar: Preclinical, Phase I]			
R/R NSCLC (KRAS mt)	Avutometinib + everolimus (mTORi)	IST	[Progress bar: Preclinical, Phase I, Phase 2]			
R/R Colorectal Cancer (KRAS mt)	Avutometinib + cetuximab (EGFRi)	IST	[Progress bar: Preclinical, Phase I]			
ER+ Breast Cancer	Avutometinib + abemaciclib + fulvestrant	IST	[Progress bar: Preclinical, Phase I]			
BRAFV600E Melanoma ²	Avutometinib + pembrolizumab	IST	[Progress bar: Preclinical, Phase I]			

¹ FDA Breakthrough T₂



Key Financial Statistics

As of and for the quarter ended March 31, 2023

Cash, cash equivalents & investments	\$111.2M
GAAP Operating Expenses	\$15.7M
Non-GAAP Operating Expenses*	\$17.8M
Shares Outstanding	16.7M**

Sources of Non-Dilutive Capital

- **Oxford Finance LLC Credit Facility**

- Up to \$150M available in a series of term loans
 - \$40M term loans outstanding as of March 2023.
 - Remaining \$110M available upon achievement of pre-defined milestones or at lender's discretion
- Floating interest rate, subject to a floor and a cap; 5% final payment charge, and loan subject to 1-3% early pay
- Interest only payments through April 2025
- No financial covenants

- **Secura Bio, Inc. (Secura) Asset Purchase Agreement – COPIKTRA**

- Regulatory and commercial milestone payments up to \$95M
- Entitled to receive 50% of royalties, milestones, and sublicensee revenue payments made to Secura related to C
- Low double-digit royalties on annual net sales over \$100M in US, EU, and UK



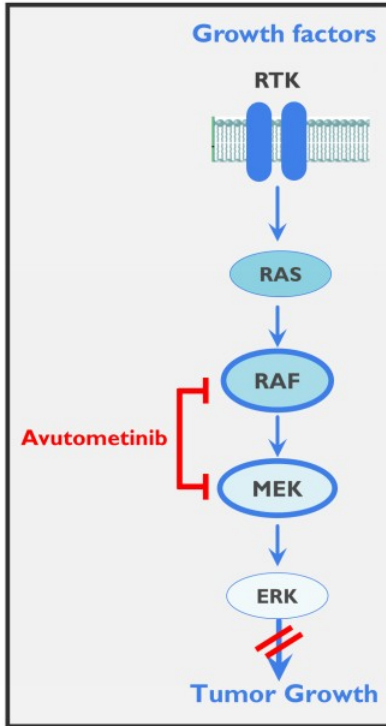
* Q1 2023 GAAP operating expenses - \$15.71M plus change in FV of preferred stock tranche liability of \$3.43 minus Q1 2023 stock compensation of \$1.31M = \$17.83M Q1 2023 non-GAAP operating expenses.

**Adjusted for Reverse Split which was effective May 31, 2023. Excludes Series A Preferred (0.8M Shares on as-converted basis) and Series B Preferred (4.2M Shares on as-converted basis).

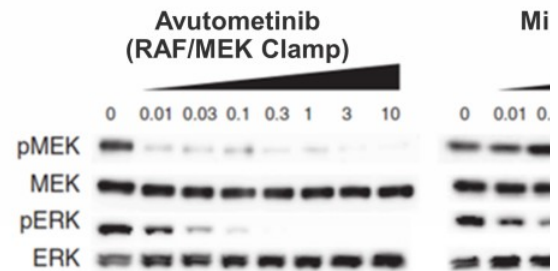
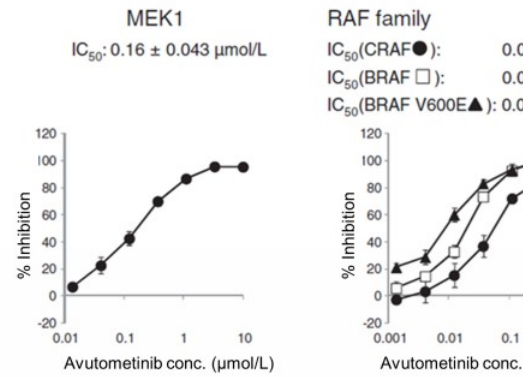


Avutometinib RAF/MEK Clamp Program Overview

Avutometinib is a Unique Small Molecule RAF/MEK Clamp

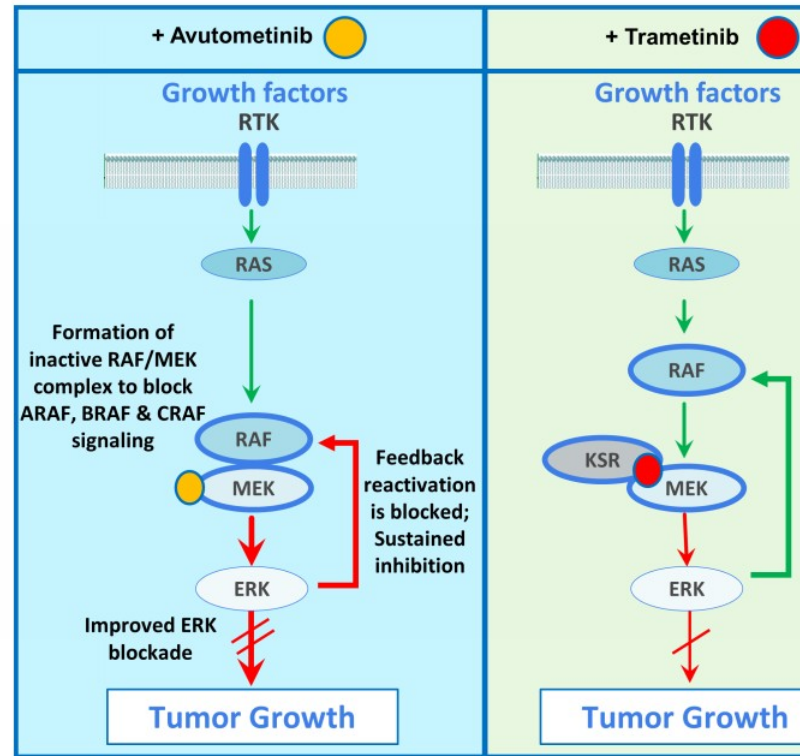
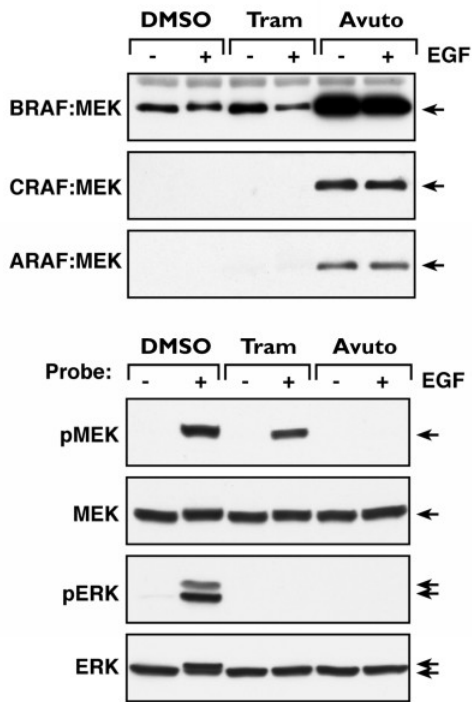


- Avutometinib inhibits MEK, BRAF & CRAF by trapping these molecules in inactive complexes
- MEK inhibitors paradoxically induce MEK phosphorylation (pMEK) by relieving ERK-dependent feedback inhibition of RAF
- By inhibiting RAF phosphorylation of MEK, avutometinib has advantage of not inducing pMEK
- Avutometinib inhibits ERK signaling more completely; may confer enhanced therapeutic activity



Avutometinib is a Unique RAF/MEK Clamp which Induces Inactive Complexes of MEK with ARAF, BRAF & CRAF

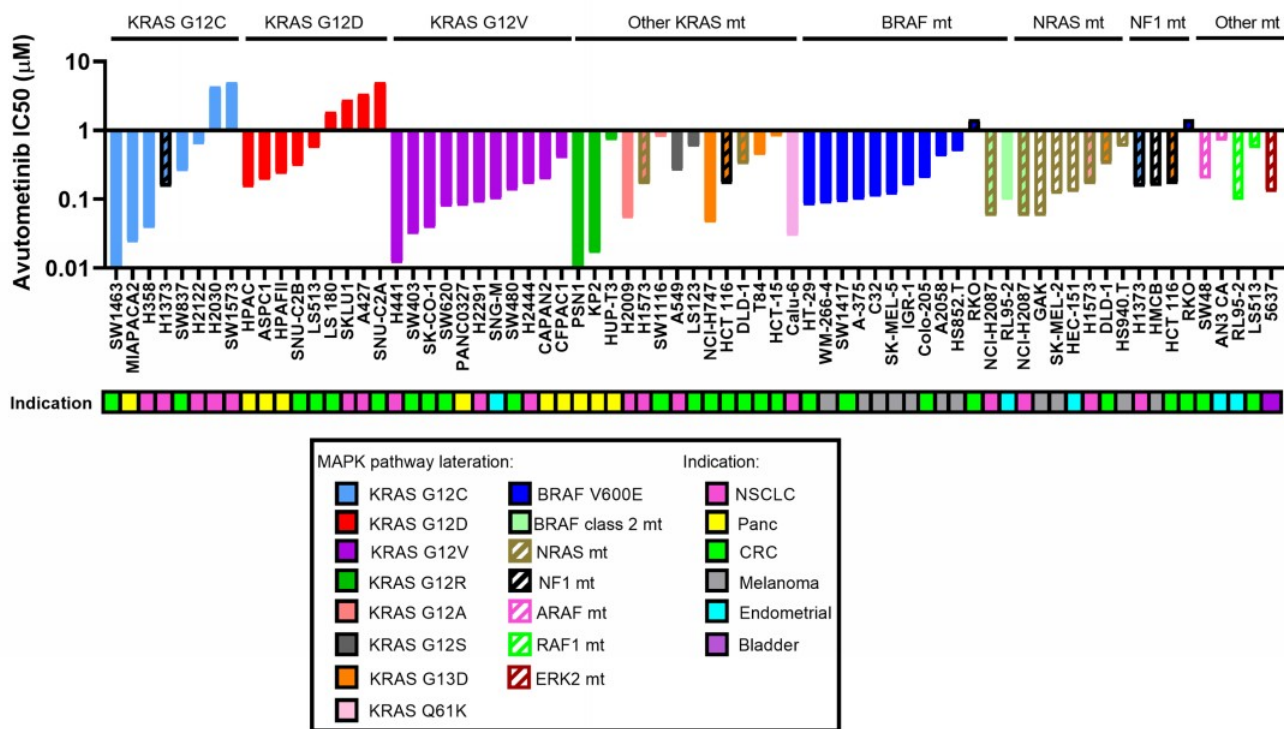
Contrasting mechanism of action vs. trametinib



Deborah Morrison unpublished

Reference: Coma et al., AACR 2022

Avutometinib Inhibits Cell Proliferation Across Multiple RAS/MAPK Alterations and Multiple Solid Tumor Histologies



Reference: Pachter RAS-Targeted Drug Development Summit 2022; 3D proliferation assay

Optimized Dosing Schedule Defined: Favorable Tolerability Profile with Novel Intermittent Dosing Regime

Summary of Adverse Events Grade ≥ 3 Occurring in $\geq 5\%$ of patients

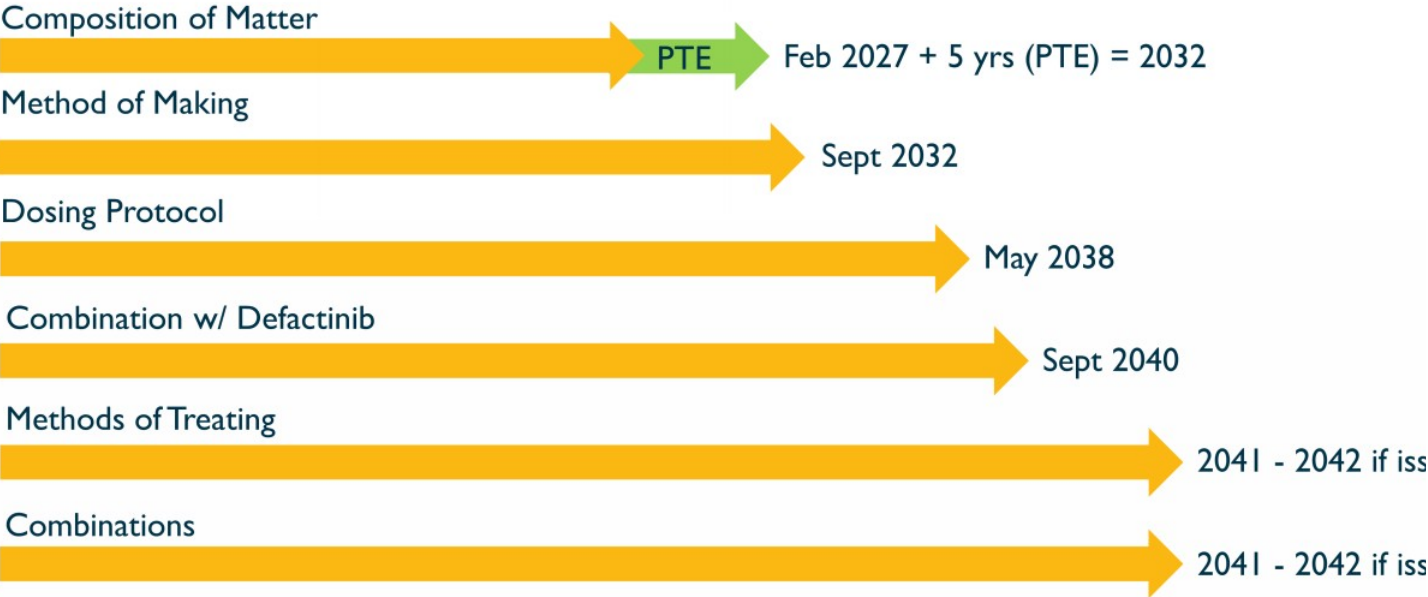
	Avutometinib monotherapy Daily at MTD N=6 28-day cycle	RP2D Avutometinib monotherapy 4mg twice weekly N=26 28-day cycle	RP2D (Avutometinib weekly + def twice N=26 21 days of 2
Treatment Related Adverse Event	Grade ≥ 3	Grade ≥ 3	Grade ≥ 3
Rash	3 (50%)	5 (19%)	2 (8%)
CK elevation (Creatine phosphokinase)	1 (17%)	2 (8%)	2 (8%)



¹ Chenard-Poirier, et al. ASCO 2017
References: Banerji, Q4 2020 report; Data on file
RP2D: recommended phase 2 dosing



Avutometinib Patent Exclusivity





Avutometinib ± Defactinib in
Low-Grade Serous Ovarian Cancer

LGSOC is a Unique RAS Pathway-Driven Cancer with a High Unmet



LGSOC is a type of ovarian cancer that disproportionately affects younger women



1,000 to 2,000 patients in the U.S. and 15,000 to 30,000 worldwide diagnosed with LGSOC each year



A slow growing cancer, that has a median survival of almost 10 years, so patients remain in treatment for a long time (10-yr prevalence ~80,000 worldwide, ~6,000 US)

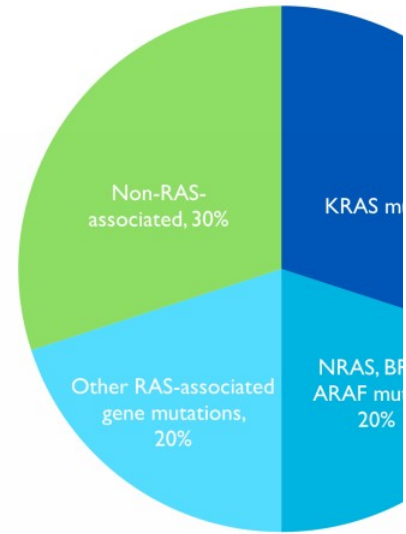


Patients often experience significant pain and suffering from their disease over time



Most prior research has focused on high grade serous ovarian cancer (HGSOC). However, LGSOC is clinically, histologically and molecularly unique from HGSOC with limited treatments available

**~30% of LGSOC Patients Have
~70% of LGSOC Shows RAS Pathway**



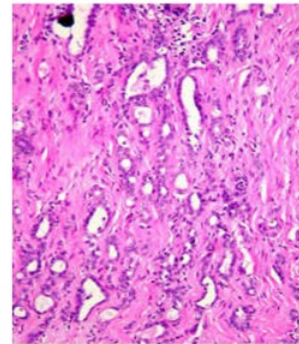
References: AACR Project GENIE Cohort v9.0-public at



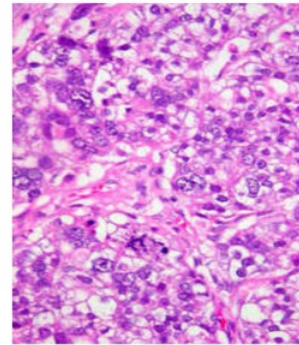
References: Monk, Randall, Grisham, The Evolving Landscape of Chemotherapy in Newly Diagnosed Advanced Epithelial Ovarian Cancer, Am Soc Clin Oncol; 2021; Slomovitz, Gourley, Carey, Malpica, Shih, Huntsman, Fader., Grisham et al, Low-Grade serous ovarian cancer: State of the Science; Gynecol Oncol; 2021; Serous Ovarian Cancer: Current Treatment Paradigms and Future Directions; Curr Treat Options Oncology; 2018; Malpica et al., Am J. Surg Pathol 2018

Low-Grade and High-Grade Serous Ovarian Cancer Are Different [

Variable	LGSOC	HGSOC
Nuclear atypia	Uniform round to oval with little variation	+++ Marked variation
Mitotic Index	<12 mitoses per 10 hpf	>12 mitoses per 10 hpf
Chromatin and variation in size of nucleus	Little	Marked (nuclear size ratio ≥ 3)
Mutation	KRAS ++ BRAF + ER/PR +++	P53 +++ BRCA1/2 +
Precursor	Serous borderline tumor	Tubal intraepithelial neoplasia



LGSOC



HGSOC

Reference: Malpica et al., Am J. Surg Pa

Recurrent LGSOC: High Medical Need No Approved Treatment Options – Limited Benefit from Available Therapies

Recurrent Low-Grade Ovarian Cancer – Treatment Guidelines¹

RECURRENCE THERAPY^f

Recurrent disease^s →

- Clinical trial
- or
- Trametinib^f
- or
- Binimetinib (category 2B)^f
- or
- Dabrafenib + trametinib (for *BRAF* V600E-positive tumors)^f
- or
- Hormonal therapy^t
- or
- Chemotherapy (if not previously used), [see OV-C \(6 of 11\)](#)
- or
- Other systemic therapy^{f,u}
 - For platinum-sensitive disease, [see OV-C \(8 of 11\)](#)
 - For platinum-resistant disease, [see OV-C \(9 of 11\)](#)
- or
- Observation

No Category I recommendations (high-level evidence)
Category 2a (lower-level evidence with uniform N unless otherwise indicated)

^f: There is no standard sequencing of drugs for recurrence. Considerations include prior therapies, drug efficacy, and relative toxicity profile.

^t: An aromatase inhibitor (i.e., letrozole, anastrozole) is preferred if not used previously. Fulvestrant, tamoxifen is recommended if an aromatase inhibitor is not used.

Preferred Regimens

- Paclitaxel/carboplatin q3weeks^{f,g} ± maintenance letrozole (category 2B) or other hormonal therapy (category 2B)^h
- Paclitaxel/carboplatin/bevacizumab + maintenance bevacizumab^{i,j} (ICON-7 & GOG-218)
- Hormone therapy (aromatase inhibitors: anastrozole, letrozole, exemestane) (category 2B)

Recent LGSOC Trials Highlight High Unmet Need

Trial	Number of Prior Systemic Therapies Median (range)	Prior MEK allowed	Prior Bevacizumab	Therapy	Response Rate ORR	Image Assessment	Median PFS Months (95% CI)
GOG 281 ¹	2 (1-10)	No	* Low %	SoC (n=130)	6% 95% CI: (3%, 12%)	INV	7.2 (5.6-9.9)
				Trametinib (n=130)	26% 95% CI: (19%, 35%)	INV	13.0 (9.9-15.0)
MILO ²	2 (1-8)	No	* Low %	SoC (n=101)	13% 95% CI: (7%, 21%)	BICR	10.6 (9.2 - 14.5)
				Binimetinib ² (n=198)	16% 95% CI: (11%, 22%)	BICR	9.1 (7.3-11.3)

¹ Study GOG 281 trial Gershenson et al., Lancet 2022

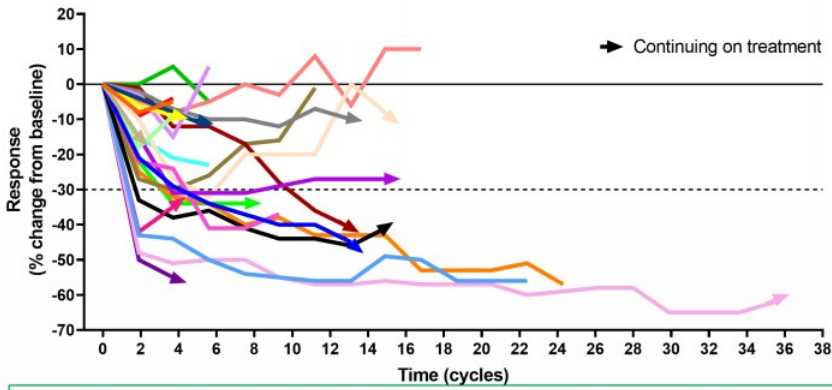
² MILO Study Monk et al., J Clin Oncol 2020.

* Low historical use of bevacizumab during trial conduct. % not reported
MILO: no more than 3 lines of prior chemotherapy

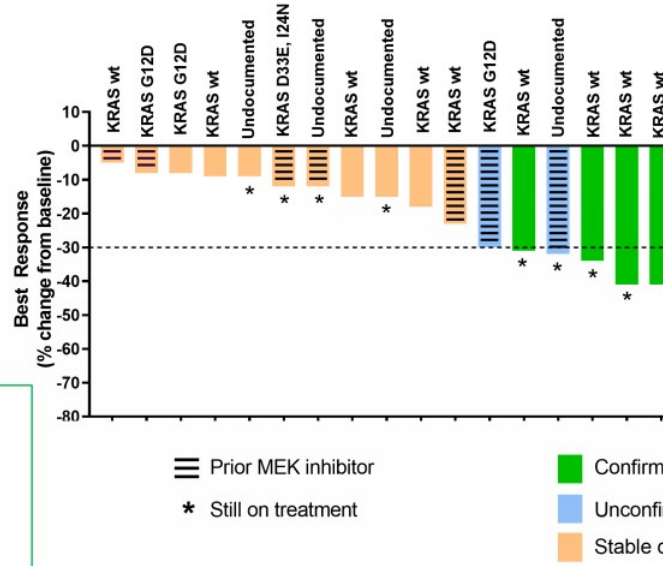
SoC = Standard of care
INV = Investigator
BICR = Blinded
PFS = Progression-free survival
CI = confidence interval
NR = Not reached

FRAME Study: Solid Foundation for the Development of Avutometinib in Combination with Defactinib in Recurrent LGSOC (n=24)

Response by RECIST



Best response by RECIST



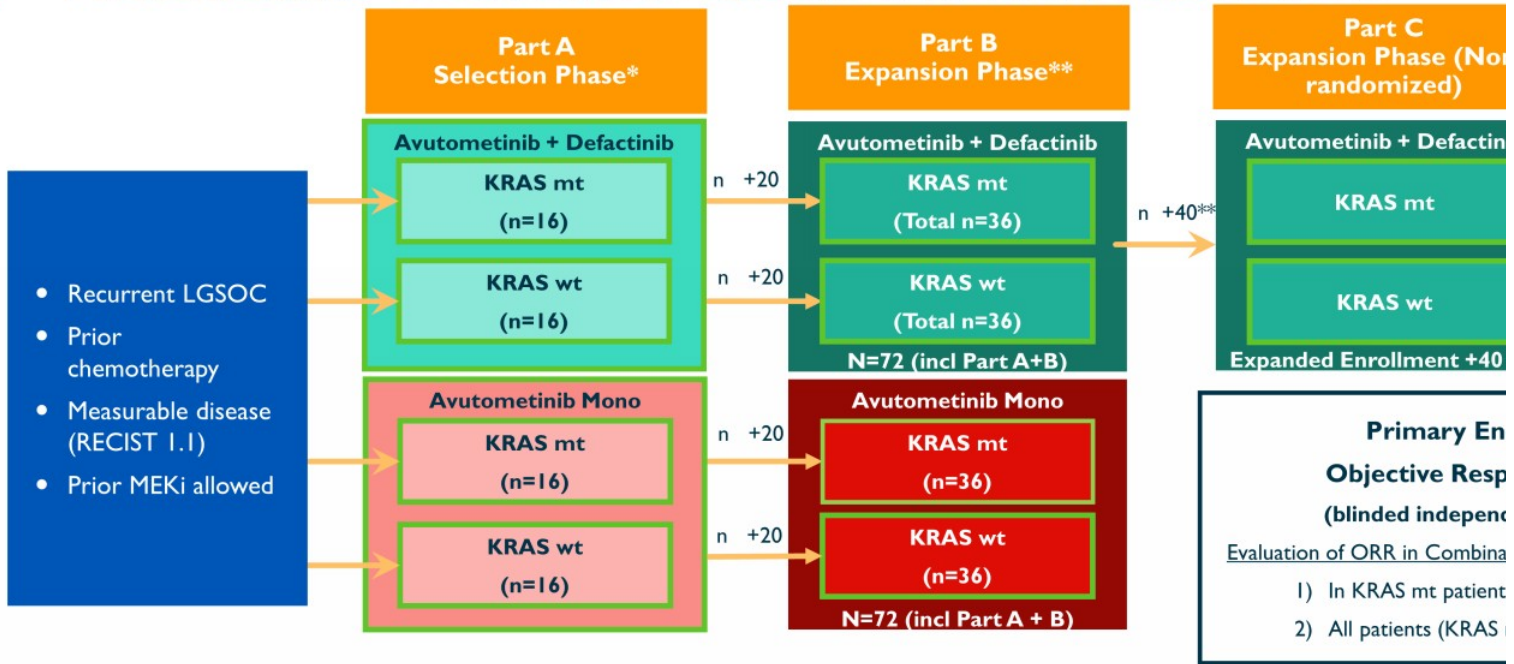
- Overall response rate (ORR) = 46% (11 confirmed PRs/24)
 - KRAS mutant ORR = 64% (7 confirmed PRs/11)
 - KRAS wild-type ORR = 44% (4 confirmed PRs/9)
 - KRAS status undetermined (1 unconfirmed PR/4)
- Response too early to determine for 2 pts on study for ≤ 5 months
- Median 3 lines of Prior Treatment (Prior MEKi 10 pts, Prior Bev 4 pts)
- Responses in patients previously treated with MEKi
- 54% (13/24) patients still on treatment
- 1 patient discontinuing for adverse events as of April 2021
- Median PFS 23 months (95% CI 10.6-NR) across all LGSOC

Data cut off April 2021
 MEKi: MEK inhibitor
 Bev: Bevacizumab
 PFS: Progression free survival
 NR: Not reached



Reference: Banerjee et al., ESMO Sept 2021

RAMP 201 (ENGOTov60/GOG3052): Registration-Directed Phase 2 Avutometinib ± Defactinib in Patients with Recurrent LGSOC



*Dosing: Avutometinib + Defactinib combo: Avutometinib 3.2 mg PO 2x/wk 21/28 days + Defactinib 200 mg PO BID: 21/28 days;
 Avutometinib monotherapy: Avutometinib 4.0 mg PO 2x/wk 21/28 days

**Expansion Phase – Final sample size to be adjusted based on adaptive design



RAMP 201
ASCO 2023 Update

Updated Data from Part A of RAMP 201

	Avutometinib + Defactinib	
	Total (n=29)	
ORR, % (n)	45% (13) 95% CI: (26%, 64%)	
	KRAS mt 60% (9/15)	KRAS wt 29% (4/14)
Tumor shrinkage, % (n)	86% (25)	
Median Time to Response	5.5 months (range 1.6-14.7 months)	
Relative Dose Intensity	83% ± 20%	

- 29 patients were evaluable for efficacy with a minimum follow-up of 12 months and 13 (45%) patients remain on study treatment
- Patients were heavily pretreated with a median of 4 prior systemic regimens (up to 11)
 - 3 out of 4 patients who received prior MEK inhibitors responded to the combination
- Median duration of response and median progression free survival have not been reached
- Safety and tolerability continued to be favorable and consistent with previously reported data
 - The discontinuation rate due to ≥ 1 adverse event was 12% in the combination overall to date (4.9% due to elevated bilirubin)
- Finalizing the design of a randomized confirmatory trial with the FDA, which is planned to begin in the second half of 2023

“These results demonstrate avutometinib in combination with defactinib can deliver high response rates for patients with recurrent ovarian cancer and a promising safety profile to date. It is particularly encouraging to see extensive tumor shrinkage in women who have had severe side effects from prior treatments, including prior MEK inhibitors. These latest findings suggest the combination may offer a new treatment option for women with recurrent ovarian cancer, and we are hopeful it will become the new standard of care.” –Dr. Susana Banerjee, MBBS, MA PhD, FRCP, global and lead investigator, Consultant Medical Oncologist at The Royal Marsden NHS Foundation Trust and Team Leader in Women’s Cancers at The Institute of Cancer Research



Recent LGSOC Trials with Standard of Care Highlight High Unmet Need in Recurrent LGSOC

Trial	Median Number of Prior lines of Therapy	Prior MEK Allowed	Prior Bevacizumab	Therapy	Response Rate ORR	Image Assessment	Median PFS Months (95% CI)
GOG 281 ¹	2 (1-10)	No	* Low %	Standard of Care	6% ^ 95% CI: (3%, 12%)	INV	7.2 (5.6-9.9)
				Trametinib	26% ^ 95% CI: (19%, 35%)	INV	13.0 (9.9-15.0)
MILO ²	2 (1-8)	No	* Low %	Standard of Care	13% 95% CI: (7%, 21%)	BICR	10.6 (9.2 to 14.5)
				Binimetinib	16% 95% CI: (11%, 22%)	BICR	9.1 (7.3-11.3)

¹ Study GOG 281 trial Gershenson et al., Lancet 2022

² MILO Study Monk et al., J Clin Oncol 2020.

* Low historical use of bevacizumab during trial conduct. % not reported
MILO: no more than 3 lines of prior chemotherapy

SoC = Standard of Care

GOG 281: (chemotherapy / endocrine therapy)

PLD (liposomal doxorubicin), paclitaxel, topotecan, letrozole or tamoxifen

MILO: (chemotherapy only)

PLD (liposomal doxorubicin), paclitaxel or topotecan

INV = Investigator

BICR = Blinded independent

PFS = Progression free survival

CI = confidence interval



Current Trials with Combination of Avutometinib and Defactinib Consistent Overall Response Rate of ~45%

Trial	Median Number of Prior lines of Therapy	Prior MEK Allowed	Prior Bevacizumab	Therapy	Response Rate ORR	Image Assessment	Median PFS Months (95% CI)
FRAME ¹	3	Yes	12 %	Avutometinib + Defactinib	46% [^] 95% CI: (26%, 67%)	INV	23 (11 - NR)
RAMP 201 Part A (ASCO 2023 data) ²	4	Yes	65%	Avutometinib + Defactinib	45% 95% CI: (26%, 64%) 52%*	BICR	Not Yet Reached

¹ Banerjee et al., ESMO Sept 2021

² Banerjee et al., ASCO June 2023

* Confirmed + Uncon

** 12% discontinuation in all combination pts (Part A + B (n=81): 4.9%

INV = Investigator
BICR = Blinded independent
PFS = Progression free surv

RAMP 201 Part A: Heavily Pre-Treated Patient Population

*Prior Platinum-Based Chemotherapy, Endocrine Therapy, Bevacizumab in Most Patients;
Prior MEK Inhibitor Therapy was Permitted*

	Avutometinib Monotherapy			Avutometinib +	
	KRAS mt (n=16)	KRAS wt (n=17)	Total (n=33)	KRAS mt (n=16)	KRAS wt (n=15)
Age (yrs), median (min, max)	58 (27, 72)	48 (27, 74)	51 (27, 74)	61 (29, 71)	50 (30, 72)
ECOG PS, n (%)					
0	8 (50)	15 (88)	23 (70)	11 (69)	9 (60)
I	8 (50)	2 (12)	10 (30)	5 (31)	6 (40)
Number of Prior Systemic Regimens, median (min, max)	4 (1, 10)	3 (1, 9)	3 (1, 10)	4 (1, 8)	5 (2, 10)
Prior platinum-based chemotherapy, n (%)	15 (94)	17 (100)	32 (97)	16 (100)	15 (100)
Prior MEK inhibitor therapy, n (%)	5 (31)	5 (29)	10 (30)	2 (13)	2 (13)
Prior Bevacizumab, n (%)	8 (50)	8 (47)	16 (48)	7 (44)	13 (87)
Prior Hormonal therapy, n (%)	11 (69)	13 (76)	24 (73)	15 (94)	13 (87)

RAMP 201 Part A: Evaluable Patient Population*

Positive ORR Confirmed by Blinded Independent Central Review (BICR) Support Avutometinib + Defactinib as Go Forward Regimen in LGSOC - Regardless of KRAS Status

	Avutometinib			Avutometinib + Defactinib		
	KRAS mt (n=15)	KRAS wt (n=15)	Total (n=30)	KRAS mt (n=15)	KRAS wt (n=14)	Total (n=29)
Confirmed ORR, n (%)	2 (13)	1 (6)	3 (10) 95% CI (2%, 24%)	9 (60)	4 (29)	13 (45)
CR, n (%)	1 (7)	0	1 (3)	0	0	0
PR, n (%)	1 (7)	1 (6)	2 (7)	9** (60)	4 (29)	13 (45)
SD, n (%)	12 (80)	13 (81)	25 (83)	6 (40)	7 (50)	13 (45)
Disease control rate***, n (%)	14 (93)	14 (88)	28 (93)	15 (100)	11 (79)	26 (90)
PD, n (%)	1 (7)	2 (13)	3 (10)	0	3 (21)	3 (10)
Confirmed + unconfirmed ORR, n (%)	2 (13)	1 (6)	3 (10)	11 (73)	4 (29)	15 (52)

* Evaluable for Efficacy: At least one blinded imaging assessment in 31 of 33 and 29 of 31 patients enrolled in respective treatment arms

** Includes patient deepened to CR at last assessment; CR not yet confirmed

*** Disease control rate (SD + PR + CR) at 8 weeks.

BICR, blinded independent central review; mt, mutant; ORR, objective response rate; PD, progressive disease; PR, partial response; SD, stable disease; w, weeks

Go Forward Regimen: Combination of Avutometinib and D High Disease Control Rate + Tumor Reduction in Recurrent LGSOC

Part A (Evaluable for Efficacy *)

Confirmed ORR: **45%**

Confirmed/Unconfirmed ORR: **52%**

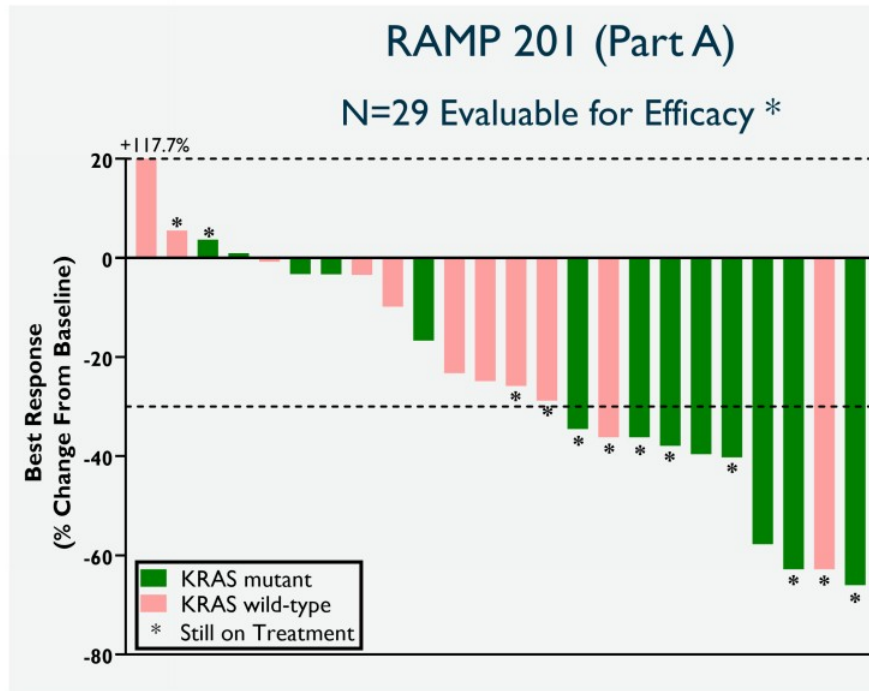
Disease Control Rate (SD+PR): **90%**

Patients still on study treatment: 45%

Minimum follow-up: 12 months

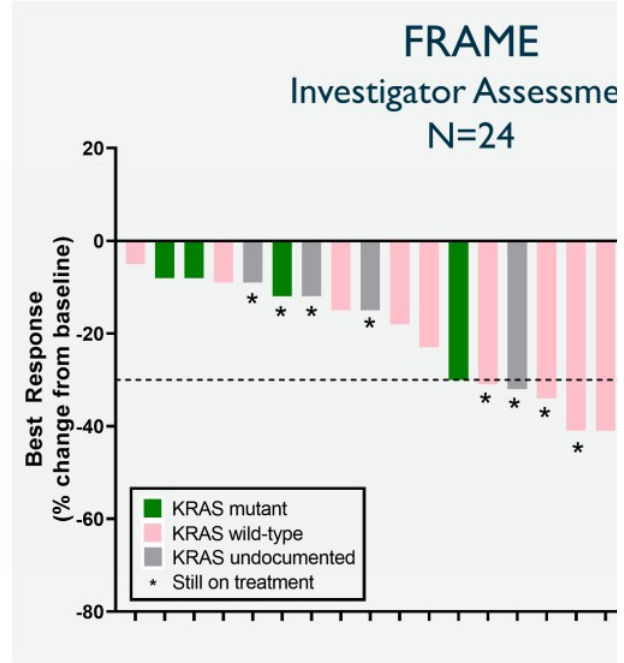
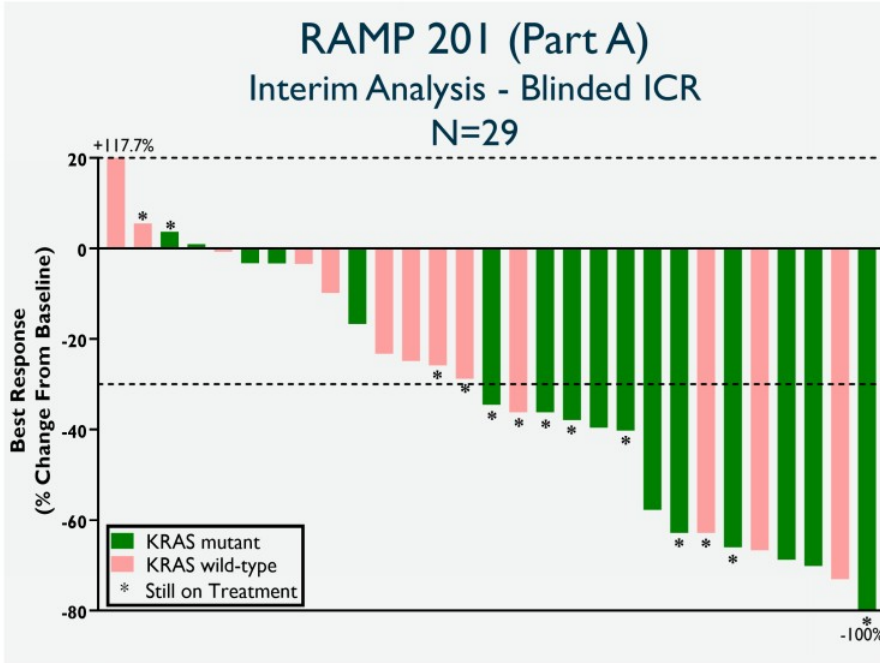


* Evaluable for Efficacy: At least one blinded imaging assessment



Go Forward Regimen: Combination of Avutometinib and Defactinib

Initial Data from RAMP 201 Trial Reinforce Findings from FRAME Trial



RAMP 201: Safety and Tolerability Profile of Avutometinib + Defactinib

No New Safety Signals; Few Discontinuations Due to Adverse Events

Most Common Treatment-Related Adverse Events (>20%) in All Treated Patients

- Majority of adverse events are mild to moderate and manageable/reversible¹
- Few discontinuations due to adverse events (12.3% in combo due to \geq I TEAE 4.9% due to elevated blood CPK*)
 - * No association to date with clinically significant toxicities, including rhabdomyolysis

Avutometinib + Defactinib (n=81)		
	Any Grade	G
Nausea, n (%)	50 (61.7)	
Diarrhea, n (%)	40 (49.4)	
Blood CPK increased, n (%)	39 (48.1)	
Oedema peripheral, n (%)	34 (42.0)	
Vomiting, n (%)	30 (37.0)	
Vision blurred, n (%)	29 (35.8)	
Dermatitis acneiform, n (%)	28 (34.6)	
Fatigue, n (%)	27 (33.3)	
Rash, n (%)	25 (30.9)	
Dry skin, n (%)	18 (22.2)	
Anemia, n (%)	14 (17.3)	



Reference: Banerjee et al., ASCO June 2023;
¹ J Clin Oncol 41, 2023 (suppl 16; abstr 5515)

Plan to File for Accelerated Approval based on Completed RAMP 201 and FRAME Study Results

Update

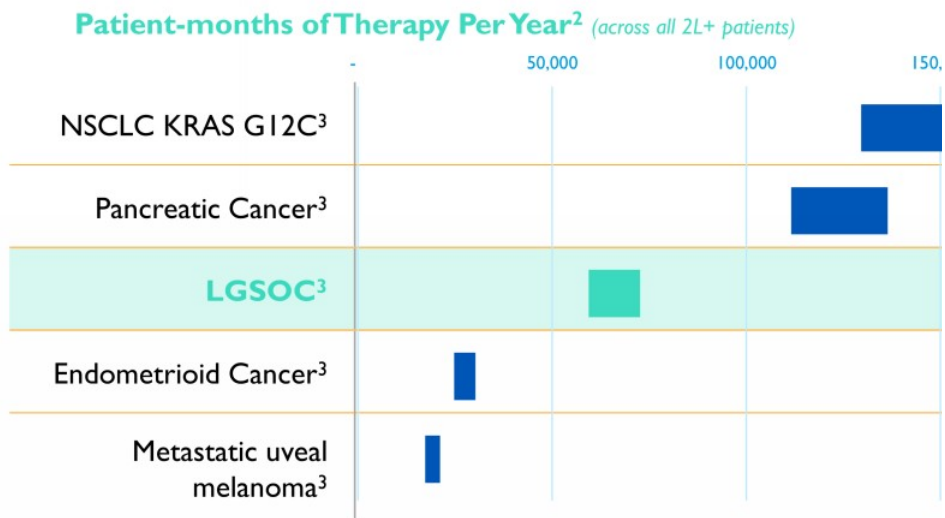
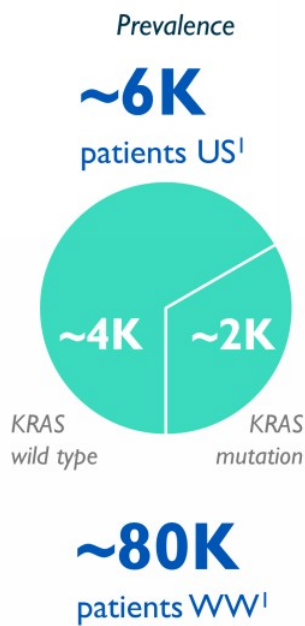
- Combination of avutometinib with defactinib selected as go forward treatment regimen
- Combination development continues in all recurrent LGSOC, regardless of KRAS status
- Encouraging efficacy results include independently confirmed responses
- No new safety signals; few discontinuations due to adverse events



Next Steps

- Target enrollment for primary analysis combination has been achieved
- Plan to file for accelerated approval based on totality of the data from the RAMP 201 and FRAME studies
- Continued enrollment in RAMP 201 (only) is planned to expand clinical experience in anticipation of initiation of a confirmatory study
- The Company will provide an update with the FDA on the confirmatory study
- The Company is planning a RAMP 2023 at ASCO 2023

RAMP 201 Part A Interim Data Support Meaningful Market Potential for Recurrent LGSOC Regardless of KRAS Status with Long Duration of Therapy



¹ References: Monk, Randall, Grisham, The Evolving Landscape of Chemotherapy in Newly Diagnosed Advanced Epithelial Ovarian Cancer, Am Soc Clin Oncol 2019; Slomovitz, Gourley, Carey, Malpica, Shih, Huntsman, Fader., Grisham et al, Low-Grade serous ovarian cancer: State of the Science; Gynecol Oncol; 2019; Lyster, Low-Grade Serous Ovarian Cancer: Current Treatment Paradigms and Future Directions; Curr Treat Options Oncology; 2018; Globocan 2020

² Patient-months of Therapy metric calculated by multiplying relevant incidence/prevalence rate times estimated duration of therapy; represents US market patient population estimates from Globocan 2020, American Cancer Society 2021, AACR Genie Cohort V9.0 public, and scientific publications. Duration of estimates from clinical studies and clinician experience. Patient-months on therapy is for 2nd-line+ patients

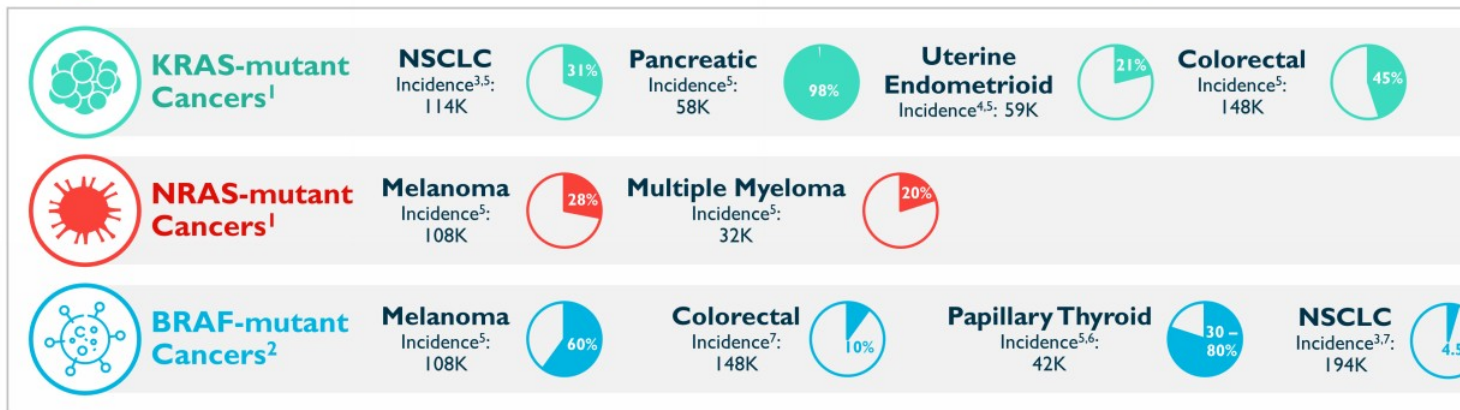
³ NSCLC KRAS G12C 2nd line patients (incidence); Pancreatic RAS/RAF mutant 2nd-line patients (incidence); LGSOC KRAS mutant and wild-type patients (prevalence); Endometrioid RAS/RAF mutant 2nd-line patients (incidence); Uveal melanoma RAS/RAF mutant 2nd-line patients (incidence)





RAS Pathway-Driven Cancers and Rational Avutometinib Combinations

High Unmet Needs in Additional RAS/MAPK Pathway-Driven Cancers



Breadth of potential opportunity

- 30% of all human cancers are driven by mutations of the RAS family of genes⁶

Established prognostic significance

- Patients with mutations of the RAS family have an overall worse prognosis

Challenges with conventional approaches

- Modest progress; limited number of approved therapies
- Single agent therapies (e.g., MEK inhibitors) associated with resistance
- Tolerable combination regimens with MEK inhibitors have been challenging
- Approved RAS inhibitors address only a minority of all RAS mutated cancers

Incidence References:

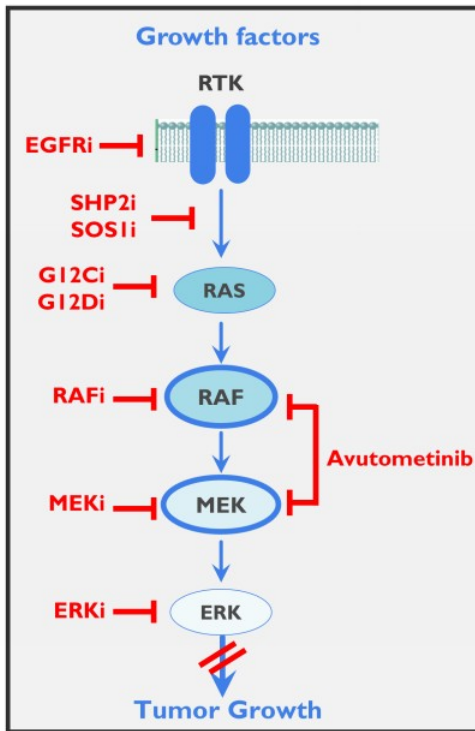
¹Reference for RAS mt frequencies – Cox et al. *Nature Reviews* 13: 828, 2014; ²Reference for BRAF mt frequencies – Turski et al. *Mol Cancer Ther* 15: 5
³50% of NSCLC is adenocarcinoma (Pakkala and Ramalingam *JCI Insight* 2018); ⁴90% of all uterine cancers are of the endometrial type (ACS); ⁵Cancer
 Siegel et. al. *CA Cancer J Clin* 2020;70:7-30; ⁶8 out of 10 thyroid cancers are of the papillary type (ACS)⁷CbioPortal

References:

McCormick F *Clin Cancer Res* 15April2015; ⁸Adderley H et al. *EBioMedicine* 01Mar2019; Papke B et al. *Science* 17Mar2017; Ryan M et al. *Nature Review
 Oncology* 01Oct2018; NIH cancer.gov/research/key-initiatives/ras



Vertical Blockade: Establishing Avutometinib as the Backbone of Therapeutic RAS/MAPK Pathway-Driven Tumors



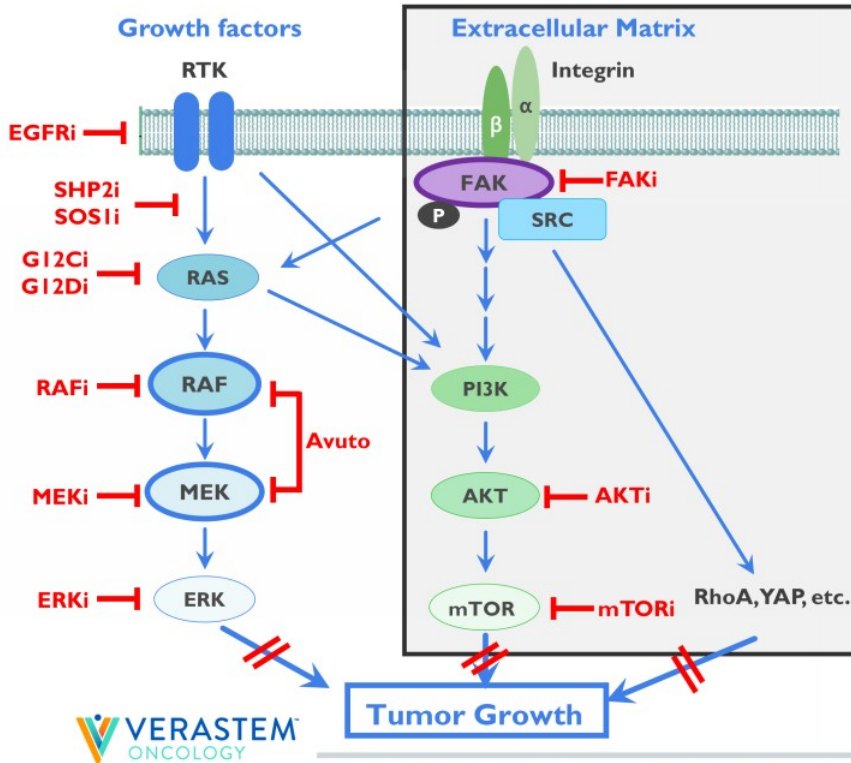
Current Challenges

- Blocking any single target in the pathway is insufficient for maximum duration of anti-tumor efficacy
 - e.g. SHP2i, KRAS-G12Ci, KRAS-G12Di, RAFi, MEKi, ERKi
- Vertical blockade concept is now well established
 - Necessary to block more than 1 target in the pathway
- Many of these agents (e.g. SHP2i, MEKi) have poor tolerability and in combination

Solutions offered by Avutometinib

- Vertical blockade (RAF and MEK blockade) in a single drug
- Potential best-in-class tolerability with recommended twice weekly regimen
 - Should enable tolerable combinations
- Compelling synergy data (preclinical) for avutometinib combination with KRAS G12C inhibitors supporting clinical combinations
- Ongoing clinical combination studies with G12Ci (sotorasib, ad EGFR (cetuximab))

Parallel Pathway Inhibition: Establishing Avutometinib as the Backbone Therapy for RAS/MAPK Pathway-Driven Tumors



Current Challenges

- Blocking RAS pathway can be circumvented by parallel pathways
 - e.g. PI3K/AKT/mTOR, FAK, RhoA
- Combinations of MEKi + AKTi have shown limited tolerability

Solutions offered with Avutometinib

- Promising tolerability and early clinical data with twice weekly avutometinib opens up new dosing options for combinations
- Compelling preclinical synergy data with avutometinib in combination with several other cancer agents (e.g. FAKi, mTORi)
- RP2D established for avutometinib + mTORi (defactinib) and for avutometinib + mTORi (everolimus) with twice weekly regimen

References: ¹ Chen, *Mol Cancer Res* 2018; ² Banerji, *BTOG* Dublin, Jan 23, 2019

Preclinical Synergy of Avutometinib in Combination with Promising, for Clinical Investigation

Vertical RAS/MAPK Pathway Inhibition

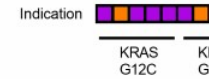
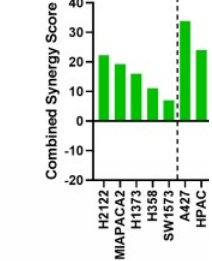
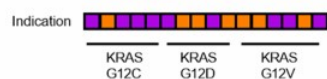
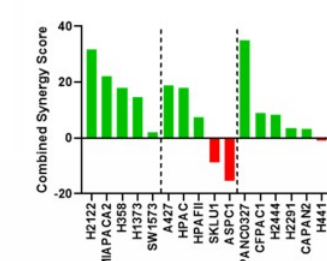
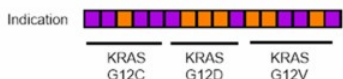
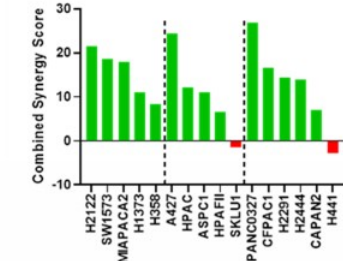
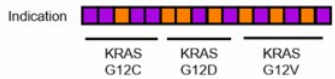
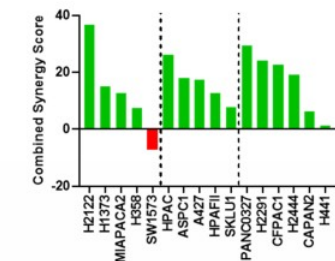
Parallel Pathw

Avutometinib + pan-HERi (afatinib)

Avutometinib + SHP2i (RMC-4550)

Avutometinib + SOS1i (BI-3406)

Avutometinib + CI

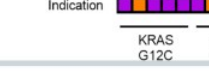
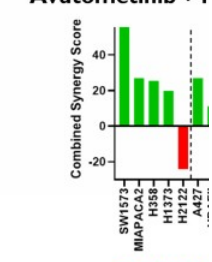
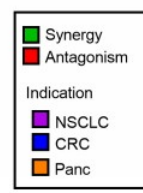
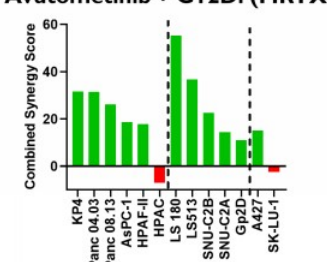
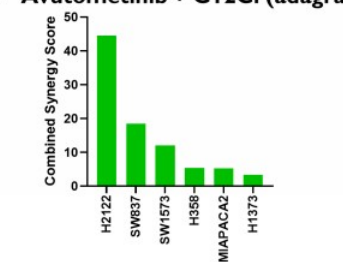
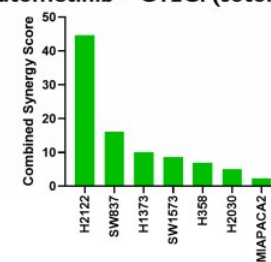


Avutometinib + G12Ci (sotorasib)

Avutometinib + G12Ci (adagrasib)

Avutometinib + G12Di (MRTX1133)

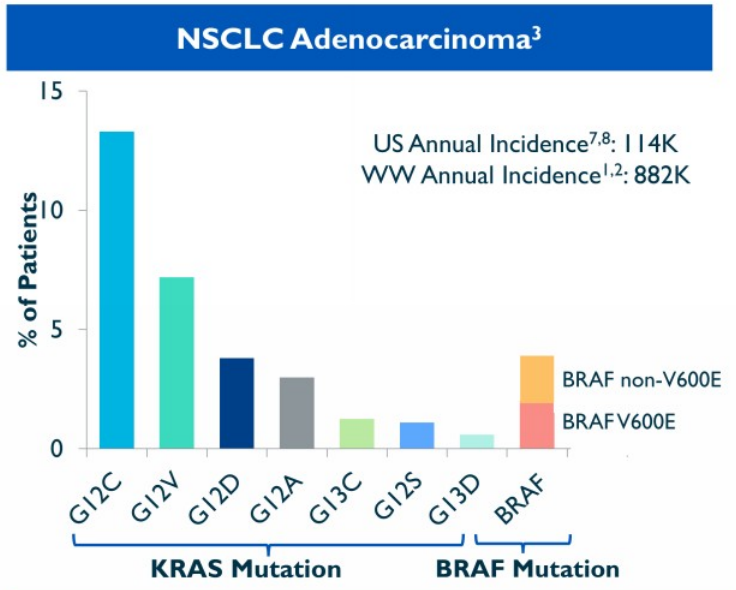
Avutometinib + r





Avutometinib Combinations in Non-Small Cell Lung Cancer

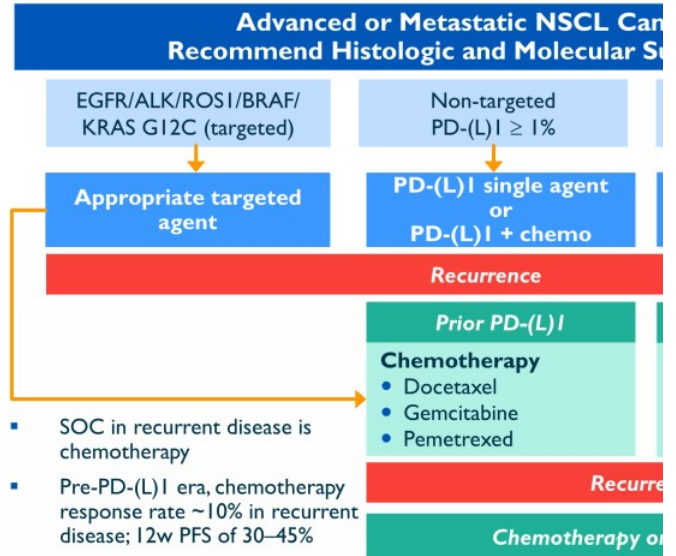
High Unmet Need in Refractory KRAS & BRAF mt NSCLC Adenoc



KRAS Mutations Represent 25% of Lung Cancer Adenocarcinoma & BRAF Mutations Represent ~4% (EGFR 17%, ALK 7%)^{4,6}

References:

- ¹ Globocan, 2020
- ² <https://www.ncbi.nlm.nih.gov/books/NBK519578/>
- ³ TCGA PanCancer Atlas (cBioPortal analysis)
- ⁴ www.thelancet.com Vol 389 January 21, 2017
- ⁵ Adapted from NCCN Non-small cell lung cancer guidelines Version 3.2020
- ⁶ Clinical Cancer Research DOI 10.1158/1078-0432.CCR-18-2062
- ⁷ 50% of NSCLC is adenocarcinoma (Pakkala and Ramalingam JCI Insight 2018)
- ⁸ Cancer Statistics 2020, Siegel et. al. *CA Cancer J Clin* 2020;70:7-30



Verastem Clinical Trials:

- RAMP 203: Avutometinib + sotorasib in KRAS G12C NSCLC
- RAMP 204: Avutometinib + adagrasib in KRAS G12C NSCLC
- RAMP 202: Avutometinib + defactinib in BRAFV600E NSCLC

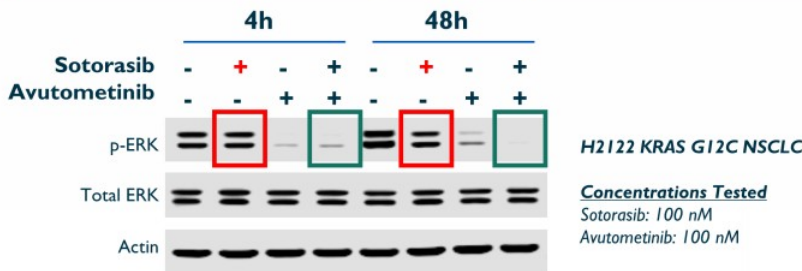
Preclinical Synergy of Avutometinib + G12C Inhibitors in KRAS G12C

Synergy of avutometinib + G12C inhibitors across G12C mutant NSCLC, CRC & Pancreatic cancer cell lines

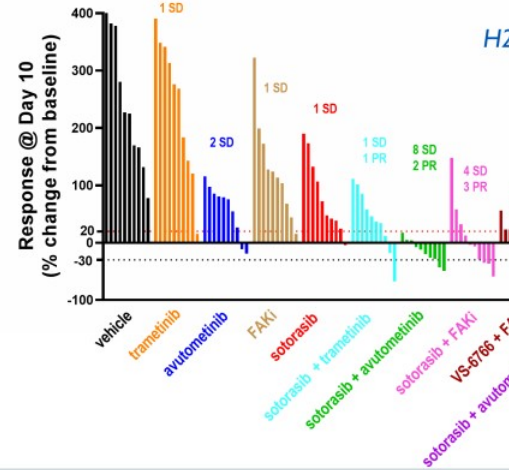
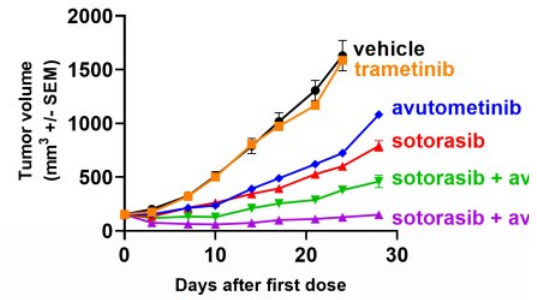
Cell line	Indication	Sensitivity to G12C inhibitors	Combined Synergy Score	
			Avutometinib + sotorasib	Avutometinib + adagrasib
H2122	NSCLC	Moderately sensitive	44.7	44.6
H1373	NSCLC	Sensitive	10.0	3.4
SW1573	NSCLC	Insensitive	8.6	12.0
H358	NSCLC	Sensitive	6.9	5.4
H2030	NSCLC	Moderately sensitive	5.1	ND
SW837	CRC	Sensitive	16.1	18.5
MIAPACA2	Panc	Sensitive	2.3	5.3

ND: not determined

Avutometinib + sotorasib yields deeper and more sustained inhibition of ERK signaling pathway



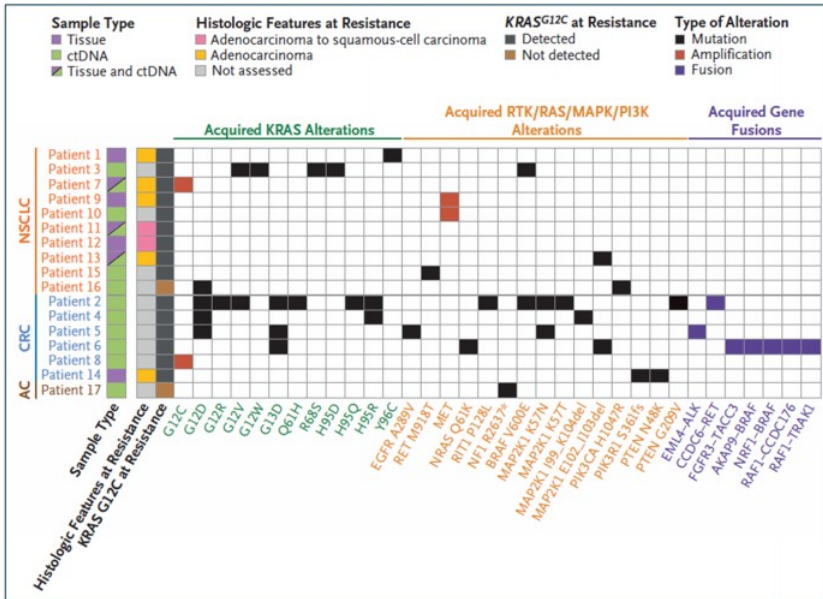
Avutometinib & FAKi potentiate sotorasib efficacy in KRAS G12C NSCLC in vivo; Tumor regression in all mice with



Reference: Coma et al., AACR 2021

Acquired Resistance Mechanisms to KRAS G12Ci Treatment in Patients with NSCLC Further Support Combination of KRAS G12Ci with Avutometinib

Summary of Putative Mechanisms of Acquired Resistance to Adagrasib Treatment



- Mechanisms of acquired resistance to KRAS G12Ci treatment in patients recently treated with adagrasib treatment in patients recently
- The main resistance alterations occurring include:
 - RTK mts or amplifications
 - KRAS mts or amplification
 - NRAS mt
 - BRAFV600E, BRAF or CRAF fus
 - MAP2K1 (MEK1) mt/deletion
- Avutometinib has shown activity against NRAS, BRAF and CRAF modifications

Cell Line	IC50 (nM)		
	Sotorasib	Adagrasib	Avutometinib
G12C	29	3	
G12D	435	382	
G12C/R68S	157	85	
G12C/H95D	11	235	
G12C/Y96C	438	216	

1 - 30 nM 30 - 150 nM 150 - 500 nM



References: ¹Awad MM et al., N Engl J Med 2021; 384: 2382-93; ²Tanaka et al., Cancer Discov 2021; |1:1-10

Reference: Andrew Aguirre, unpublished

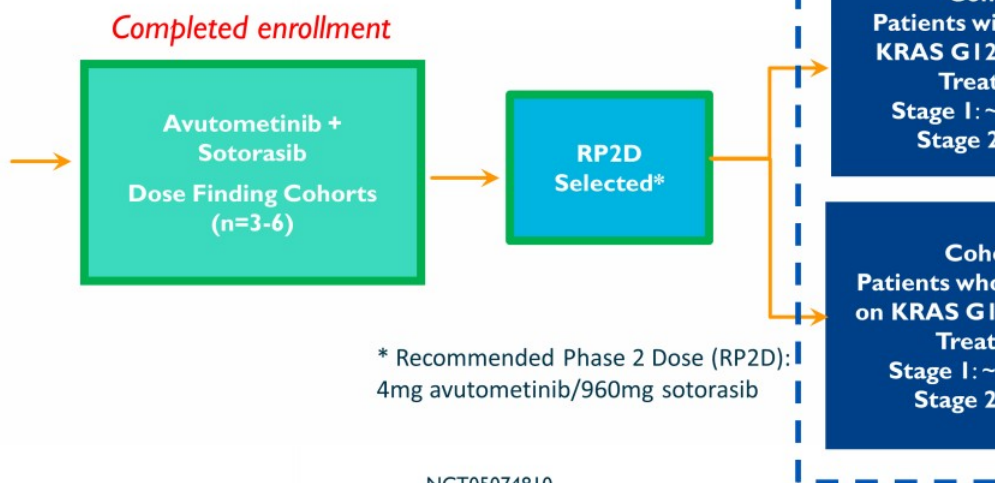
RAMP 203: Phase I/2 Trial of Avutometinib + LUMAKRAS™ (Sotor KRAS G12C Advanced NSCLC

- Patients must have a KRAS G12C mutation determined using validated test
- Treatment with at least 1 but no more than 3 prior systemic regimens, for Stage 3B-C or 4 NSCLC*
- Patient may have previously received adjuvant chemotherapy for earlier-stage disease
- Measurable disease according to RECIST 1.1
- ECOG performance status ≤ 1

*may include patients with or without prior G12C therapy

Part A: Dose Evaluation (3+3 DLT Assessment)

Part B: Dose Exp (Primary end



* Recommended Phase 2 Dose (RP2D): 4mg avutometinib/960mg sotorasib

NCT05074810

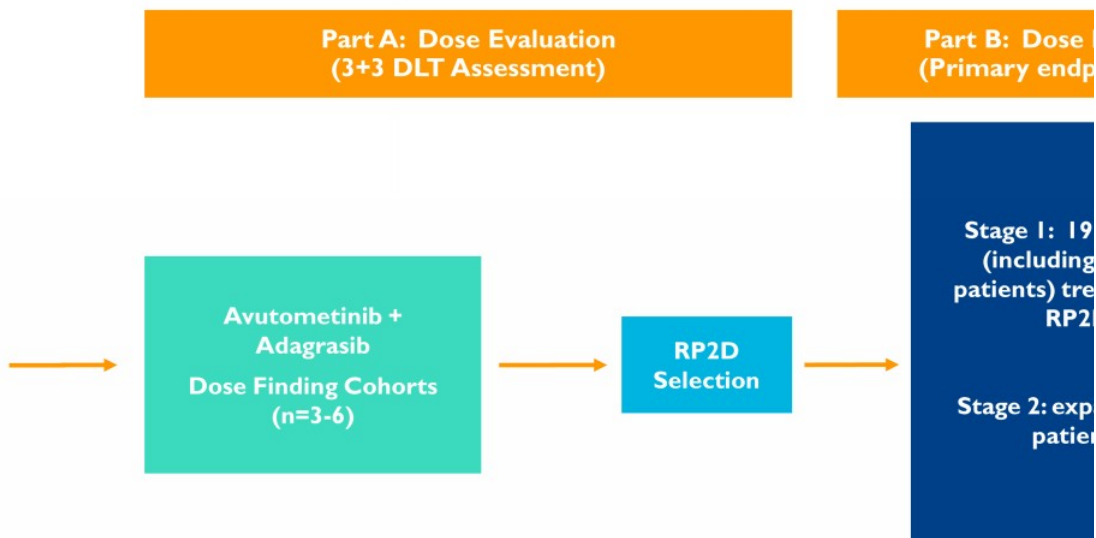
Abbreviations: DLT = dose-limiting toxicity; n = number of patients; ORR = overall response rate; RP2D = recommended phase 2 dose



Collaboration with Amgen

RAMP 204: Phase I/2 Trial of Avutometinib + KRAZATI™ (Adagrasib) KRAS G12C Advanced NSCLC

- Patients must have a KRAS G12C mutation determined using validated test
- Treatment with at least 1 but no more than 3 prior systemic regimens, for Stage 3B-C or 4 NSCLC
- Patient must have received prior therapy with a KRAS G12C inhibitor and experience progressive disease
- Measurable disease according to RECIST 1.1
- ECOG performance status ≤ 1



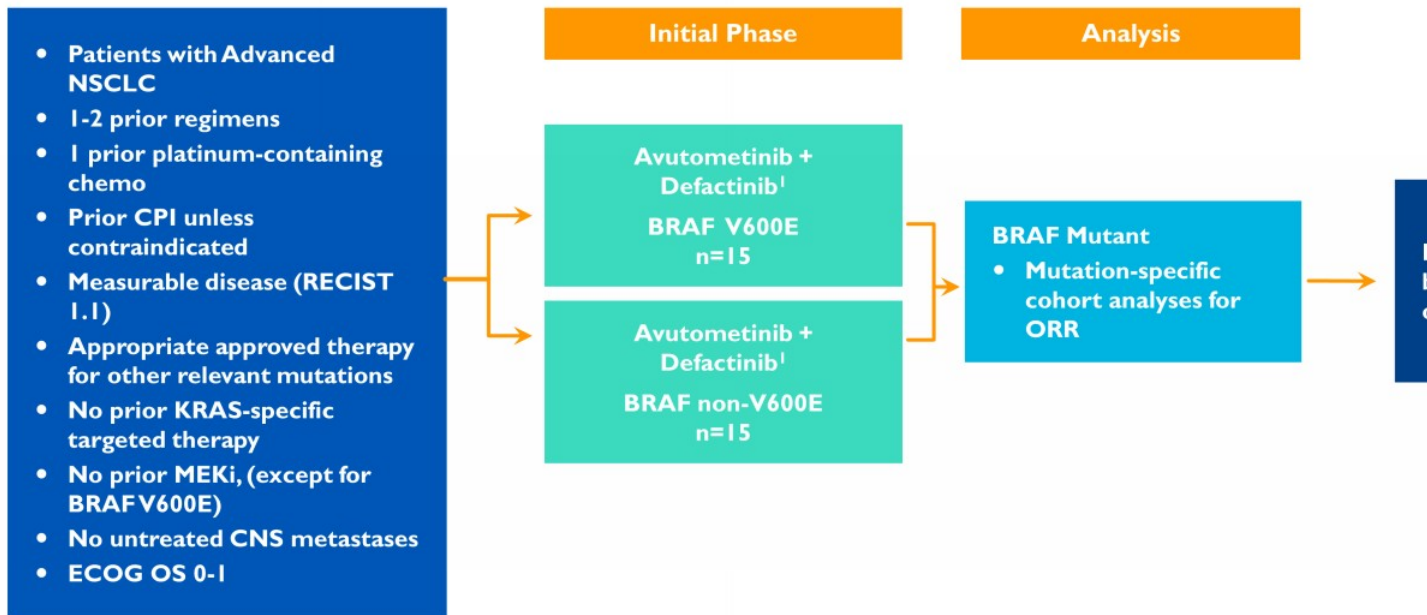
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Abbreviations: DLT = dose-limiting toxicity; n = number of patients; ORR = overall response rate; RP2D = recommended phase 2 dose



Collaboration with Mirati Therapeutics

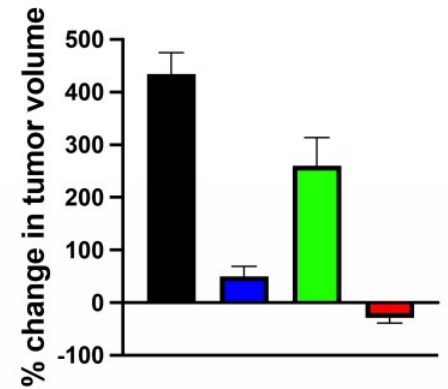
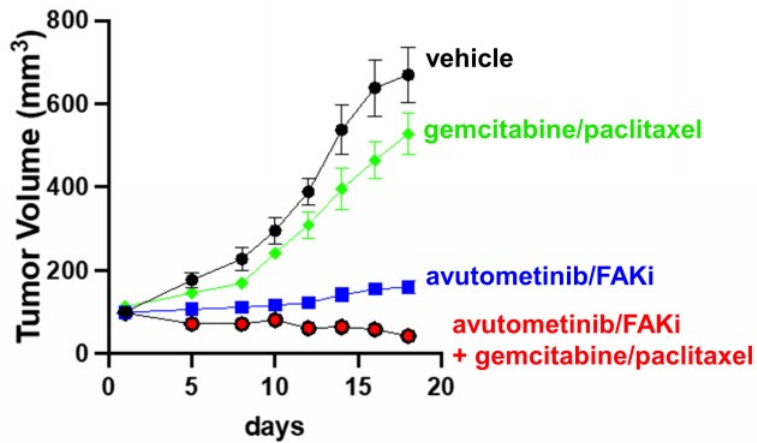
RAMP 202: Phase 2 Trial of Avutometinib + Defactinib in BRAF mt NSCLC





Additional Avutometinib Combinations for Pancreatic, Colorectal and Melanoma

Preclinical Synergy of Avutometinib/FAK Inhibition + Chemotherapy KRAS/p53 pancreatic cancer mouse model



- ✓ The combination of avutometinib + FAKi induces tumor growth inhibition and increases survival; does not induce tumor regression
- ✓ Addition of chemo (gemcitabine + paclitaxel) to avutometinib/FAKi induces tumor regression

RAMP 205: Phase I/2 Trial of Avutometinib/Defactinib + GEMZAR™ (Gemcitabine)/ABRAXANE™ (Nab-paclitaxel) in Front Line Metastatic Pancreatic Cancer

- Patients with confirmed metastatic pancreatic ductal adenocarcinoma
- Eligible for treatment in the first-line setting with standard gemcitabine and nab-paclitaxel
- Prior adjuvant or neoadjuvant chemotherapy, radiotherapy or surgery is permitted if the last intervention/ dose was ≥ 12 months prior to the diagnosis of metastatic disease
- Measurable disease according to RECIST 1.1
- ECOG performance status ≤ 1

Part A: Dose Evaluation (3+3 DLT Assessment)

Avutometinib +
Defactinib +
Gemcitabine +
Nab-paclitaxel

Dose Finding Cohorts
(n=3-6)

RP2D
Selection

Part B: Dose Expansion (Primary endpoint)

Patients with
KRAS G
KRAS G
KRAS G
Other

Treated with

Stage 1: 17
If ≥ 4 response

Stage 2: expansion

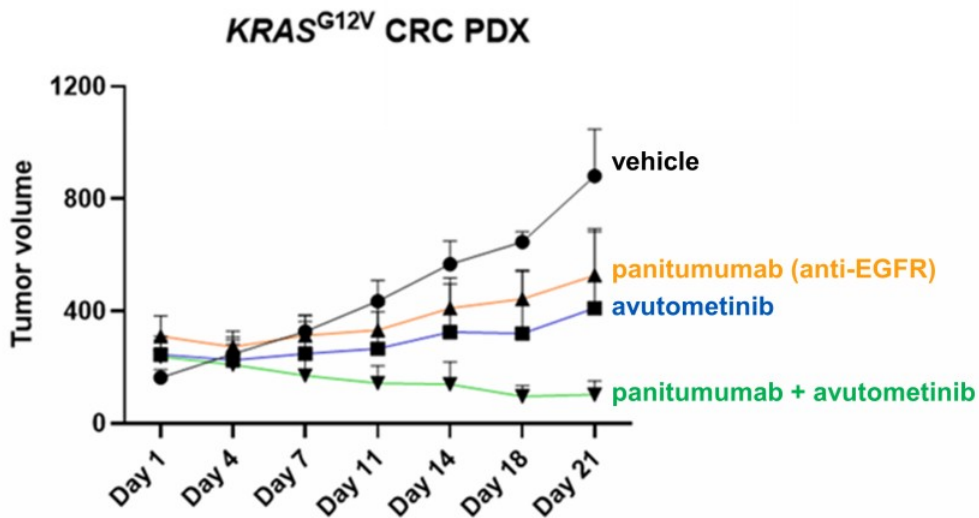
NCT05669482

Abbreviations: DLT = dose-limiting toxicity; n = number of patients;
ORR = overall response rate; RP2D = recommended phase 2 dose



Collaboration with PanCAN

Combination of Avutometinib with anti-EGFR mAb Induces Tumor Regression in a KRAS mt Colorectal PDX Model

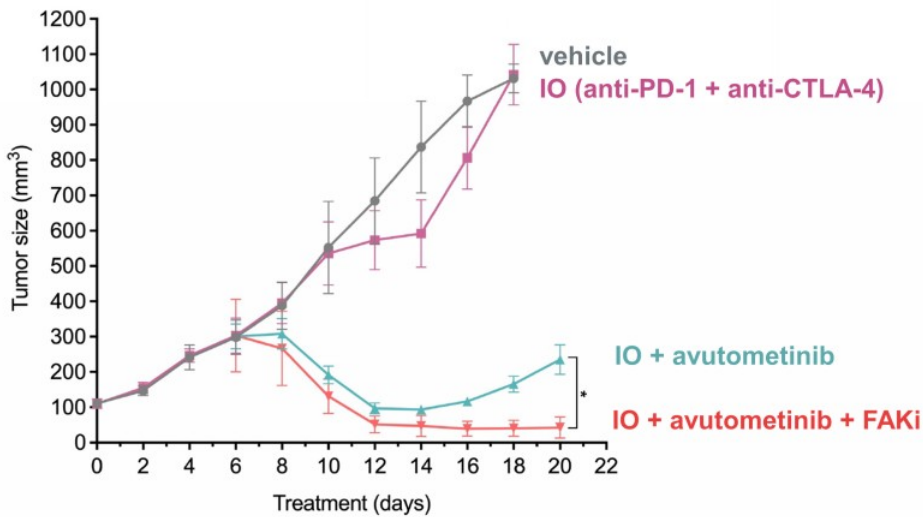


- Avutometinib + anti-EGFR (pa induces tumor regression in a CRC patient-derived xenograf
- G12Ci + anti-EGFR (sotorasib panitumumab and adagrasib + have shown partial responses i CRC (Fakih et al. ESMO 2021; ESMO 2021)
- **These data support the on clinical evaluation of avuto cetuximab (anti-EGFR) for of KRAS mt CRC (NCT05**

Collaboration with Marwan Fakih, City of Hope

Pachter, RAS Development Summit, 2021

Combination of Avutometinib + FAK Inhibition with Checkpoint Inhibition Induces Tumor Regression in an IO-resistant BRAF V600E melanoma



- Avutometinib + IO (anti-PD-1 + anti-CTLA-4) induces tumor regression in an IO-resistant syngeneic BRAF V600E melanoma (YUMM 1.7)
- FAK inhibition deepens and sustains avutometinib-induced tumor regression
- **These data support the immediate evaluation of avutometinib + pembrolizumab (anti-PD-1) + ipilimumab (anti-CTLA-4) + FAKi in the treatment of BRAF V600E melanoma**

Avutometinib Development in Multiple Combinations Across RAS P Driven Tumors with Potential Early Read-Outs in 2H 2023

Indication	Study
KRAS G12C NSCLC	RAMP 203: Avutometinib/Sotorasib combo
KRAS G12C NSCLC	RAMP 204: Avutometinib/Adagrasib combo
Pancreatic	RAMP 205: Avutometinib/Gem/Abraxane/Defactinib c
KRAS mt NSCLC	Avutometinib/Everolimus combo*
KRAS mt CRC	Avutometinib/Cetuximab combo*
ER+ Breast	Avutometinib/Abemaciclib/fulvestrant combo*
RAS/RAF/NFI Gynecological	Avutometinib/Defactinib combo*
BRAFV600E Melanoma	Avutometinib/Pembrolizumab combo*

*Investigator Sponsored Trials



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- Founding Member – Proventus Health Solutions



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President and Chief Operating Officer

- CEO – The DNA Repair Co. (now On-Q-ity)
- PharMetrics (now IMS), Axion



Cathy C
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- Ironwood, Tufts Health



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Chief Scientific Officer

- Head of Cancer Biology – OSI (now Astellas)
- Schering-Plough



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- CMO, Asana BioSciences
- Boehringer-Ingelheim, Pfizer



Hagop Y
MSc, M.D.
Head of Medical Affairs

- CMO, BINC Progenics,
- CMO & EV SVP, Imclone

THANK YOU
