



Allarity:

- **Unique PARP/Tankyrase inhibitor**
- **DRP[®] : Gene Expression Based Biomarker For Predicting Response To Cancer Therapy**

Thomas Jensen, CEO
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NASDAQ: ALLR

Nasdaq: ALLR



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Our DRP[®] Companion Diagnostics Platform

The DRP[®] Platform Addresses the Complexity of Cancer

Cancer is Very Complex

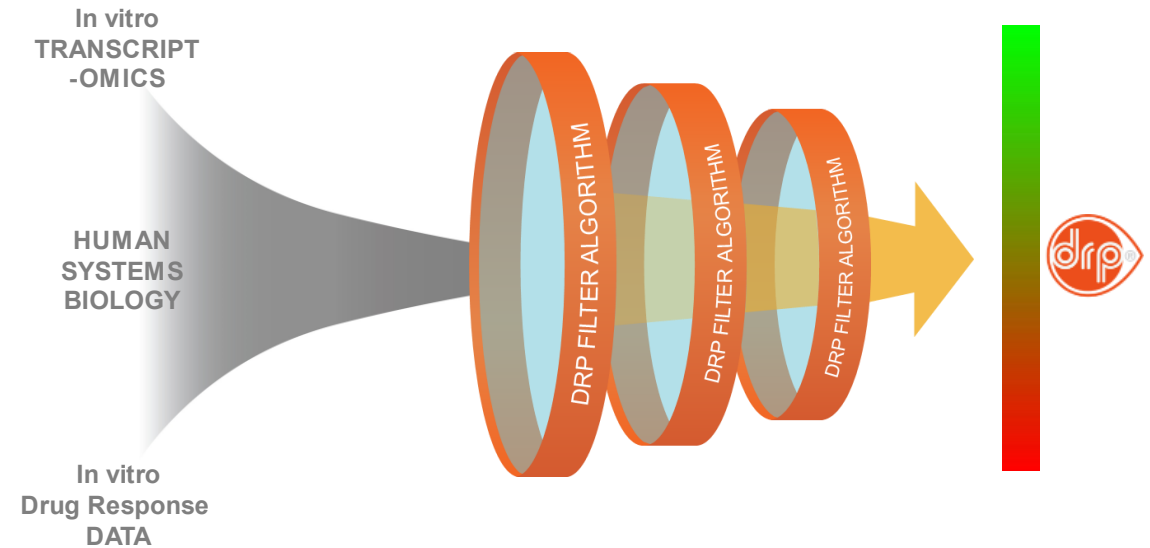
“Systems biology” is used to **analyze all genes** (~25,000) expressed in a cancer cell/tumor, without bias towards current knowledge of relevant drug targets or pathways.



Graph of all 680 non-redundant proteins

The Tumor Tells us What is Important

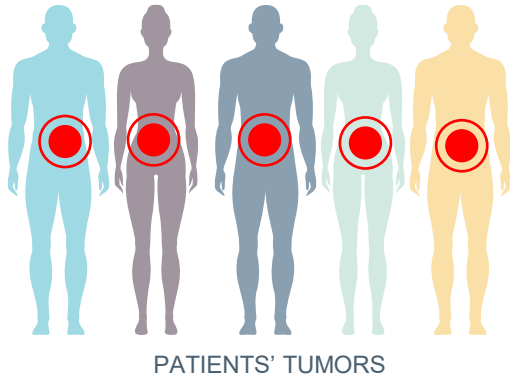
Input is generated by taking drug testing data from cancer cell lines. Our **DRP[®] engine** then **applies the system biology analysis** as a “filter” of human tumor biopsy data, to yield a 50 to 400 gene DRP[®] signature for that specific drug.



DRP[®] CDx: Predicting a Cancer Patient's Drug Response

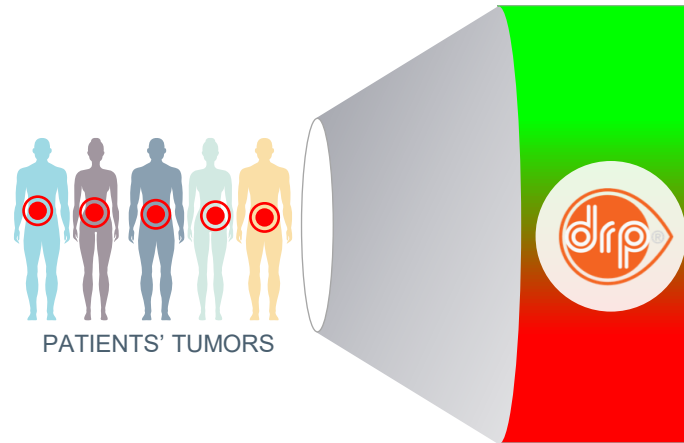
Step 1

Patients' biopsy samples



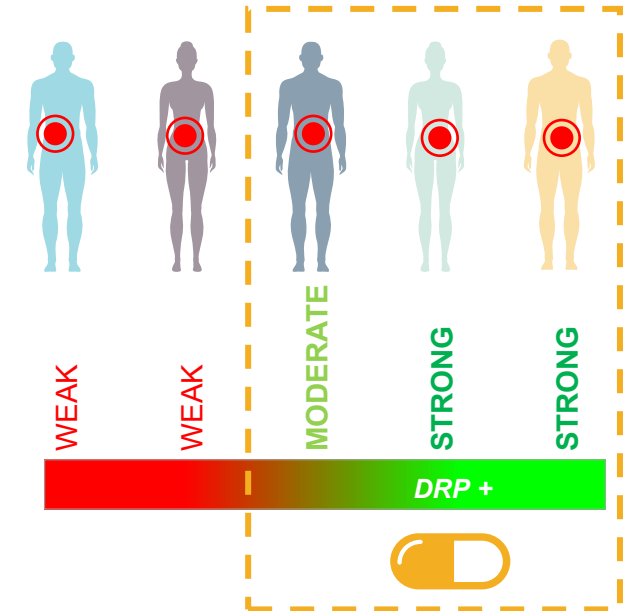
Step 2

Compare patients' tumor gene expression to DRP[®] signature

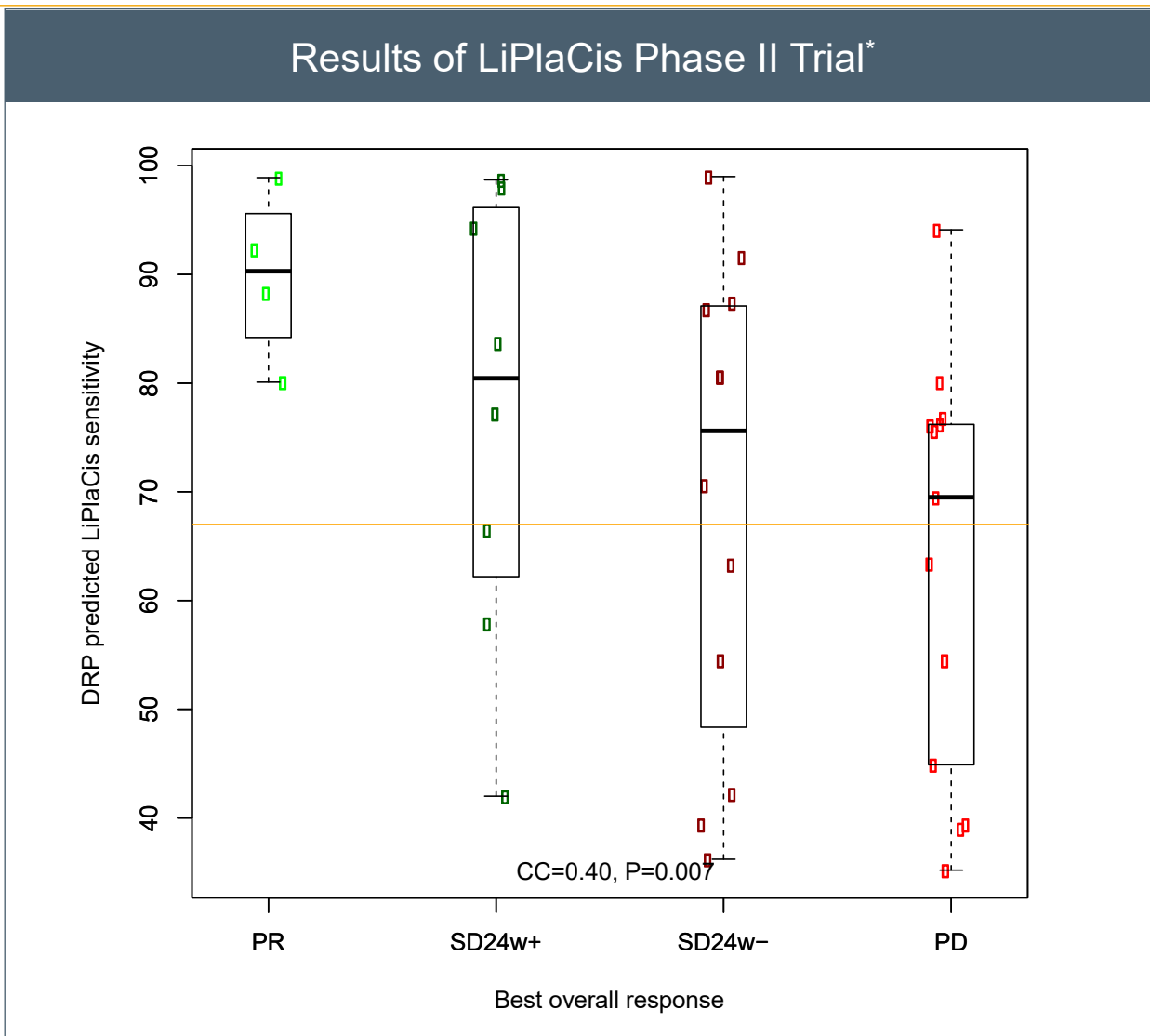


Step 3

Identify patients with high DRP[®] score for a given drug



LiPlaCis: Prospective enrollment based on DRP identifies patients with greatest clinical benefit



Allarity's LiPlaCis DRP[®] was used to screen patients for inclusion into trial based on *diagnostic* biopsy.

Metastatic Breast Cancer patients with a DRP score above 33 were treated with LiPlaCis (N=37).

All responders had a DRP score >80 (ORR was 25% above this cutoff, 0% below)

The mean DRP score for SD>24w was 80.

* Nielsen et al: Predictive biomarker for cisplatin in prospective phase 2 of liposomal cisplatin in metastatic breast cancer . ASCO 2023 abstract 3130

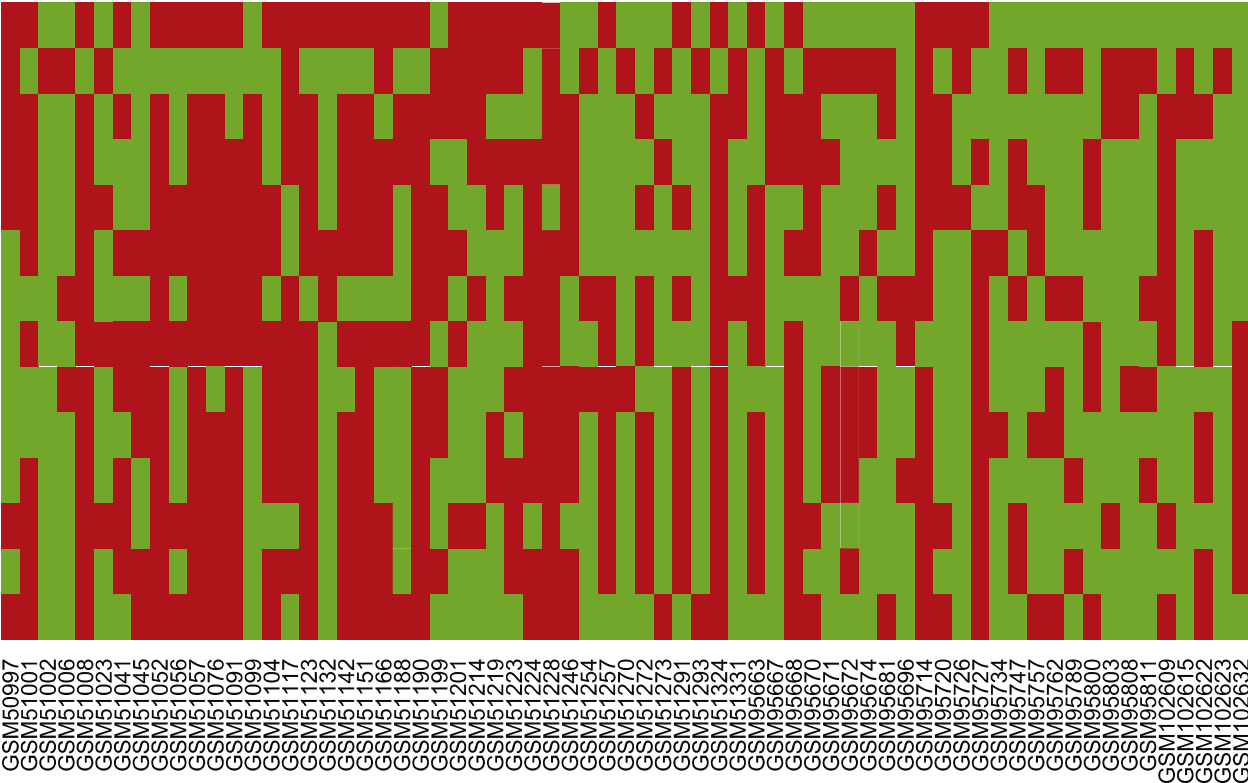
Personal Response Prediction: which drug will work best for a tumor?



High Risk Myeloma patients are generally difficult to treat. There is limited guidance on which treatment will work.

A.J. Vangsted et al.

Gene 644 (2018) 80–86



- lenalidomide
- ibrutinib
- trametinib
- venetoclax
- panobinostat
- carfilzomib
- veliparib
- vincristine
- cisplatin
- doxorubicin
- etoposide
- cyclophosphamide
- melphalan
- bortezomib

67 High risk myeloma patients.
DRP predictions for 14 drugs

green=predicted sensitive
red=predicted resistant



Publications of Clinical/Method Validation for Drug-Specific DRP[®]'s

1. Chen J, et al. **A 71-gene signature of TRAIL sensitivity in cancer cells.** (October 25, 2011); *Mol Cancer Ther*, 10.1158/1535-7163.
2. Wang W, et al. **Independent validation of a model using cell line chemosensitivity to predict response to therapy.** *J Natl Cancer Inst.* 2013 Sep 4;105(17):1284-91
3. Knudsen S, et al. **Development and validation of a gene expression score that predicts response to fulvestrant in breast cancer patients.** *PLoS One.* 2014 Feb 5;9(2):e87415
4. Knudsen S, et al. **Development and blind clinical validation of a microRNA based predictor of response to treatment with R-CHO(E)P in DLBCL.** *PLoS One.* 2015 Feb 18;10(2):e0115538
5. Buhl IK, et al. **Cell Line Derived 5-FU and Irinotecan Drug-Sensitivity Profiles Evaluated in Adjuvant Colon Cancer Trial Data.** *PLoS One.* 2016; 11(5): e0155123.
6. Winther M, et al. **Clinical Impact of a Novel MicroRNA Chemo-Sensitivity Predictor in Gastroesophageal Cancer.** *PLoS One.* 2016; 11(2): e0148070.
7. R cker FG, et al. **Molecular dissection of valproic acid effects in acute myeloid leukemia identifies predictive networks.** *Epigenetics.* 2016 Jul 2;11(7):517-25.
8. Prahm KP, et al. **Clinical validation of chemotherapy predictors developed on global microRNA expression in the NCI60 cell line panel tested in ovarian cancer.** *PLoS ONE* 12(3): e0174300.
9. Bohl SR, et al. **Gene expression analysis of decitabine treated AML: high impact of tumor suppressor gene expression changes.** *Leukemia & Lymphoma* Vol. 58 , Iss. 9, 2264-2267 (2017).
10. Vangsted AJ, et al. **Drug response prediction in high-risk multiple myeloma.** *Gene* 644 80-86 (2018).
11. Buhl IK, et al. **Molecular prediction of adjuvant cisplatin efficacy in Non-Small Cell Lung Cancer (NSCLC)—Validation in two independent cohorts.** *PLoS ONE* 13(3): e0194609 (2018).
12. Buhl ASK, et al. **Predicting efficacy of epirubicin by a multigene assay in advanced breast cancer within a Danish Breast Cancer Cooperative Group (DBCG) cohort: a retrospective-prospective blinded study.** *Breast Cancer Res Treat.* 2018 Aug 11.
13. Christensen TD, et al. **Prediction of fulvestrant efficacy in patients with advanced breast cancer: retrospective-prospective evaluation of the predictive potential of a multigene expression assay.** *Breast Cancer.* 2019 Oct 25. doi: 10.1007/s12282-019-01017-7 (2019).
14. Plummer R, et al. **First-in-human study of the PARP/tankyrase inhibitor E7449 in patients with advanced solid tumours and evaluation of a novel drug-response predictor.** *Br J Cancer* (2020) 123(4):525-533. <https://doi.org/10.1038/s41416-020-0916-5>
15. Knudsen S, et al. **A novel drug specific mRNA biomarker predictor for selection of patients responding to dovitinib treatment of advanced renal cell carcinoma and other solid tumors.** *PLOS ONE.* 18(8): e0290681 <https://doi.org/10.1371/journal.pone.0290681> (2023)

Revitalizing Former Big Pharma Therapeutics with Our DRP[®] CDx

Classical Drug Development

Treat all of the patients



Low Average Patient Benefit



Companion Diagnostics

Allarity Approach

Treat only patients sensitive to therapy



High Average Patient Benefit

Lead Program

		PHASE 1/1b	PHASE 2	PHASE 3	INDICATION	RIGHTS	
Stenoparib	PARP & tankyrase inhibitor	▶				Advanced Ovarian Cancer	Global

Stenoparib has a unique therapeutic mechanism of action. Patients may be enriched for benefit from stenoparib therapy using the stenoparib-DRP





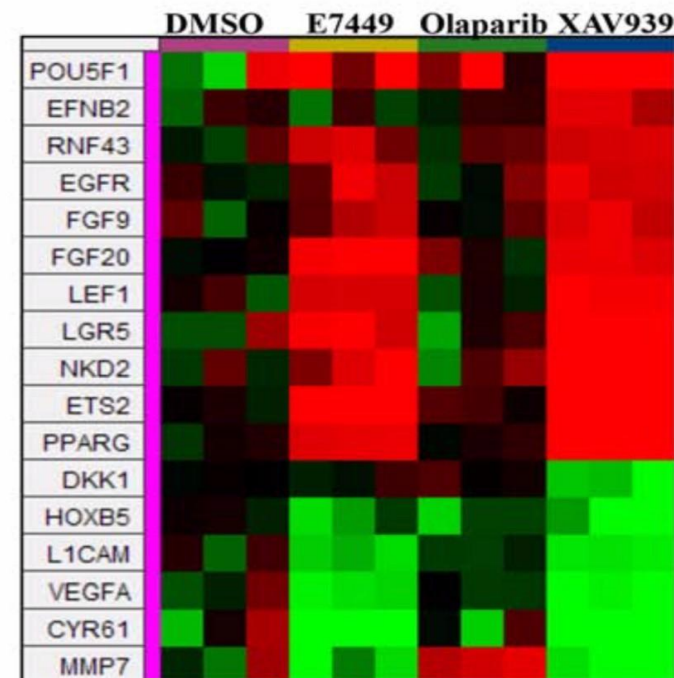
Ongoing Phase 2 Prospective trial: Stenoparib

Stenoparib: A Unique Dual PARP and Tankyrase Inhibitor

Ongoing Phase 2 Monotherapy Study in 3rd Line Ovarian Cancer (OC) All patients screened with Stenoparib DRP to identify patients for inclusion

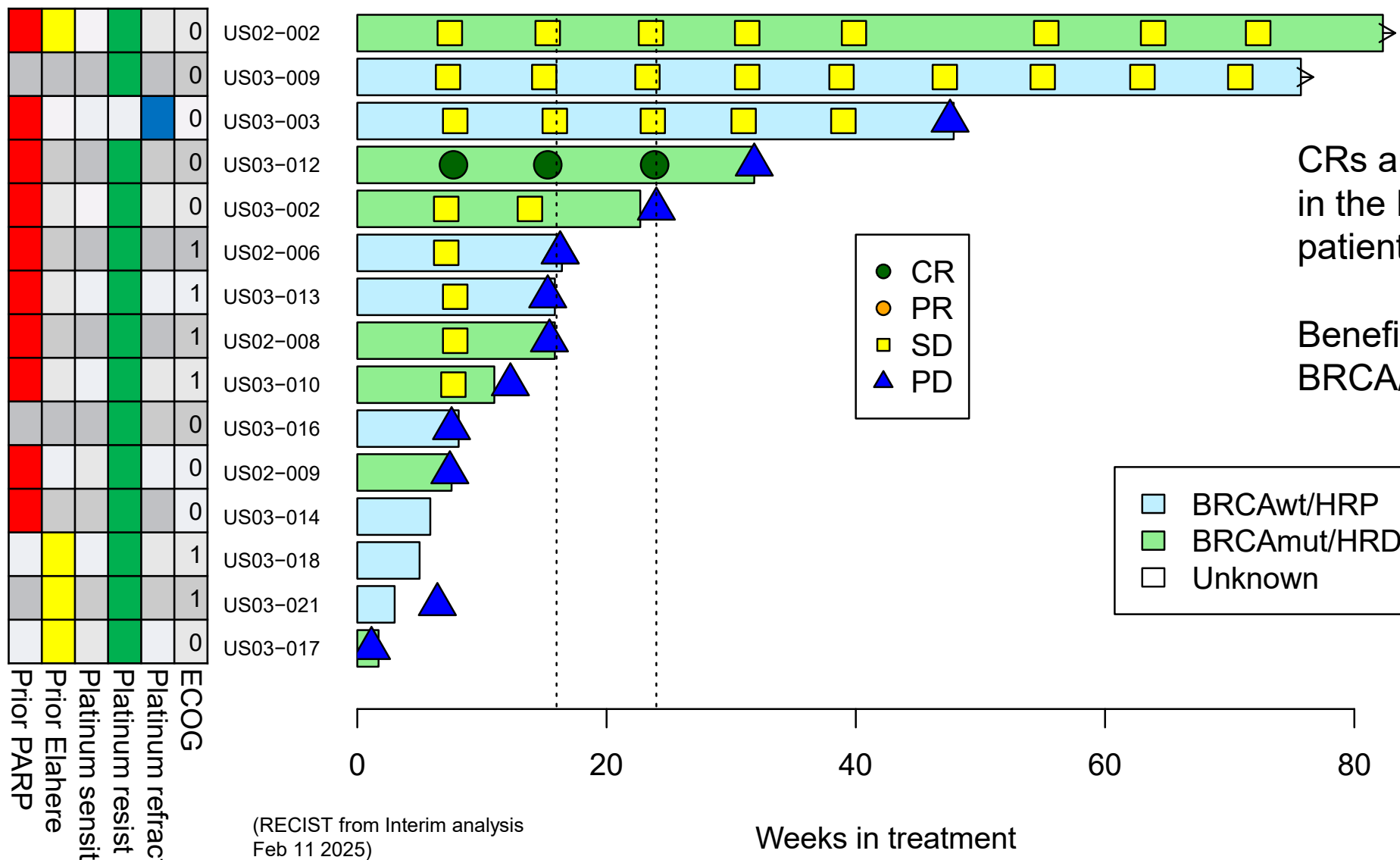
- First-in-class small molecule targeted inhibitor of DNA damage repair enzymes (**PARP**) with **dual Tankyrase inhibitor activity**:
 - Tankyrases are involved in **telomere maintenance** during tumor cell division and are active in the **Wnt signaling pathway** in tumor cells.
 - Dual inhibition of PARP & Tankyrase potentially yields **improved anti-tumor activity**, including in tumors that develop PARPi resistance.
- Stenoparib has shown **promising monotherapy activity against OC and pancreatic cancer** in prior Phase 1 clinical trial.
 - **Stenoparib-DRP[®]** companion diagnostic showed ability to identify patients that benefited in Phase I study.
- Global rights, exclusively in-licensed from **Eisai**. GMP drug manufacturing contract in place with LONZA.
- PARPi's approved for use in **ovarian, breast, prostate, pancreatic, fallopian tube and peritoneal cancers**.

Stenoparib (E7449) targets Wnt/ β -catenin related genes like selective tankyrase inhibitor XAV939¹



1. McGonicle et al, OncoTarget vol 6 no 38, 2016.

Ongoing Phase 2 study in 3L+ Ovarian Cancer Patients: Durable Clinical Benefit from Stenoparib Monotherapy BID



CRs are unprecedented in the PARPi re-treated patient population

Benefit independent of BRCA/HRD status

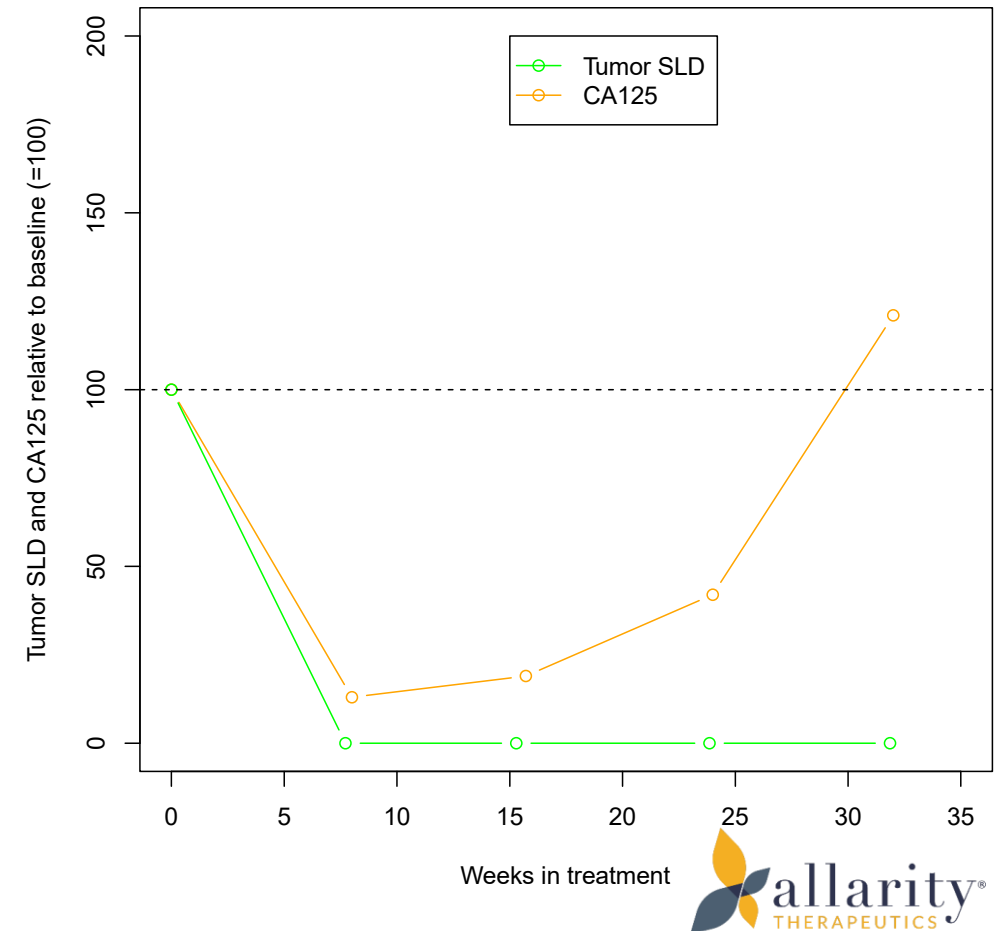


Patient 1: Confirmed Complete Response > 30 weeks on Treatment

*Platinum Resistant, prior PARPi, prior Checkpoint inhibitor
Tumor BRCA2 mutation, HRD positive*

Treatment History

- 2015 total hysterectomy w bilateral salpingo-oophorectomy followed by carboplatin and paclitaxel
- 2016 carboplatin and paclitaxel
- 2016 carboplatin and doxorubicin
- 2017 carboplatin and gemcitabine
- 2018 carboplatin and topotecan followed by **olaparib maintenance**
- 2019 ipilimumab and nivolumab (TAPUR trial)
- 2023 surgical removal of abdominal wall mass followed by radiotherapy
- 2023 enrolled 2X-2001 DRP positive

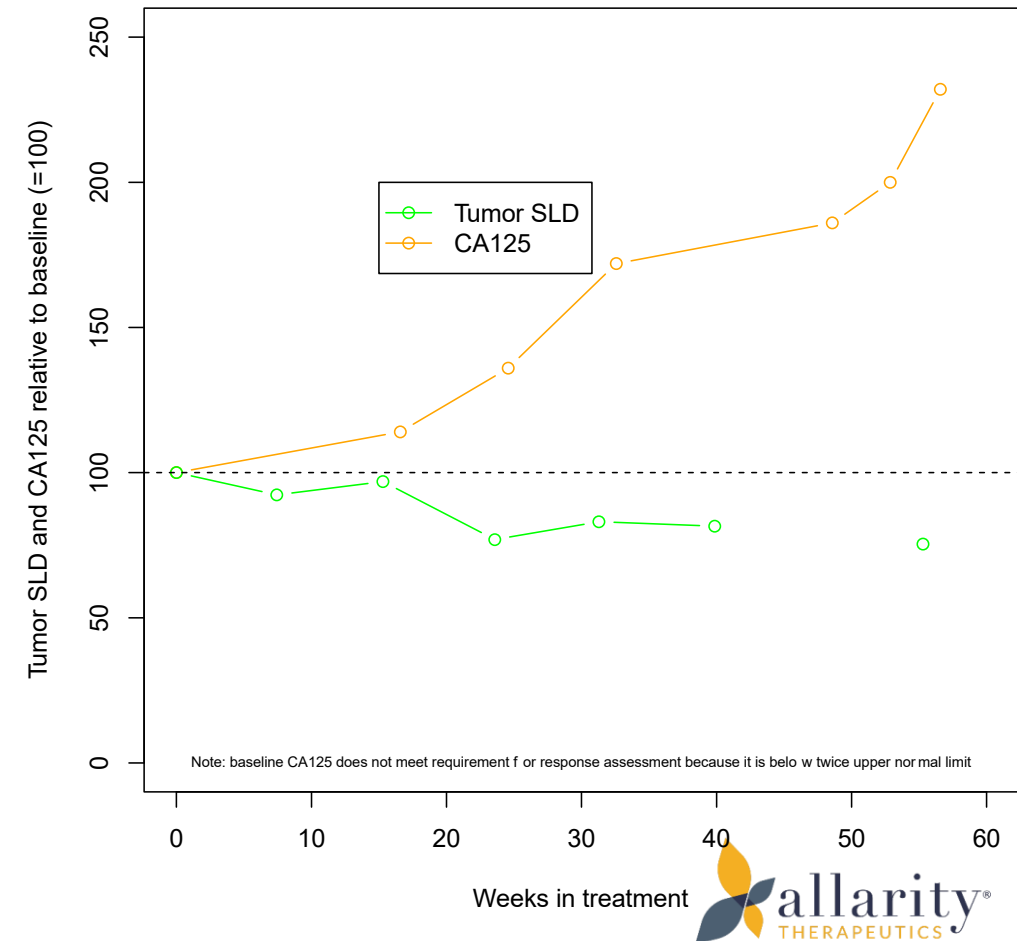


Patient 2: Stable Disease, on Treatment More Than 19 months

*Platinum Resistant, PARPi prior treatment, Post Elahere, Post Bevacizumab
Germline BRCA1 mutation, HRD positive*

Treatment History

- 2007 debulking surgery plus adjuvant chemotherapy (carboplatin + docetaxel) followed by maintenance paclitaxel
- 2012 recurrence treated with carboplatin and **olaparib**
- 2018 – 2021 treated with Mirvetuxemab (GYN59), carboplatin and bevacizumab and bevacizumab maintenance
- 2022 recurrence paclitaxel plus cisplatin
- 2023 paclitaxel monotherapy
- 2023 enrolled 2X-2001 DRP positive

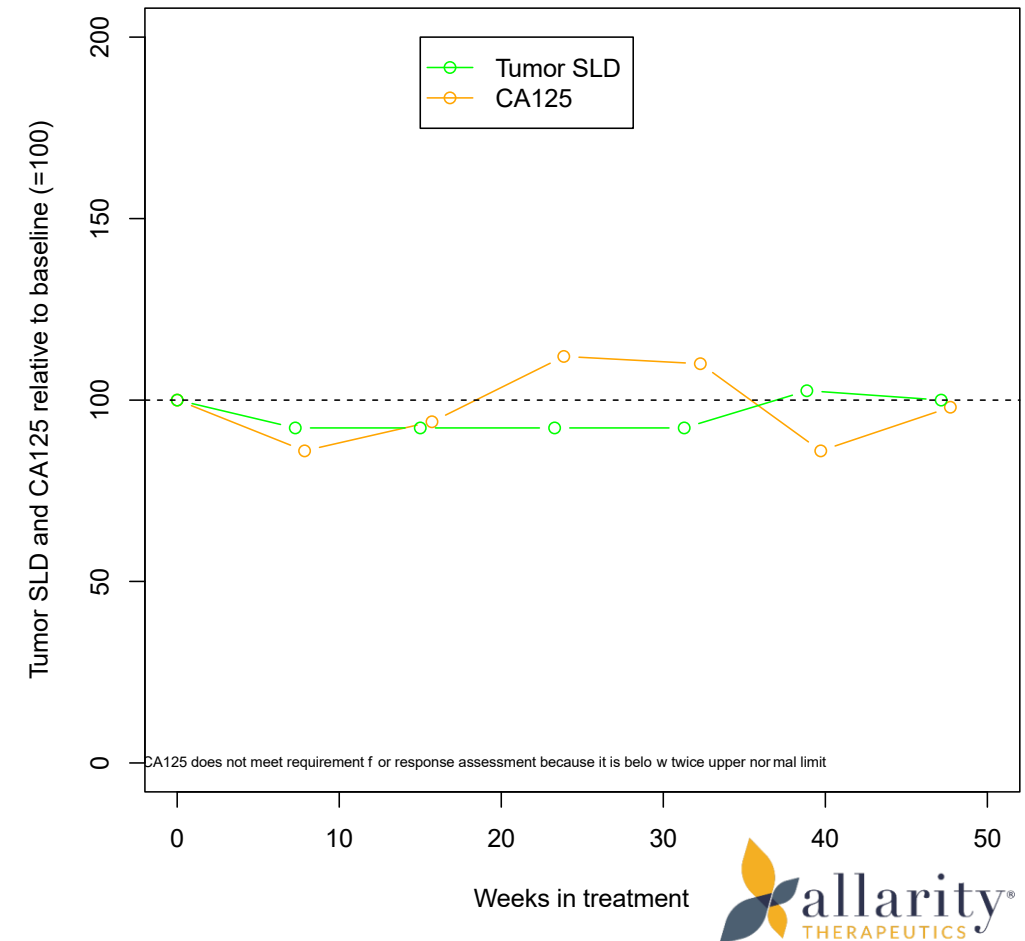


Patient 3: Stable Disease, on Treatment More than 19 months

Platinum Resistant, PARPi naïve, Germline BRCA wild type

Treatment History

- 2020 total hysterectomy and rectosigmoid tumor resection
- 2021 carboplatin plus gemcitabine
- 2022 doxil plus bevacizumab
- 2023 paclitaxel maintenance
- 2023 enrolled Stenoparib DRP positive



Stenoparib Shows Low Myelotoxicity

Potential Best-in-Class Safety Profile & Ability to Combine with Other Drugs

Stenoparib QD+ BID (N=42)¹

	Grade 1-4	Grade 3-4
Neutropenia	2%	0%
Anemia	21%	7%
Thrombocytopenia	0%	0%

Approved PARPi ex. Niraparib QD (N=463)²

	Grade 1-4	Grade 3-4
Neutropenia	20%	13%
Anemia	51%	27%
Thrombocytopenia	52%	28%

¹ Unpublished, preliminary data from ongoing Phase 2 study of Stenoparib in DRP®-selected advanced ovarian cancer patients and prior Phase 2 study in DRP®-selected metastatic breast cancer patients.

² Niraparib FDA label 2021



Stenoparib BID compares favorably to the PARP 1 selective Saruparib currently under development by AstraZeneca

Potential Best-in-Class Safety Profile & Ability to Combine with Other Drugs

Stenoparib BID (N=14)¹

	Grade 1-4	Grade 3-4
Neutropenia	7%	0%
Anemia	21%	21%
Thrombocytopenia	0%	0%

PARP1 selective Saruparib QD (N=141)²

	Grade 1-4	Grade 3-4
Neutropenia	NA	11%
Anemia	NA	15%
Thrombocytopenia	NA	6%

¹ Unpublished, preliminary data from ongoing Phase 2 study of Stenoparib in DRP®-selected advanced ovarian cancer patients. One patient with Leukopenia is not included in table.

² Phase I/2a PETRA trial <https://www.abstractsonline.com/pp8/#!/20272/presentation/11430>

CONFIDENTIAL



New Protocol for Phase 2 Trial in Ovarian Cancer: Stenoparib Monotherapy in Platinum Resistant or Ineligible Ovarian Cancer

Objective:

Solidify Dose for Pivotal Trial, Establish Cut-point for DRP Pre-selection in Pivotal Trial

Patients with Platinum resistant or Platinum ineligible disease

- No more than 1L of chemo beyond declaration of Platinum Resistance except ADCs
- No Platinum Refractory Pts or Pts with Ascites
- BRCA mutant and BRCA wt patients accepted

No DRP pre-selection- DRP will be run retrospectively in newer biopsy tissues

Randomization to one of two BID dose cohorts to address FDA's Project Optimus Edict

- 200mg + 400mg
- 400mg + 400mg

Safety and Efficacy

- Response Rate, Clinical benefit Rate, Progression Free Survival

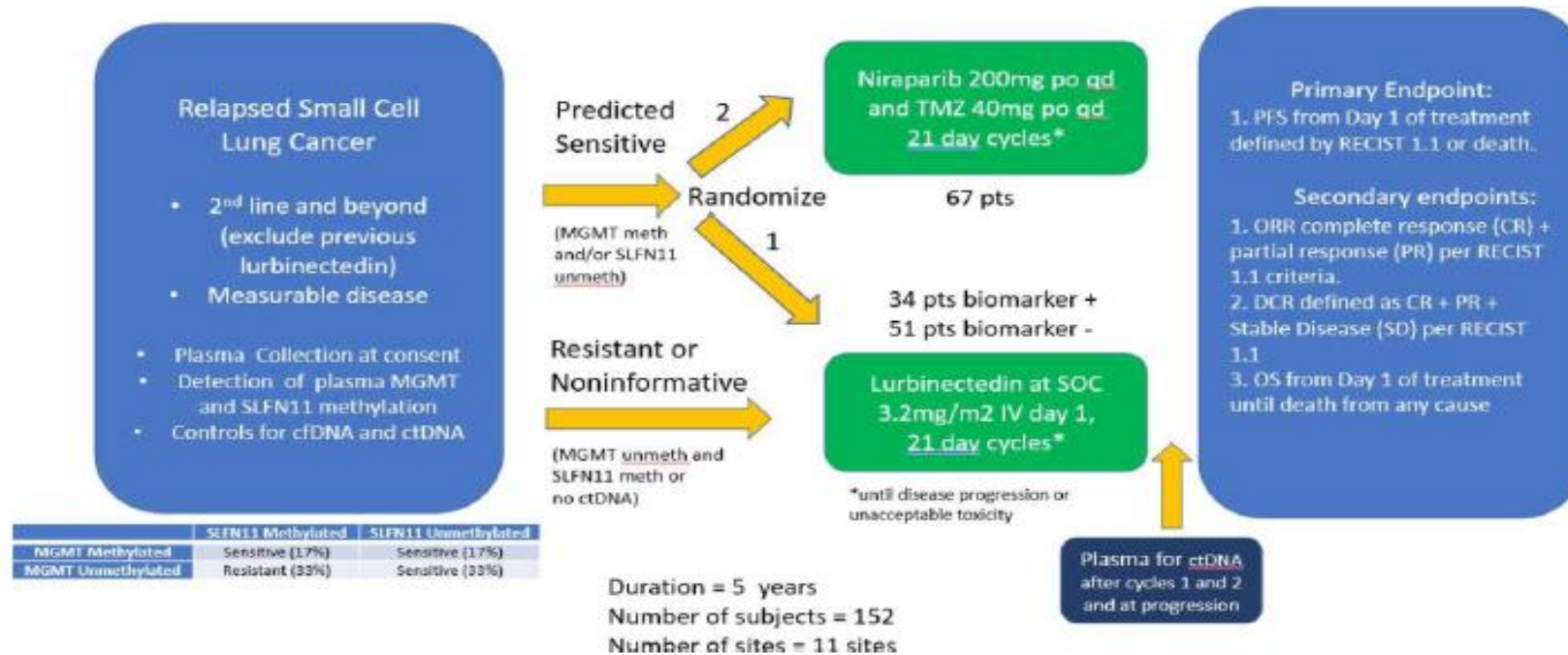
Up to 12 Sites (0.25 patients to be enrolled per site per month)

- US- Oklahoma and Swedish in Seattle
- UK- Guy's London and Scotland



VA sponsored Phase 2: Stenoparib + TMZ in recurrent SCLC

1. SCHEMA



- Niraparib was the original PARPi used in design but is being replaced by Stenoparib
- Biomarkers are blood-based methylation marks
- Safety lead in
 - 200mg steno + TMZ
 - 200mg steno BID + TMZ
 - 200 + 400mg Steno + TMZ

Fully funded, need only provide drug product

Allarity Therapeutics Financial Highlights

Market Cap: ~\$15 million

- **Runway into 2027 with first substantive clinical data expected mid 2026.**
- **Streamlined cap table is primarily all common stock.**

Stenoparib: A Unique, Oral Dual PARP and Tankyrase Inhibitor

Best-in-class, orally administered small molecule inhibitor of PARP and Tankyrase

- PARP inhibition disables DNA Repair, leading to selective cancer cell death
- Tankyrase Inhibition blocks key cell survival pathways activated in cancer cells

Durable Clinical Benefit from Stenoparib monotherapy in heavily pre-treated patients

- Ongoing Phase 2 clinical trial in 3L+ Ovarian cancer patients- DRP preselected patients
- Prior Phase 1 clinical trial data in Ovarian and Pancreatic cancer patients
 - Stenoparib-DRP[®] correctly identified patients with clinical benefit in blinded, retrospective studies

Global rights, exclusively in-licensed from Eisai

- GMP drug manufacturing contract in place with LONZA



Stenoparib MOA and Clinical Data Suggest Numerous Clinical Opportunities and Value Driving Catalysts

Ovarian Cancer – opportunities across the patient landscape

- Platinum sensitive, resistant and refractory disease
- BRCA wt and mut patients
- PARPi retreatment
- Maintenance and active disease

Other Cancers

- Endometrial, prostate, pancreas, breast
- Colon and other wnt-driven cancers

Build out Stenoparib Clinical programme to maximize its clinical and commercial value

Allarity's DRP can effectively ringfence patients most likely to benefit from anti-cancer therapies.

- DRP has been successful in selecting patients achieving benefit in a number of indications with a number of drugs
- DRP has been prospectively used in a trial of LiPlaCis where it was able to enrich for responding patients
- DRP has been retrospectively evaluated in a Phase III trial of dovitinib
- DRP is being used to prospectively select patients in the phase II trial of stenoparib monotherapy in ovarian cancer
- Stenoparib monotherapy (BID) shows durable clinical benefit in advanced ovarian cancer patients
- Stenoparib is being advanced with the DRP toward registration in Ovarian Cancer



Thomas Jensen

CEO

tjensen@allarity.com

allarity.com

NASDAQ: ALLR

