Mythos Biotechnology Fund

$ARAV case study

Prepared by Vandon Duong and Mike Van

November 2019

Disclaimers

- The sole purpose of this case study is to serve as a training material for our fund's investment analysts and others who are new to biotech investing.
  - This case study is not an investment recommendation and the information presented may be inaccurate or out-of-date.
  - We do not offer professional investment advice. We recommend that readers conduct independent due diligence on the stock.
- Mythos closed its prior investment in $ARAV with significant positive return and is not holding any position in $ARAV at this time.
  - Our fund operates as a general partnership and do not have limited partners. Our activities are centered around education in biotech investing.
  - Past performance is not indicative of future results. Any investment involves considerable risk. Individual partners are not liable for capital losses incurred by the Mythos Biotechnology Fund.

Outline of case study

- Diligence resources
- Company profile and investment thesis
  - Biological background
  - Clinical background
  - Technology background
- Preclinical and clinical results
  - Evaluation and further diligence
- Competitive landscape and backers
- Review, upcoming catalysts, risks, and recommendation
- Post-diligence, post-decision information

Diligence resources

- SEC filings
  - 10-K: annual report on company business and detailed analyses
  - 10-Q: quarterly report with unaudited financial statements
  - 8-K: unscheduled report of material events
- Company presentations
  - Aravive corporate slide decks
  - GAS6/AXL KOL Symposium (Feb 5, 2019)
  - SGO poster from Washington U. research team (Mar 2019)
  - EORTC-NCI-AACR poster (Nov 2018)
- Scientific literature
  - Biology and technology papers published by Giaccia and Cochran
  - Ovarian cancer treatment and standard of care

$ARAV company profile

- Aravive became a public company through reverse merger with Versartis on Oct 16, 2018, after Versartis failed an unrelated Phase 3 trial
  - Versartis: Somavaratan failed to match Pfizer's Genotropin for pGHD
  - Aravive: Single-asset drug to interrupt AXL-GAS6 signaling for suppressing cancer survival and metastasis
- 1Q19 valuation was near cash position
  - Market capitalization hovered around $80MM
  - Cash position was below $60MM
  - Burn rate should last through 1Q20
  - Received $20MM CPRIT (Texas Cancer Grant)

Jay P. Shepard (CEO)
33 yrs experience: previously Executive partner at Sofinnova Ventures & CEO of NextWave Pharmaceuticals.

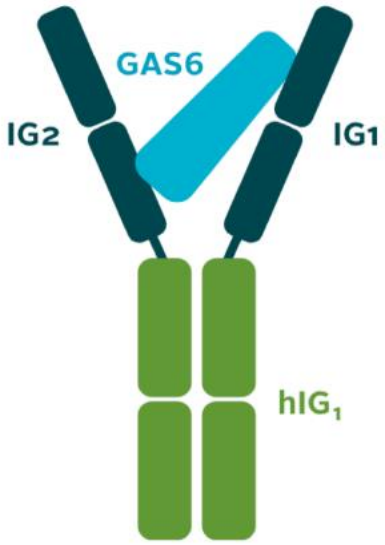
Srinivas Akkaraju (chairman)
Managing partner at Samsara BioCapital
Formerly general partner at Sofinnova and managing director at New Leaf

Investment thesis

Pitched at the Mythos meeting in April 2019

"At present, Aravive is relatively unknown and has very low valuation. AVB-S6-500 is a promising AXL decoy drug, having a great safety profile and synergizes with standard-of-care chemotherapy. Early clinical trials are well designed and, if successful, will cause $ARAV to jump at the release of topline data for Phase 1b and Phase 2."

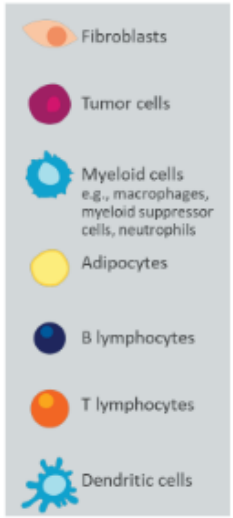
Single-asset therapeutic pipeline

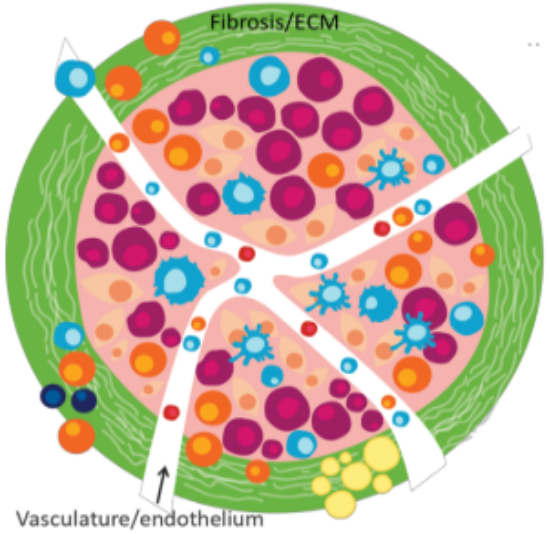


	Indication	Preclinical	Phase 1	
AVB-500	**Ovarian** platinum resistant	**Status:** P1b expansion underway to confirm early efficacy		Fast track designation
AVB-500	**Clear Cell Renal Cell Carcinoma**	**Status:** P1b/P2 Initiation expected 4Q19/1Q20		
AVB-500	**3rd Oncology** (undisclosed indication)			
AVB-500	**Kidney Fibrosis (IgAN)**	**Status:** Initiation expected 2019		
AVB-S6-TBD	**Chronic Fibrosis** (undisclosed indication)			

Source: Aravive corporate presentations

Targets in the tumor microenvironment





Hypoxia, low pH and low nutrients in microenvironment favor AXL expression

3 components of TME:

1. **Vasculature**
2. **Immune cells**
3. **Mesenchymal cells & ECM**

Angiogenesis/Vascular		Immune cells		Mesenchymal, Immune cells, Fibrosis	
VEGF/ VEGFR	Angiogenesis, vasculogenesis and lymphangiogenesis	PD1-L/ PD-L1 & other immune targets	Negatively regulate T cell proliferation, CTL function, cytokine secretion in tumor microenvironment	GAS6/AXL	Induces tumor cell growth, migration, fibrosis, radiation, and chemotherapy resistance, DNA damage repair, orchestrates angiogenesis and immune response
Approved Drugs:	• bevacizumab • sunitinib • sorafinib • pegaptinib • ranibizumab • ramucirumab	Approved Drugs:	• nivolumab • pembrolizumab • atezolizumab	Approved Drugs:	• ~~None~~ cabozantinib (nonselective AXL inhibitor)

Source: Aravive corporate presentations

AXL-GAS6 pathway as a novel cancer target

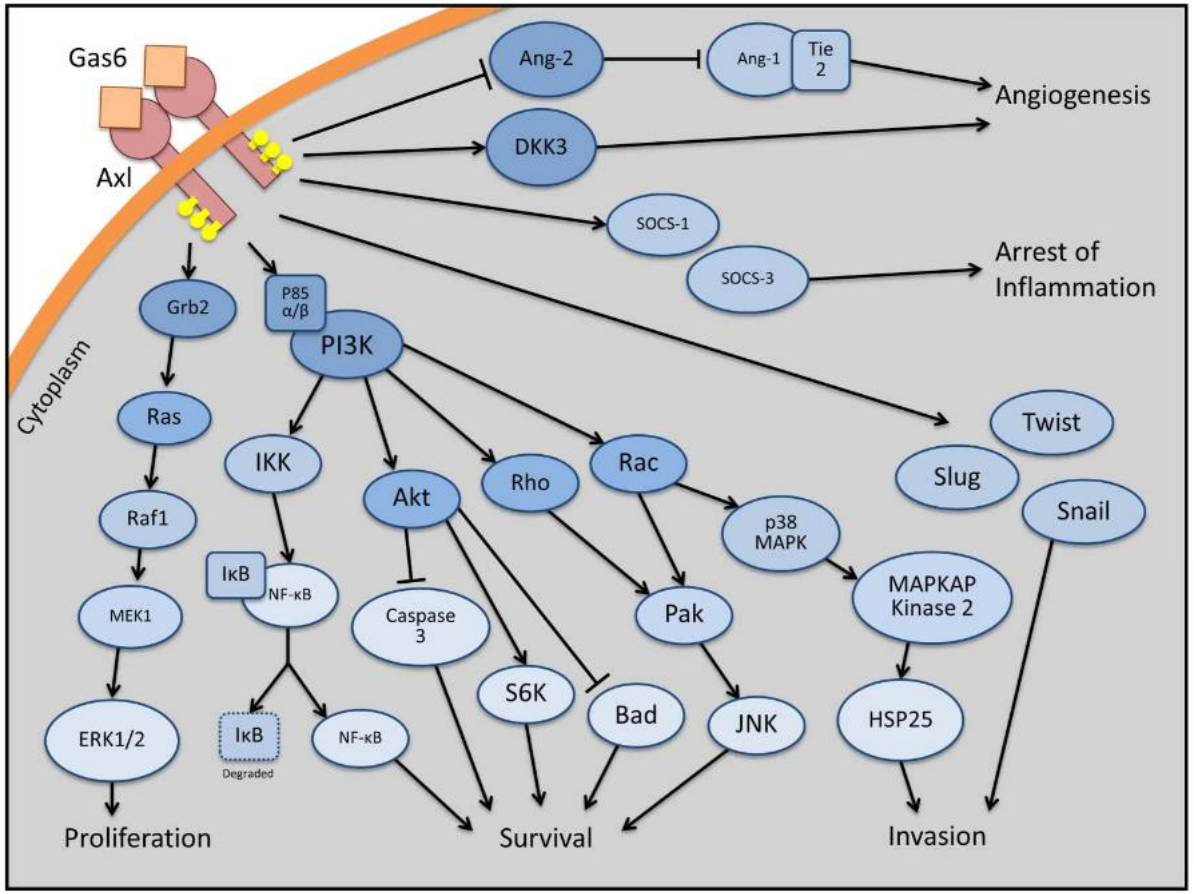
Loges, Sonja, et al. "Malignant cells fuel tumor growth by educating infiltrating leukocytes to produce the mitogen Gas6." Blood 115.11 (2010): 2264-2273.

Rankin, Erinn B., et al. "AXL is an essential factor and therapeutic target for metastatic ovarian cancer." Cancer research 70.19 (2010): 7570-7579.

Wu, Xiaoliang, et al. "AXL kinase as a novel target for cancer therapy." Oncotarget 5.20 (2014): 9546.

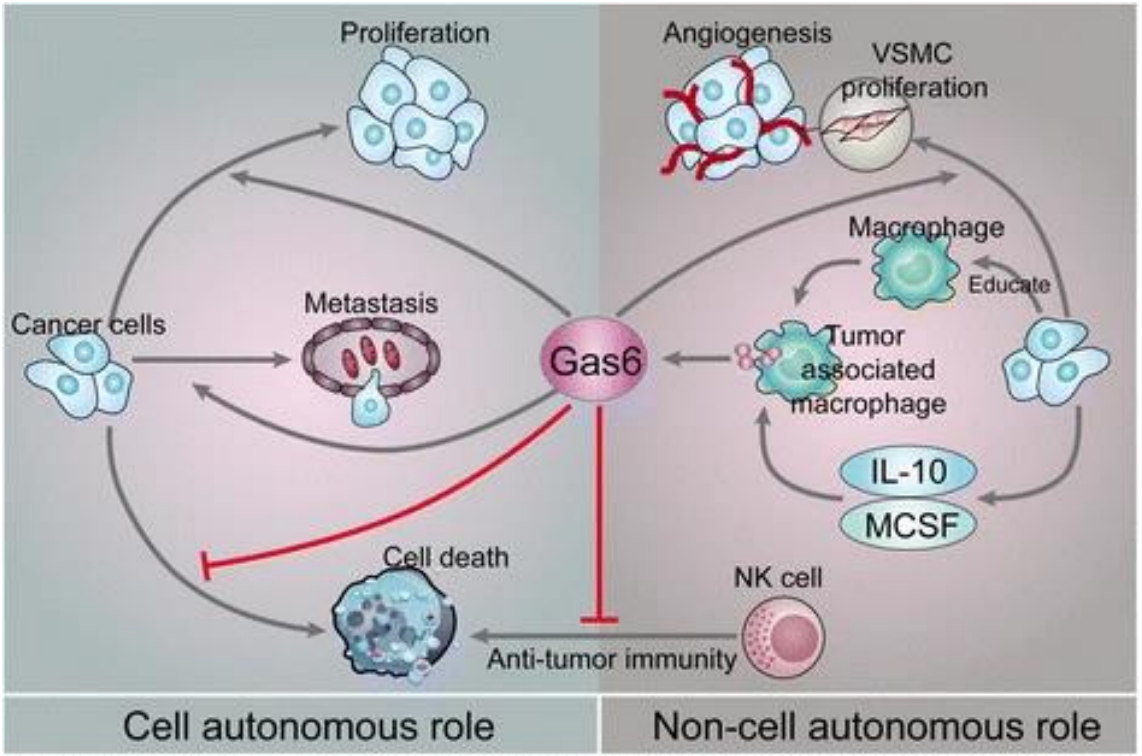
Paccez, Juliano D., et al. "The receptor tyrosine kinase Axl in cancer: biological functions and therapeutic implications." International journal of cancer 134.5 (2014): 1024-1033.

GAS6 is the only ligand that activates the AXL pathway



Attributes of the GAS6 ligand

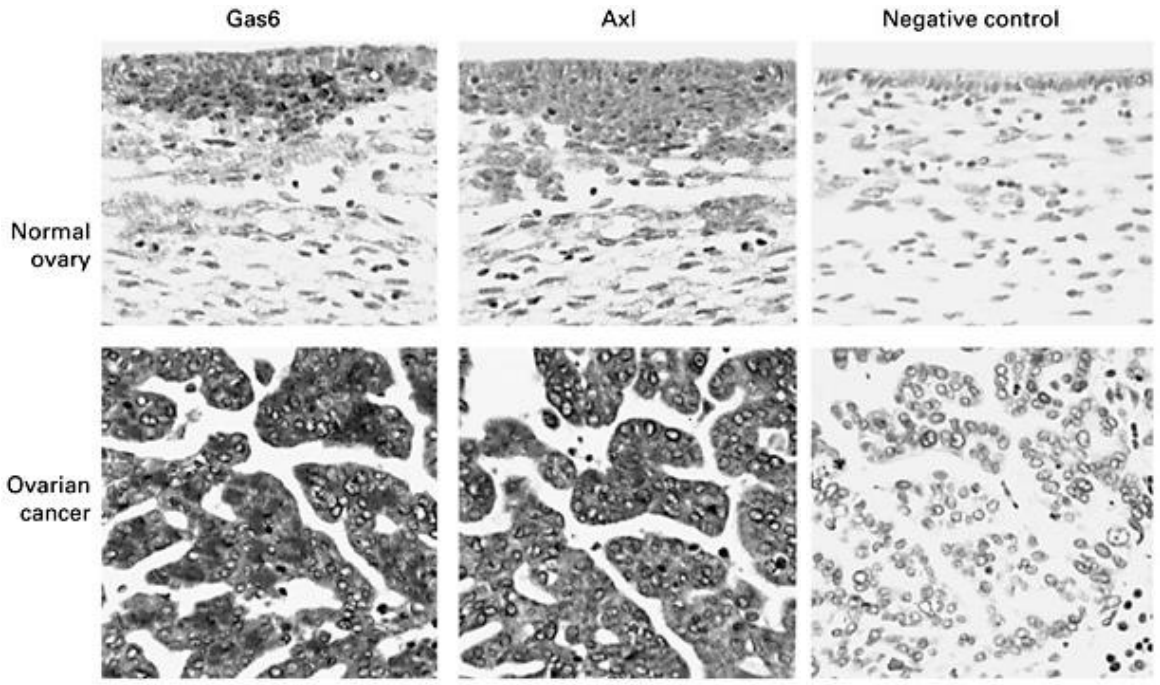
- GAS6 is the growth-arrest specific 6 and binds the TAM family of receptors
  - It has highest affinity for AXL, with lower affinity for TYRO3 and MER
- Tumors can induce macrophages to overexpress and secrete GAS6 in the microenvironment
- GAS6 binds to TAM receptors on NK cells and inhibits their anti-tumor immune effects (Paolino et al., *Science* 2014)



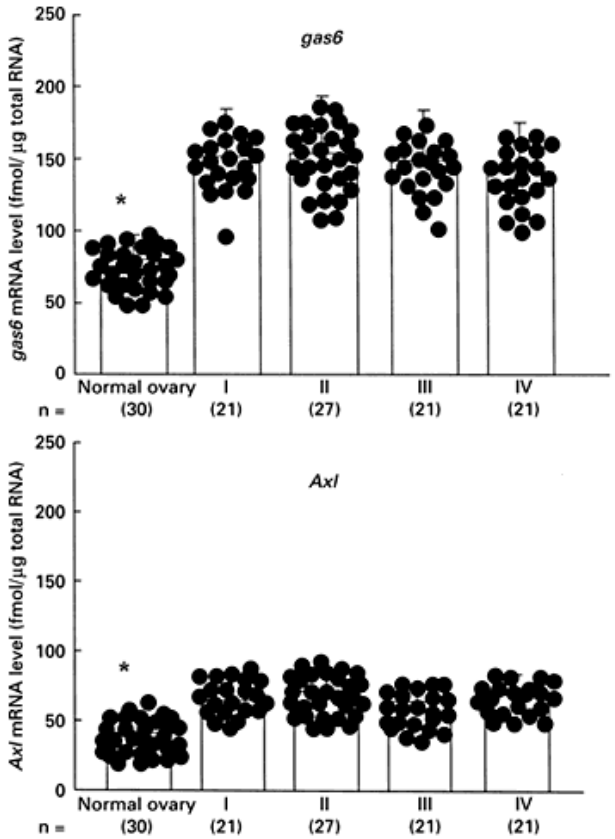
Wu et al., *Molecular Cancer* 2018

Expression of AXL/GAS6 in ovarian cancer

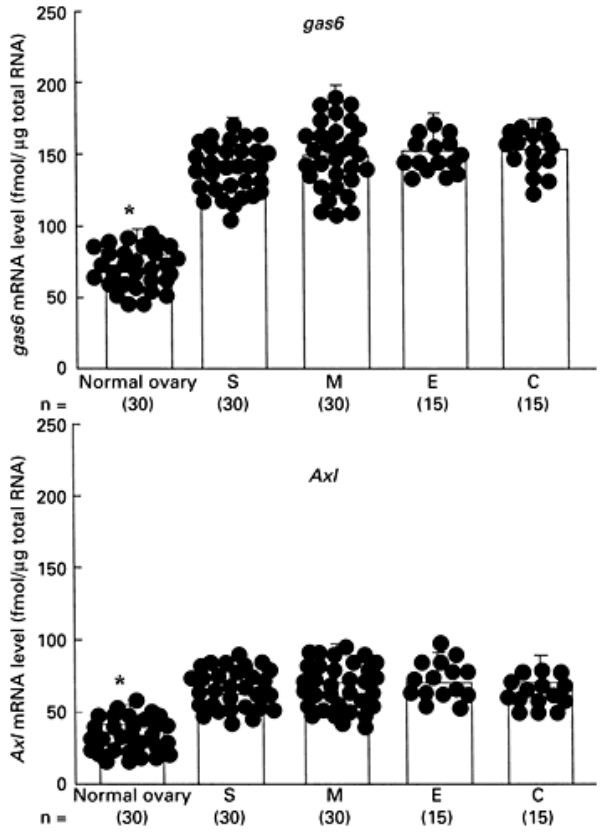
Overexpressed and coexpressed



mRNA



protein



Source: Sun et al., *Oncology* 2004

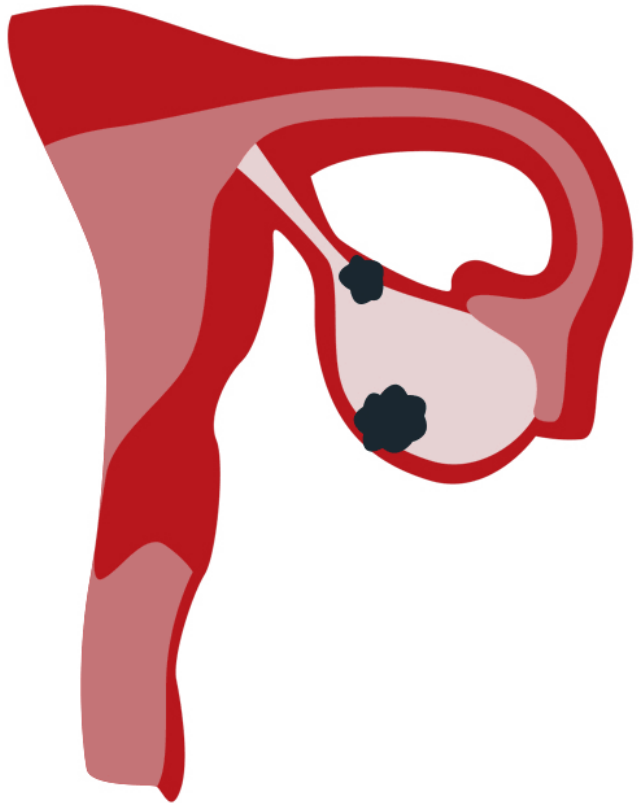
Ovarian cancer patient population

200k women in the US have ovarian cancer

- #1 cause of gynecologic cancer deaths
- 60% of ovarian cancer patients are diagnosed with metastatic disease
- Five-year survival rate is 47%

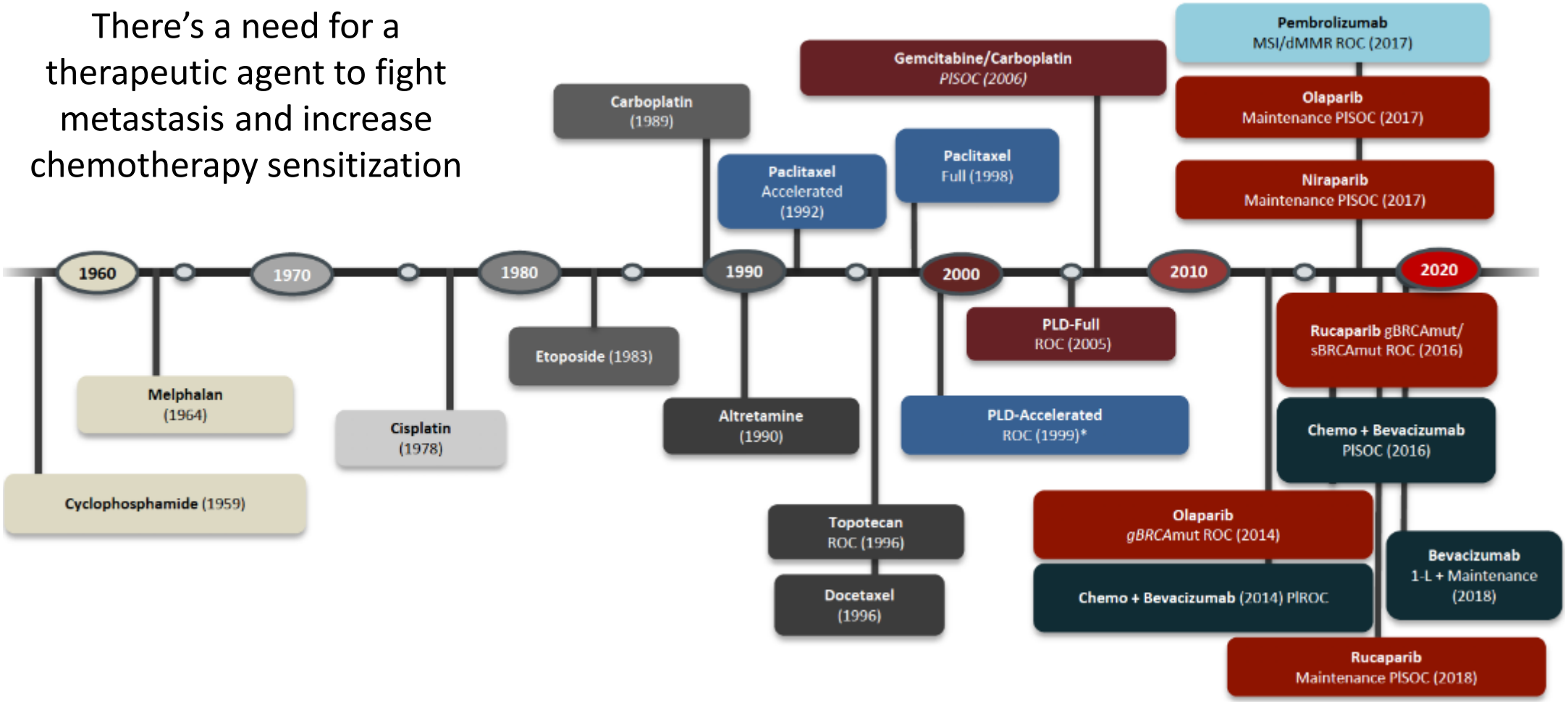
Huge unmet need

- Large patient population
- Poor disease prognosis



Ovarian cancer drug approvals

There's a need for a therapeutic agent to fight metastasis and increase chemotherapy sensitization

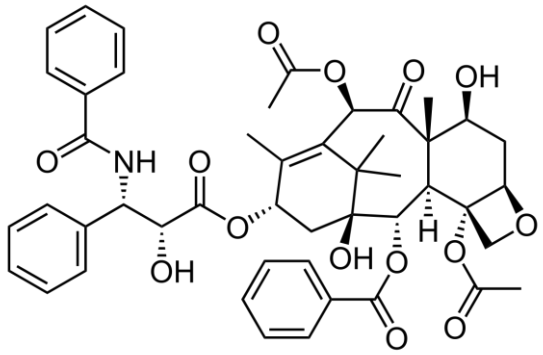


Source: Aravive GAS6/AXL KOL Symposium (Feb 5, 2019)

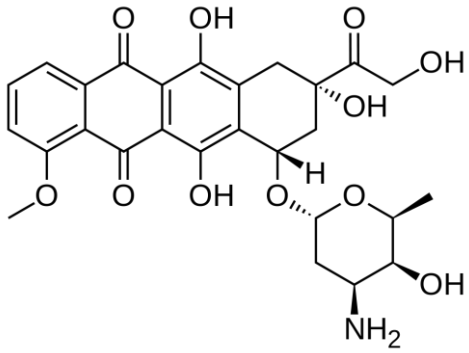
Standard of care for ovarian cancer patients

First-line treatment

- Platinum-bases drugs (carboplatin or cisplatin) combined with taxane (e.g. paclitaxel)
- Rarely curative; at first relapse, 25% of patients are platinum-resistant



Paclitaxel
(Pac/PTX)



Doxorubicin
(Doxil/PLD)

If platinum-sensitive

- Repeat round of platinum-based chemotherapy with option of maintenance therapy (bevacizumab/Avastin or PARP inhibitor)

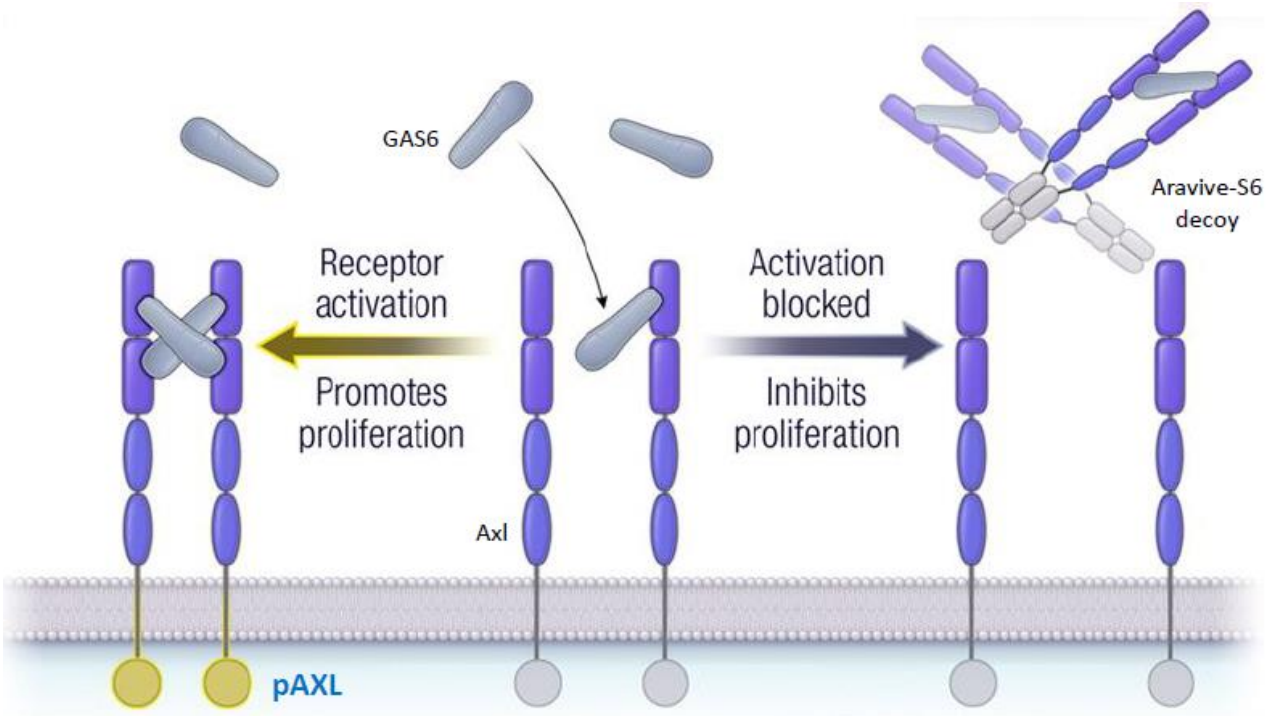
If platinum-resistant (relapse after less than 6 mo)

- Single-agent chemotherapy (paclitaxel, Doxil, topotecan, gemcitabine) with option of bevacizumab maintenance)

Source: Markman and Bookman, *The Oncologist* 2000; UpToDate

AVB-S6-500 is a high-affinity AXL decoy

- Clinical candidate is an evolved variant of the soluble fragment of AXL fused to Fc
- Wildtype AXL has binding affinity of 33 pM to GAS6, whereas MYD1-72 Fc (i.e. AVB-S6-500) has a binding affinity of 93 fM to GAS6



Relevant publications

- Kariolis, Mihalis S., et al. "An engineered Axl 'decoy receptor' effectively silences the Gas6-Axl signaling axis." *Nature Chemical Biology* 10.11 (2014): 977.
- Kariolis, Mihalis S., et al. "Inhibition of the GAS6/AXL pathway augments the efficacy of chemotherapies." *The Journal of Clinical Investigation* 127.1 (2017): 183-198.

Decoy receptors compared to other drugs

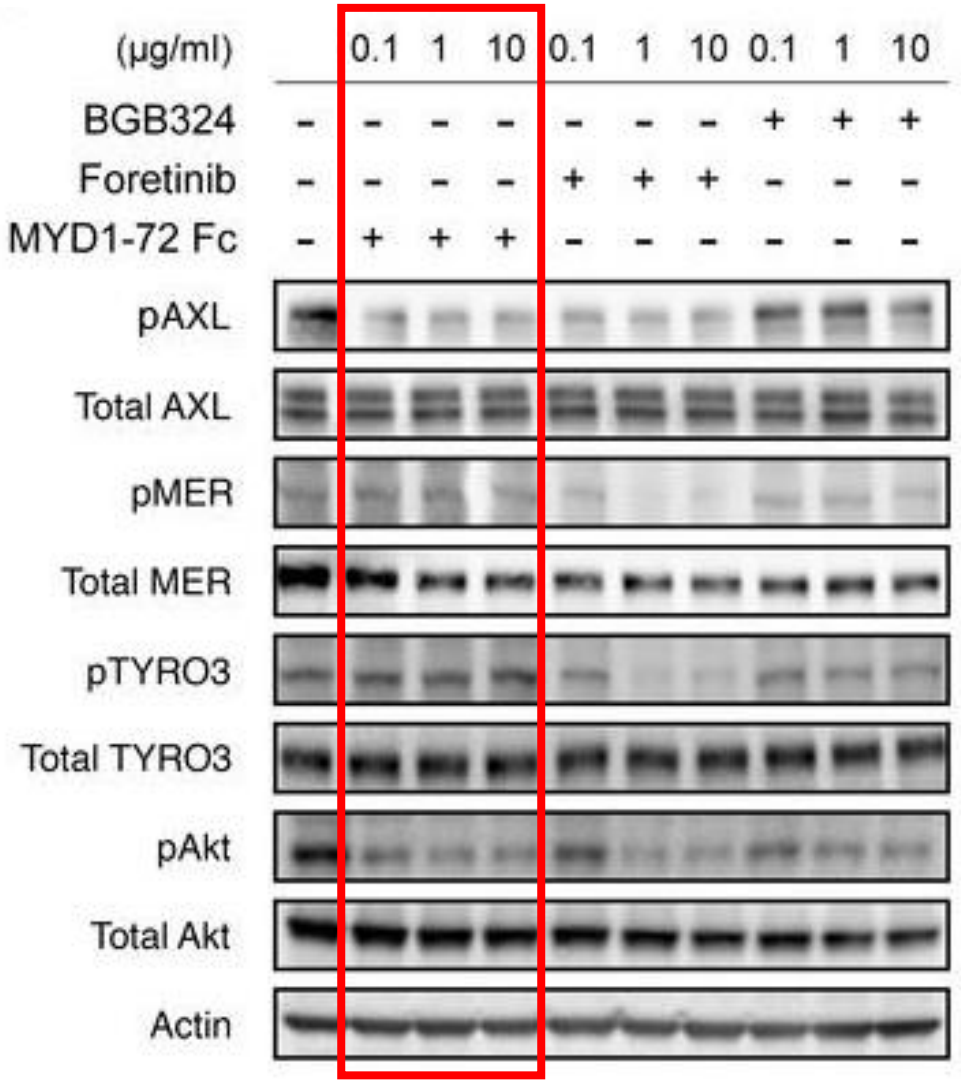
- Small Molecule against AXL
  - **Pros:** direct anti-tumor activity, known chemistry (kinase inhibitors)
  - **Cons:** selectivity/specificity challenge due to high kinase homology, off target DLT's, high attrition for SM development, potential for multiple resistance mechanisms
- Standard Antibody against AXL
  - **Pros:** directly targets tumor cells
  - **Cons:** affinity barrier (require >5pM affinity), natural sAXL as decoy, potential for growth factor mediated resistance, "binding site barrier", ADC associated with tox potential
- Standard Antibody against GAS6
  - **Pros:** targets tumor cells and stroma sources of growth factors
  - **Cons:** affinity barrier (require >5pM affinity)
- **Soluble Axl decoy receptor:** leverages native interaction to overcome challenges associated with targeting AXL

Complete target coverage, no off-target activity, high affinity agent

Source: Aravive GAS6/AXL KOL Symposium (Feb 5, 2019)

Preclinical data: comparison with AXL inhibitors

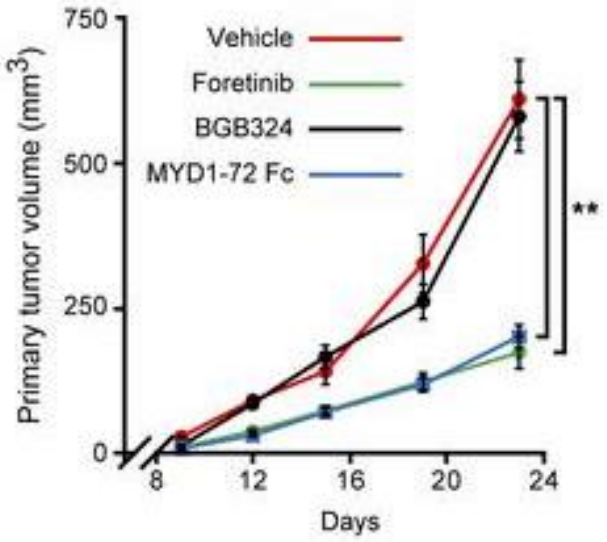
- AVB-S6-500 suppresses AXL signaling, but not MER or TYRO3
  - i.e. MYD1-72 Fc
- BGB324 (i.e. small molecule AXL inhibitor from BerGenBio) weakly suppresses AXL signaling
- Foretinib indiscriminately inhibits all signaling of the TAM family



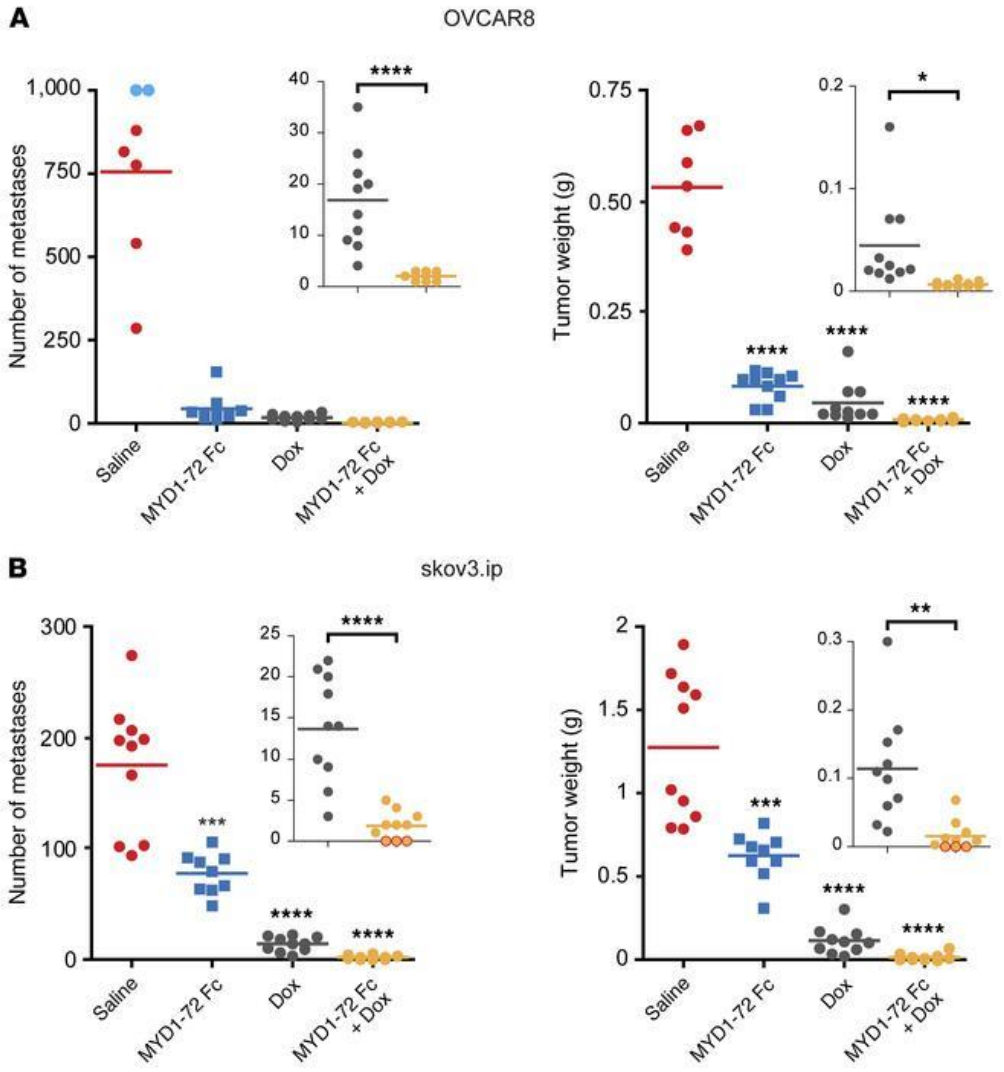
Source: Kariolis et al., *The Journal of Clinical Investigation* 2017

Preclinical data: therapeutic potency

- Decreases tumor size and metastases
- Synergizes with standard-of-care chemotherapy (i.e. doxorubicin)



Orthotopically implanted primary 4T1 tumors in mice

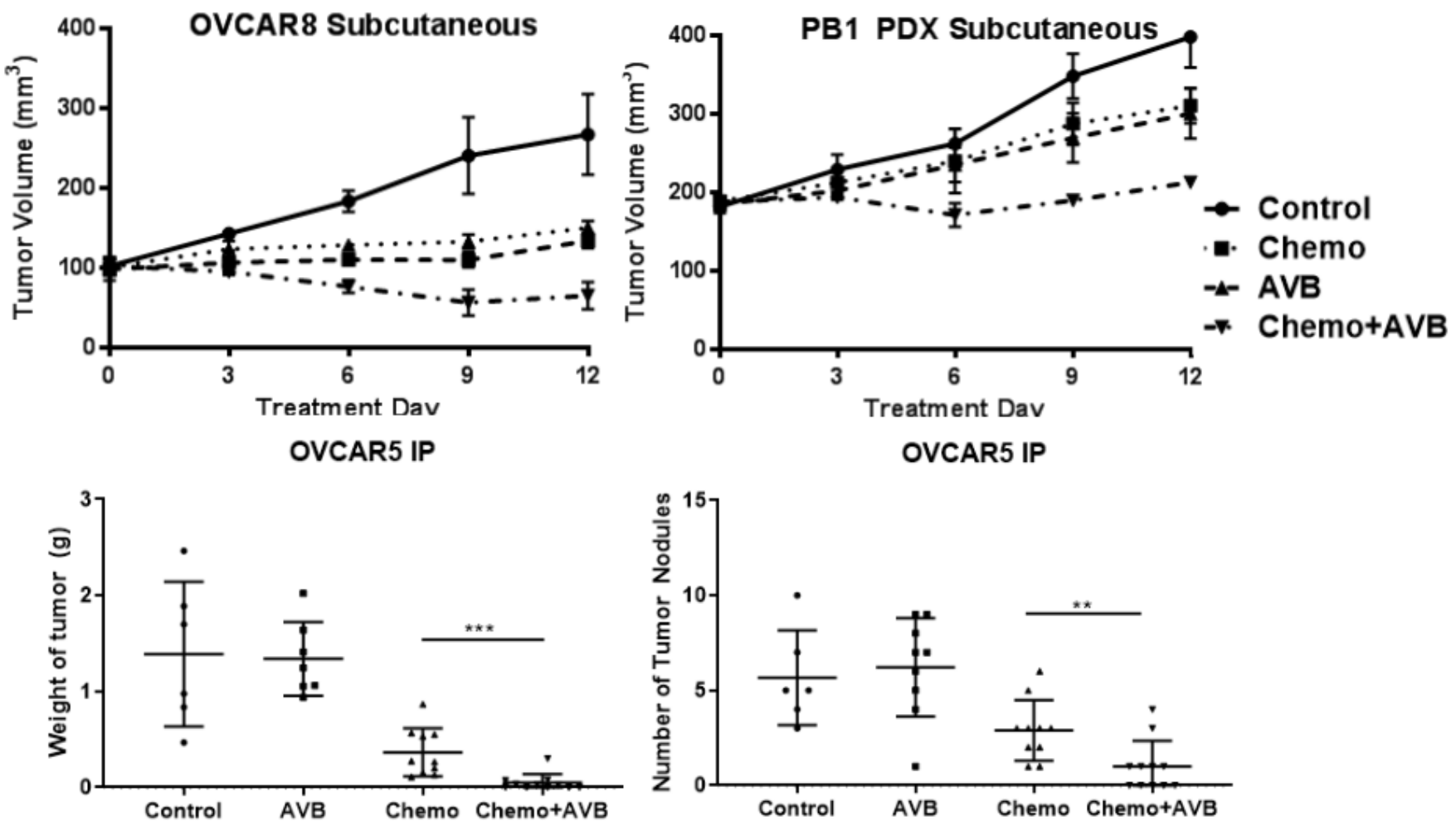


Source: Kariolis et al., *The Journal of Clinical Investigation* 2017

Preclinical data: therapeutic potency

Clear distinction between control and treatments, but shorter timeline

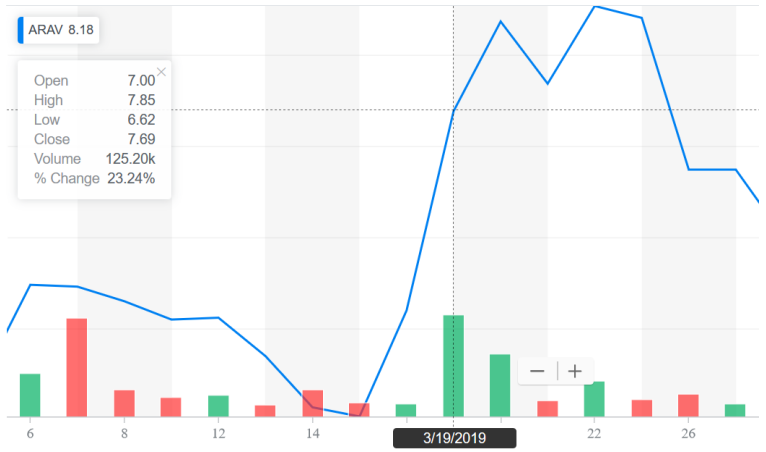
OVCAR5 has low GAS6 expression

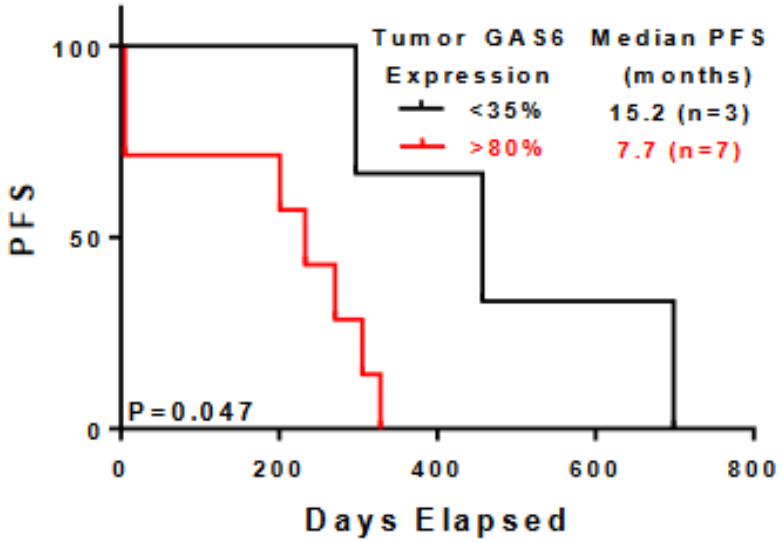


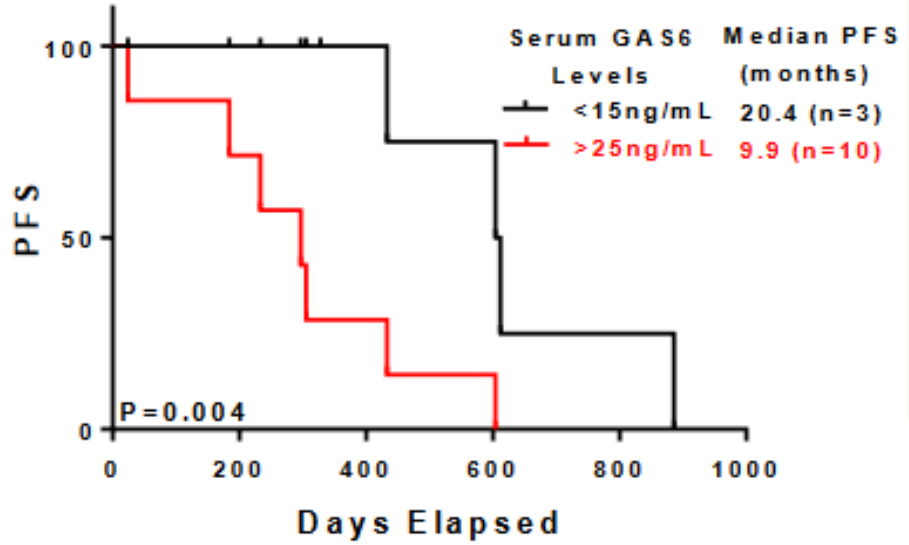
Source: SGO 2019 poster

Retrospective analysis of GAS6 levels in patients

- Ex vivo analysis of 40 tumor and serum samples collected pre- and post-neoadjuvant chemotherapy
  - Increased serum and tumor GAS6 levels are associated with chemoresistance and decreases PFS
  - Large jump in stock price on press release







Source: SGO 2019 poster

Webcast from Cowen and Company 39th annual health care conference

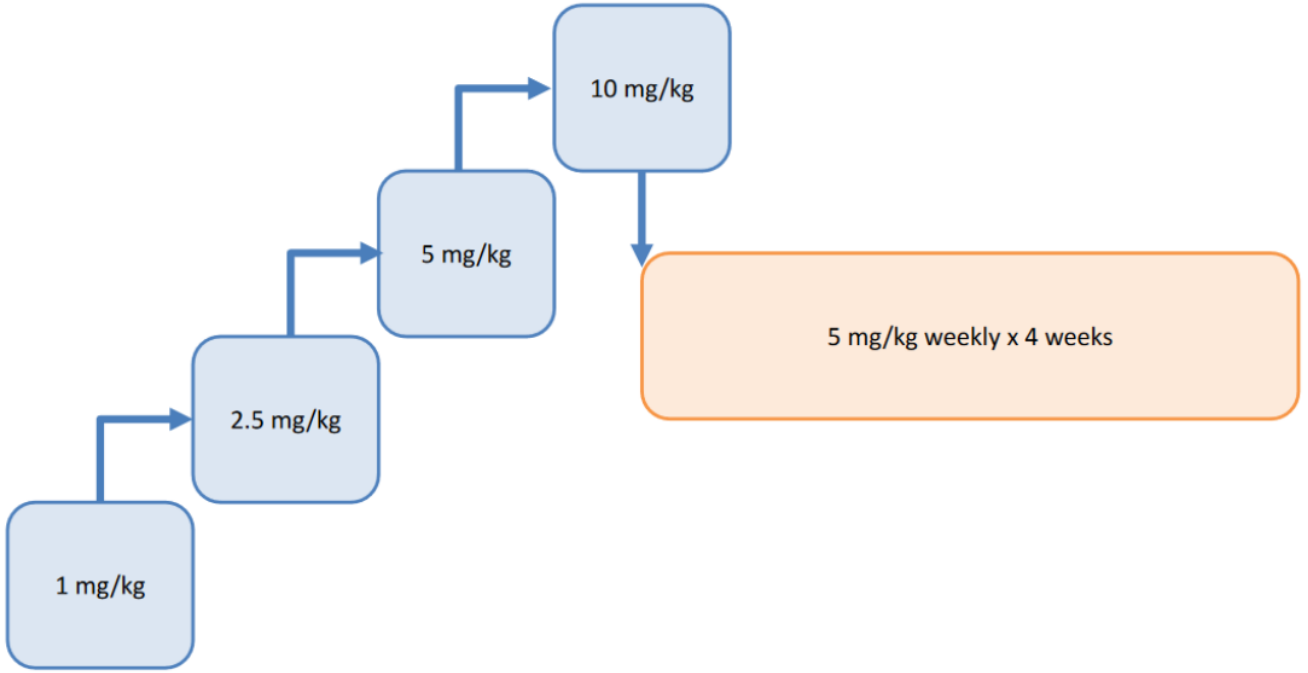
COWEN AND COMPANY

- Up to 150 mg/kg weekly doses over 4 weeks in monkeys
  - Supposedly no toxicity observed
- Similar biodistribution as monoclonal antibodies
- Manufacturing in high yield and purity
- ABV-S6-500 asset can pivot to nephropathy and fibrosis indications
- >90% of platinum-resistant ovarian cancer cells have high AXL levels

Phase 1 trial design

- Single ascending dose and repeat dose study
- 43 subjects participated, 42 dosed, 40 completed
- AVB-S6-500 well tolerated and no serious adverse events
- All subjects negative for anti-AVB-S6 antibodies

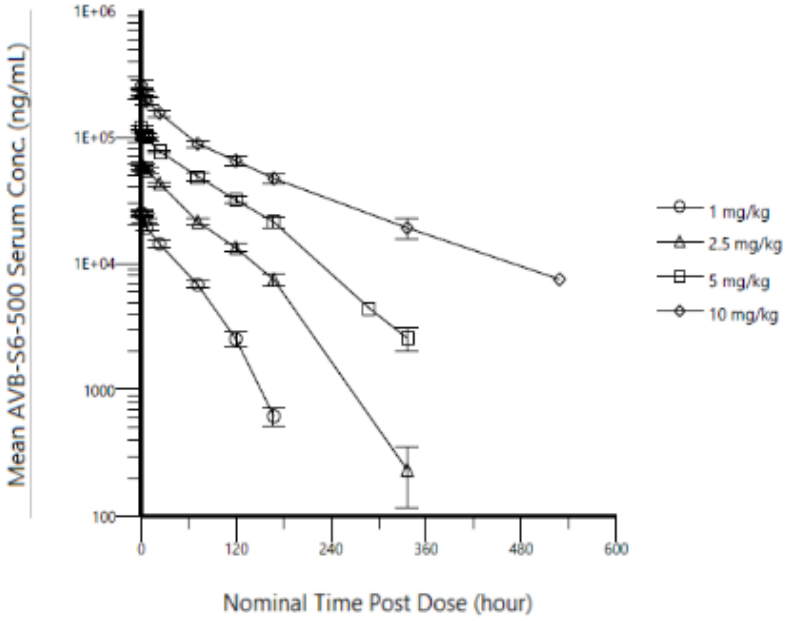
Single-blind, randomized, placebo-controlled in healthy volunteers

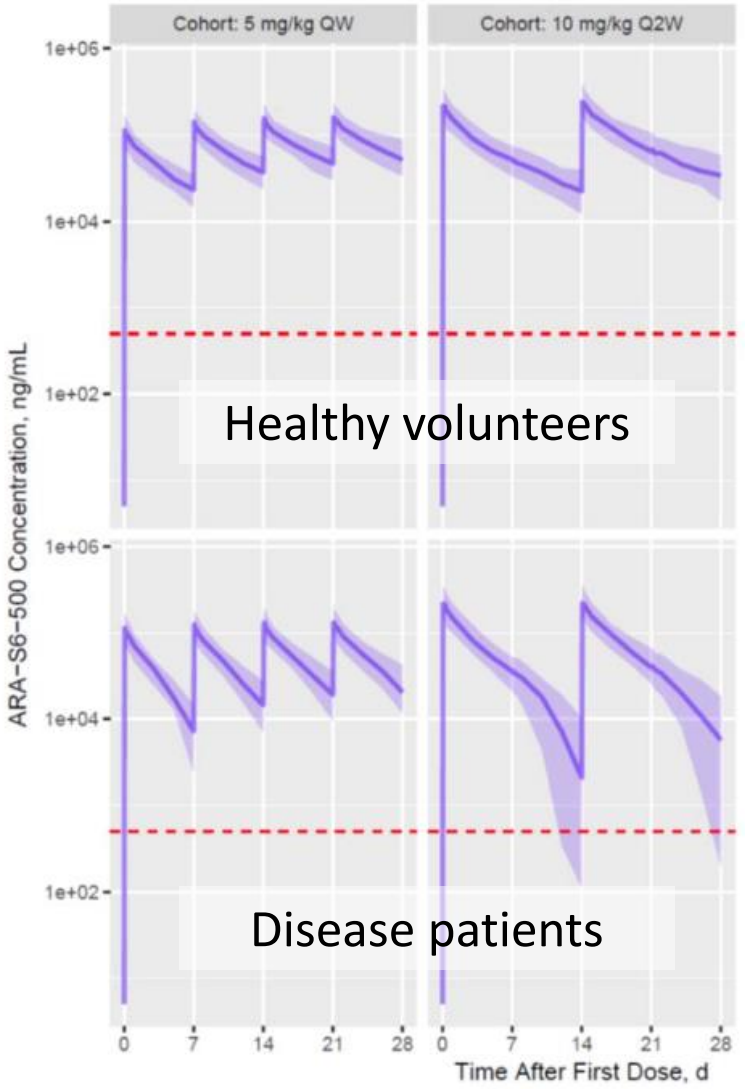


Source: EORTC-NCI-AACR 2018 poster

PK/PD data

- Dose-proportional increase in Cmax, slightly more with AUC
- Long half-life like an antibody/large biologic
- Modeling suggests dosing regimens of 5 mg/kg every week or 10 mg/kg every other week would abrogate sGAS6

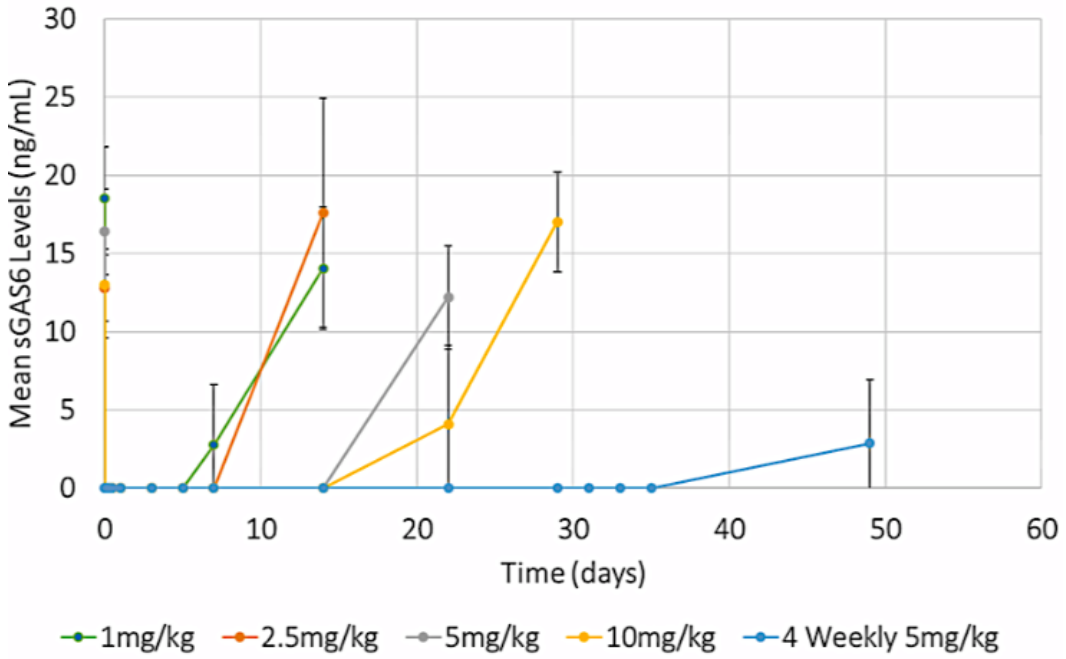


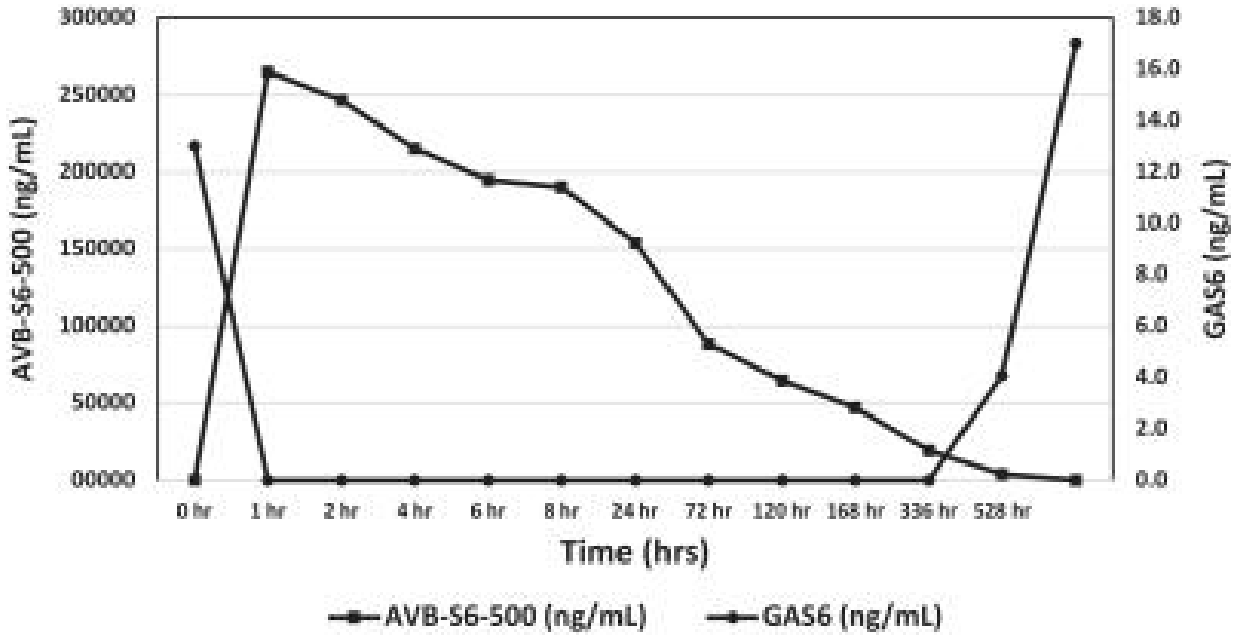


Parameter	1 mg/kg	2.5 mg/kg	5 mg/kg	10 mg/kg	RD 5 mg/kg WK 1	RD 5 mg/kg WK 4
$AUC_{0-\infty}$ (hr*ng/mL)	1,204,800 (14.7)	4,506,800 (16.3)	9,950,600 (14.0)	24,184,000 (23.8)	9,269,800 (15.9)	17,372,400 (27.7)
C_{max} (ng/mL)	25,401 (13.6)	63,669 (15.2)	120,490 (8.3)	252,080 (22.9)	115,600 (14.3)	152,100 (9.9)
T_{max} (hour) [min, max]	1.5 [1.0,4.0]	1.5 [1.0, 8.0]	1.0 [1.0, 2.0]	1 [1.0, 1.0]	1.0 [1.0,2.0]	1.5 [1.0, 4.0]
Vz (L)	38.9 (14.7)	40.7 (18.6)	42.8 (13.1)	67.2 (8.2)	51.5 (11.7)	41.2 (9.1)
CL (mL/hour/kg)	0.83 (14.7)	0.55 (16.3)	0.50 (14.0)	0.41 (23.8)	0.54 (15.9)	0.29 (27.2)
$T_{1/2}$ (hours)	32.5 (12.6)	50.9 (29.4)	59.0 (29.4)	112.6 (21.2)	66.2 (16.9)	99.2 (24.6)

Source: EORTC-NCI-AACR 2018 poster

Suppression of sGAS6 levels in humans



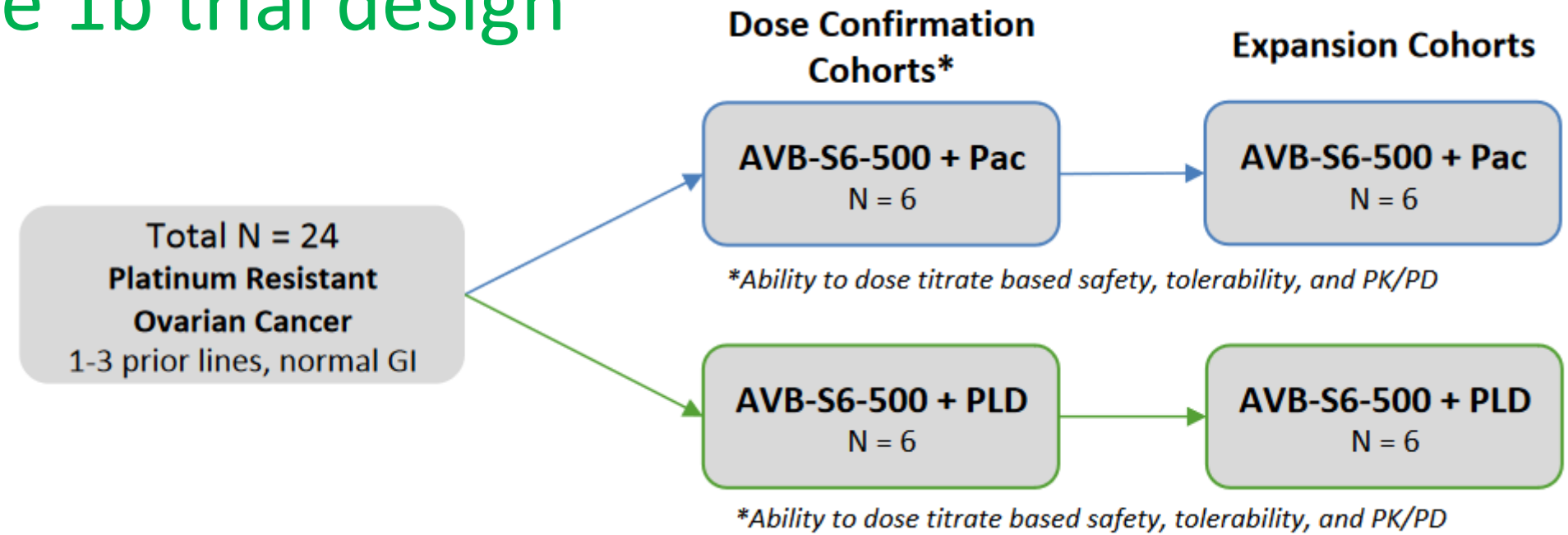


Serum GAS6 levels were suppressed until 22 and 29 days following the 5 mg/kg and 10 mg/kg doses, respectively. Weekly administration of 5mg/kg resulted in suppression of sGAS6 in 4 out of 6 subjects for at least 3 weeks after the fourth dose. Avg sGAS6 was 15.7 ng/mL.

Relationship between AVB-S6-500 protein levels and GAS6 levels in blood from humans participating in the AVB-S6-500 first in human trial.

Source: Aravive corporate presentations

Phase 1b trial design

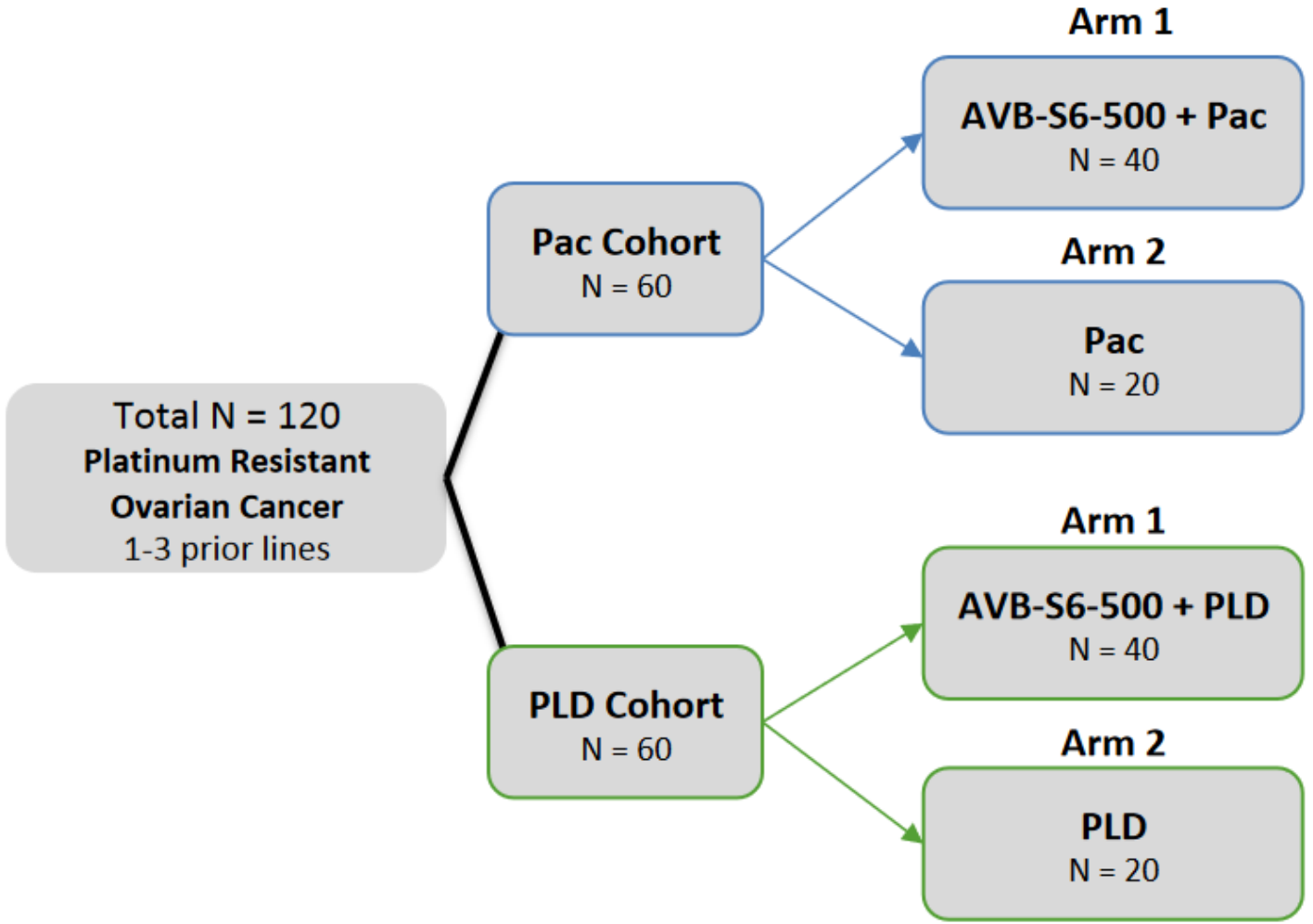


- Safety lead-in portion of the Phase 1b/2 trial is designed to confirm dose predicted based on Phase 1 study in healthy volunteers
  - Initial data expected 3Q19
  - 10 mg/kg every other week selected as the initial dose (confirmed as pharmacologically active)
- Primary objective to assess safety and tolerability; Secondary objective to assess PK/PD and efficacy
- Exploratory objectives include exploration of efficacy endpoints in biomarker (GAS6, AXL) defined populations based on expression of those biomarkers in serum and/or tumor tissue.

Source: Aravive corporate presentations

Phase 2 trial design

- Randomized (2:1), double-blind, placebo-controlled study to compare efficacy and tolerability of AVB-S6-500 in combination with PLD or Pac versus placebo plus PLD or Pac
  - FPI expected in 2H19
  - Topline data expected YE20
- Primary objective to assess anti-tumor activity of AVB-S6-500 in combination with Pac Or PLD as measure by PFS
- Secondary objectives include assessment of PK/PD and additional efficacy endpoints (ORR, OS, DOR, DCR)



Source: Aravive corporate presentations

Paclitaxel in platinum-resistant ovarian cancer

Generally observing

- Myelosuppression
- Lowered white blood cell counts
- Infection / sepsis

Expect similar adverse events in phase 1b/2

Study	Agent/Schedule	n	Response (%)	Comments
McGuire et al[91]	Paclitaxel 110 to 250 mg/m²/24 h q22 days	40 total 25 resistant	24	Myelosupression dose limiting toxicity; 2 fatal cases of sepsis.
Thigpen et al[57]	Paclitaxel 170 mg/m²/IV/24 h/q3 weeks	43 total 27 resistant	33	Neutropenia 73%
Trimble et al[143]	Paclitaxel 135 mg/m²/IV/24 h/q3 weeks	652	22	Leucopenia 78% fever 33%, infection 12%.
Markman et al[93]	Weekly paclitaxel 80 mg/m²	53	25	5 patients dropped due to toxicity, 4 due to peripheral neuropathy, and 1 because of painful fingernail beds
Markman et al[94]	Weekly paclitaxel 80 mg/m²	48	21	Grade 3 neuropathy: 4%; grade 3 fatigue: 8%
Kita et al[95]	Paclitaxel 80 mg/m²/week in 1-h infusion, 3 weeks on, 1 week off, and repeated at least twice	37 total 14 resistant	29	Neutropenia 24%
Kaern et al[96]	Weekly paclitaxel 80 mg/m²/h infusion	57	56	Grade 2 neutropenia 2 patients
Rosenberg et al[97]	Weekly paclitaxel 67 mg/m² vs 3 weekly Paclitaxel 200 mg/m²	208	Similar efficacy in two arms	Grade 3–4 hematological and non-hematological toxicity occurred more frequently in 3-weekly arm
Havrilesky et al[98]	Carboplatin AUC 2 and paclitaxel at 80 mg/m² on days 1, 8, and 15 on a 28-day cycle	28 Total 8 Resistant	38	Neutropenia 32%

Source: Kumar et al., *International Journal of Women's Health* 2010

AURELIA study: platinum-resistant ovarian cancer

- Adding bevacizumab to chemotherapy statistically, significantly improved PFS and ORR
  - Chemotherapy included paclitaxel, PLD, and topotecan
  - OS trend was not significant
  - No new safety signals were observed

	Chemo* + Placebo (n=182)		Chemo* + Avastin (n=179)
ORR	11.8%		27.3%
mPFS, months	3.4		6.7
HR		0.48	
p-value		<0.001	
mOS, months	13.3		16.6
HR		0.85	
p-value		<0.174	

From a commentary on the AURELIA study

- No significant difference between the high and low doses of bevacizumab, indicating that dose regimens may not alter the association of bevacizumab with risk of fatal adverse effects
- Treatment with bevacizumab in combination with taxanes resulted in more toxic effects than bevacizumab combined with other agents
- Use of bevacizumab significantly increased the risk of GI perforation when used in conjunction with taxanes

Source: Pujade-Lauraine, et al., *Obstetrical & Gynecological Survey* 2014; Tomao, et al., *Journal of Clinical Oncology* 2014

Competitive landscape in platinum-resistant OC

Many, many PARP Inhibitors

- AbbVie's Veliparib: 20% ORR; mPFS 8.18 mo + SAEs (22% pts discontinued) (Ph3 by Apr 2019)
- AstraZeneca's Olaparib: 30% ORR (n=81), mDOR 5 mo, mPFS 5.5 months; 3rd line mBRCA+ pts
- Clovis's Rucaparib: 25% ORR (n=20); mBRCA+ pts; 46.9% >= 3 AEs (10% pts discontinued)
- Tesaro's Niraparib + anti-PD1: 20.7% ORR (n=23); high grade AEs (Ph3 started in 2H18)

AstraZeneca's Cediranib (VEGF inhibitor)

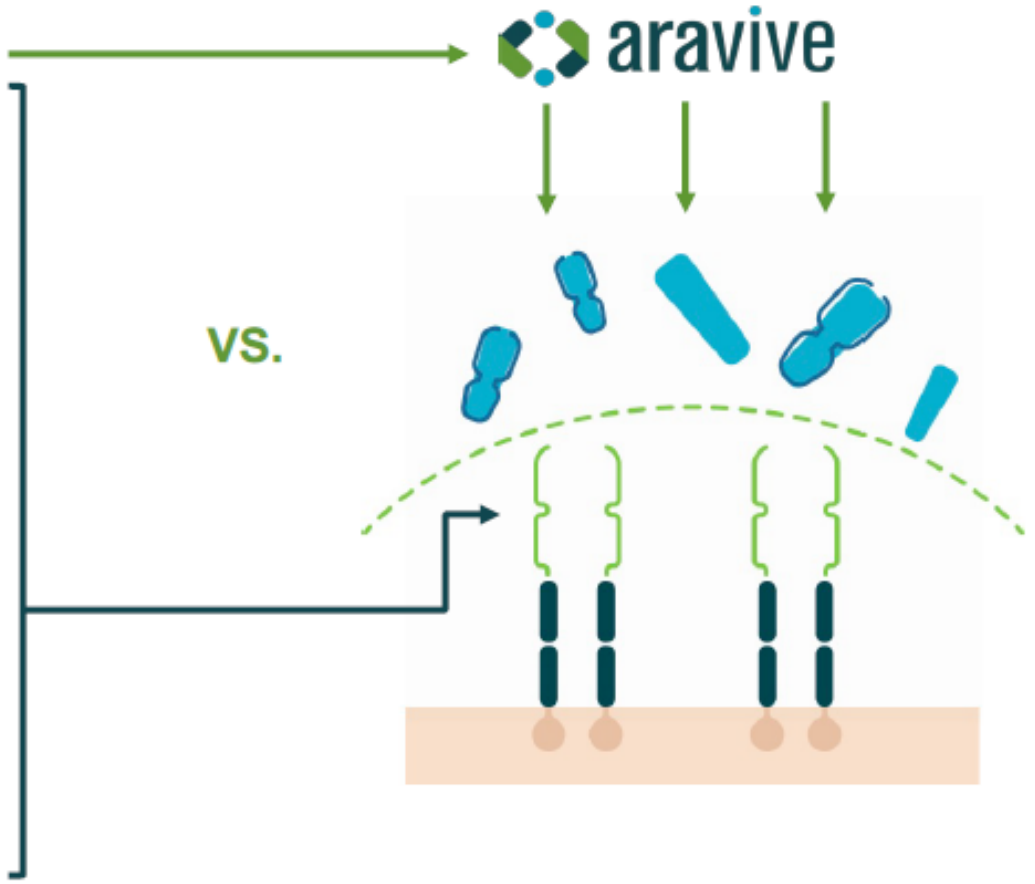
- 17% ORR + many AEs (dose-reduction reported in 63% of pts)
- Ph2b: Cediranib + Olaparib (a PARP inhibitor)
  - 100 patients non-gBRCA+ disease
  - ORR primary endpoint, to be completed in 2019

Immunogen's Mirvetuximab (ADC targeting folate receptor alpha)

- Monotherapy: 30% ORR, mDOR 4.4 mo, mPFS 4.3 mo, low grade AEs
- Mirve + anti-PD1 [P1b/II]: 30% ORR (n=54), mDOR 6.9 mo, mPFS 4.2 mo, grade 2 or lower AEs

Competitive landscape of AXL inhibitors

Drug (Stage)	Company	Target	Selective for AXL
AVB-500 (Ph Ib/II)	**Aravive**	**GAS6**	**YES**
Gilterinib (Market)	Astellas	AXL	NO
Cabozantinib (Market)	Exelixis	AXL	NO
Sitravatinib (Ph III)	Mirati (BeiGene)	AXL	NO
Merestinib (Ph II)	Lilly	AXL	NO
BGB324 (Ph II)	BergenBio	AXL	NO
S49076 (Ph i/II)	Servier	AXL	NO
TP-0903 (Ph I/II)	Tolero (Sumitomo)	AXL	NO
BPI-9016M (Ph I)	Betta Pharmaceuticals	AXL	NO
ONO-7475-01 (Ph I)	Ono Pharmaceuticals	AXL	NO
RXDX-106 (Ph I)	Ignyta	AXL	NO

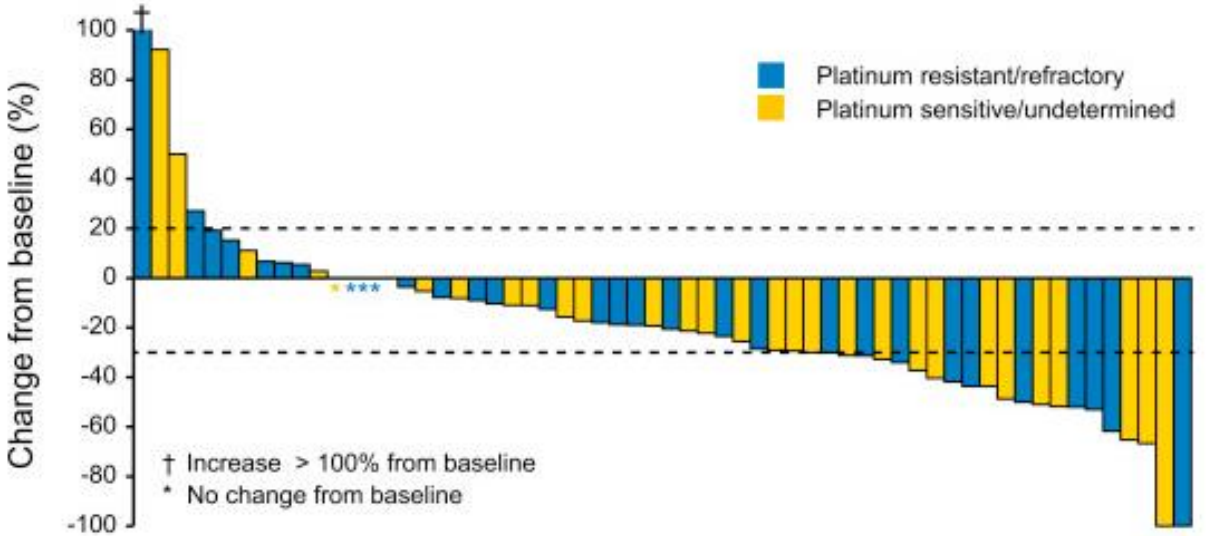


Source: Aravive corporate presentations

Competitors target AXL receptor instead of GAS6

Exelixis's Cabozantinib

- Only marketed AXL inhibitor
  - For liver, kidney, & thyroid cancers
  - Expanding into other indications: GU, GI, thyroid, lung, gynecologic cancers…
- Small molecule inhibits receptor tyrosine kinases (AXL, RET, VEGFR2, FLT3, MET)
  - Black box label: uncontrolled bleeding - risk of holes forming in stomach or intestine,
  - Risk of clots - heart attack or stroke
- Discontinued Ph2 monotherapy in Ovarian: 20% ORR in prOC pts (n=35) -- inferior to SOC ref



Safety issues could be a reason why Aravive is not pursuing its lead as a monotherapy

BerGenBio's Bemcentinib (BGB324): small molecule AXL specific inhibitor (low nM)

- Ph2 trials for NSCLC, TNC, AML/MDS, melanoma, & metastatic pancreatic cancer
- BGB324 monothereapy in R/R AML/MDS: 43% ORR
- BGB324 + Keytruda in NSCLC: 40% ORR

BerGenBio's BGB149: anti-AXL antibody in Ph1 (500 pM)

- WT GAS6 (33 pM) will outcompete this Ab

Source: Vergote et al., *European Journal of Cancer* 2017

Comparator company valuations

BGBIO stock price jumped ~100% upon ph2 success

Aravive (public American biopharma developing Axl decoy)

- Market cap: $80M

BerGenBio (public Norwegian biopharma developing Axl inhibitors)

- Bemcentinib (small molecule inhibitor) in phase 2 clinical trials
  - NSCLC, TNBC, AML, melanoma
- Market cap: NOK 1.34B (or $160M)

Immunogen (public American biopharma developing ADCs for ovarian cancer)

- Mirvetuximab soravtansine (IMGN853, ADC) in phase 2 clinical trials
  - Did not meet primary endpoint in PFS as a monotherapy in ph3
  - Currently being evaluated as a combination therapy in ph2
- Market cap: $410M

IMGN stock priced dropped 50% upon ph 3 failure

Exelixis (public American biopharma)

- Cabozantinib in phase 2 clinical trial for OC (discontinued)
  - Also going after numerous other indications in phase 1-3 clinical trials
- Market cap: $7.1B

Backers

Srinivas Akkaraju (chairman)
Managing partner at Samsara BioCapital
Formerly general partner at Sofinnova and managing director at New Leaf

Funds

- New Leaf ($3,417,000, 0.94% of portfolio)
- Samsara ($1,558,000, 1.50% of portfolio)
- Baker Bros ($1,423,000, 0.01% of portfolio)
- Blackrock ($621,000, 0.00% of portfolio)
- Stanford University ($516,000, 0.06% of portfolio)
- Renaissance Technologies ($454,000, 0.00% of portfolio)

Lack of analyst coverage

- Unknown company on the market

Review

	Phase 1b	Phase 2
Base case	Similar safety as SOC chemotherapy	Equivalent efficacy to SOC ORR 12% mPFS of 3.4 mo mOS of 33 mo
Best case	No SAEs Early indication for efficacy	Performs similar or better to Avastin + chemo, but without AEs ORR >27% mPFS of >6.7 mo mOS of >33 mo
Supporting notes	Substantial data acquired from phase 1 • No AEs for Axl decoy alone • Axl decoy demonstrates Gas6 suppression Non-clinical, ex vivo analysis of patients • Increased Gas6 levels associated with chemoresistance and decreased PFS	Ph1b will require some predictions on efficacy with expansion cohorts, as well as to explore the efficacy endpoints of Gas6/Axl expression in patient populations.

Upcoming catalysts

3rd Quarter 2019

- AVB-S6-500 – Phase 1b initial safety data in patients with platinum-resistant ovarian cancer

2nd Half 2019

- AVB-S6-500 – First patient enrolled in Phase 2 in patients with platinum-resistant ovarian cancer
- AVB-S6-500 – Initiate Phase 1b trial in IgA Nephropathy
- AVB-S6-500 - First patient enrolled in Phase 1b/2 in patients with clear cell renal cell carcinoma

Risks

[Efficacy]	Potentially no significant effect on ORR and mPFS of AXL suppression + chemo
[Safety]	Potential AEs as a result of AXL suppression in healthy tissues
[Scientific]	No proof that Axl inhibition is responsible for clinical effect
[Volatility]	Low trading volume.
[Dilution]	Low cash reserves, will need to raise funds for ph2
	Filed a $20M ATM offering that can happen anytime
	Will probably raise $ sometime after announcing ph1b safety data

Recommendation

- Invest 5% of fund
- If ph1b results are positive (i.e. consistent safety profile and/or good early efficacy):
  - Very likely due to current safety data in healthy volunteers and high doses in monkeys
  - Re-evaluate:
    - Sell 50% of position
    - Hold until ph2 topline data

Post-diligence, post-decision information

Stop here! What is your assessment of the diligence and recommendation?

- How thorough was the diligence? What was the most useful material?
- What lingering questions do you have? How can you answer these?
- What is your risk assessment on the investment opportunity?
- Do you agree with the recommendation? Were exit opportunities clear?

Make a rational and calculated decision on whether to invest…

- How will you keep an eye on the stock price?
- What could happen between now and your exit points?
- What is your expected return? What is your stop loss?

Stock performance over 7 mo.

Source: Yahoo Finance

Efficacy outcomes to date from Phase 1b study

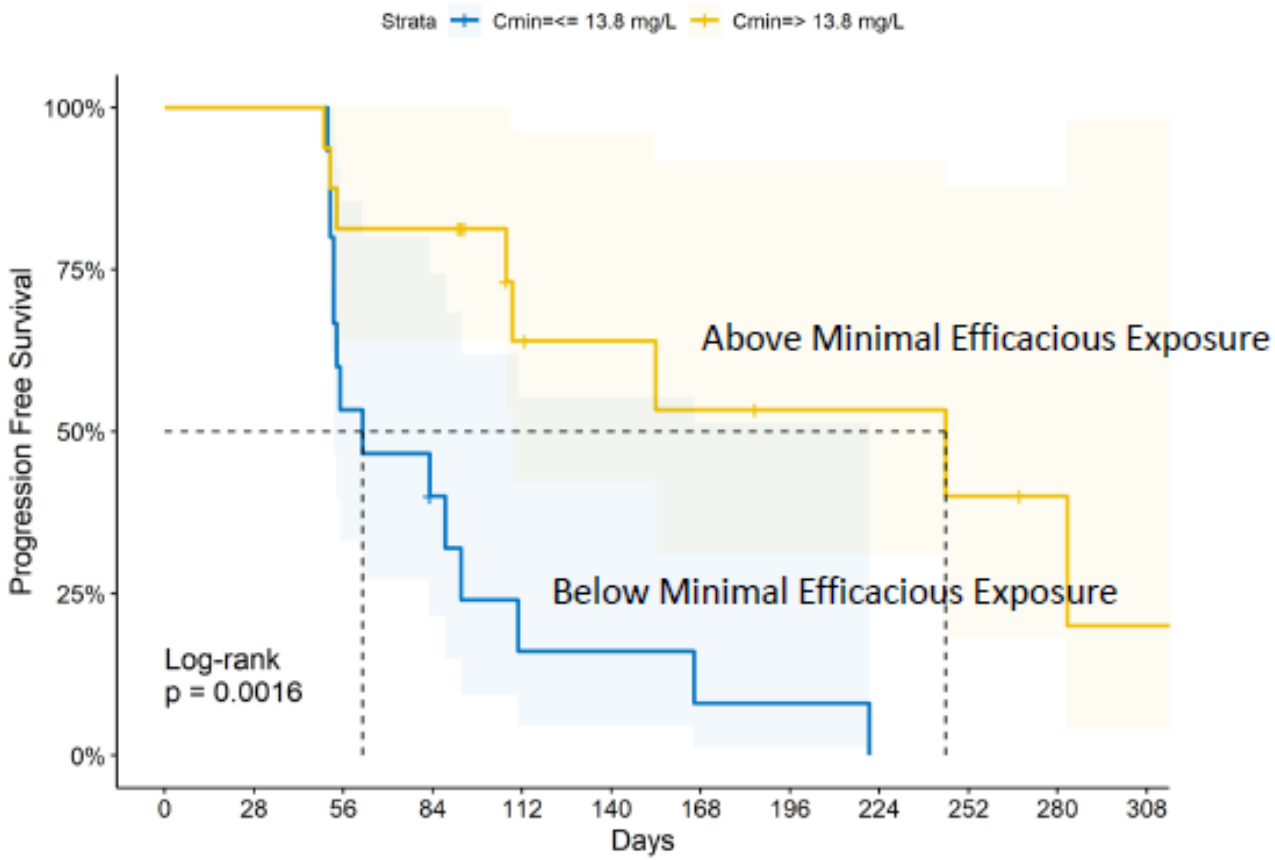
	31 Patients	First 12 Patients	Next 19 Patients
Complete Response (CR) + Partial Response (PR)	7 (22%)	5 (42%)	2 (10%)
Stable Disease (SD)	13 (42%)	2 (16%)	11 (58%)
CBR (SD+CR+PR)	20 (64%)	7 (58%)	13 (68%)
Progressive Disease (PD)	11 (35%)	5 (42%)	6 (32%)

Response Determined by Investigator-Assessed RECISTv1.1

Source: Aravive corporate presentations

Sufficient AVB-S6-500 exposures at 10 mg/kg

- mPFS will be the primary endpoint for platinum-resistant ovarian cancer trials
- mPFS for platinum-resistant ovarian cancer patients given PAC or PLD is 3-4 mo, but only 6-8 weeks in patients with platinum free interval of less than 3 mo and/or on 3rd or greater lines of therapy
- Observed a 4-fold increase in mPFS (2 mo to 8 mo)



Source: Aravive corporate presentations

Exposure-response analysis at 10 mg/kg

- Sufficient exposures doubled ORR, clinical benefit rate, and duration of response
- Response rate in below minimal efficacious exposure patients is consistent with historical control rates of 10-15% with PAC or PLD

	Above Minimal Efficacious Exposure	Below Minimal Efficacious Exposure
Number of Patients (n)	17	14
Complete Response (CR)	1 (6%)	0
Partial Response (PR)	4 (24%)	2 (14%)
Overall Response Rate (ORR)	5 (29%)	2 (14%)
Stable Disease (SD)	9 (53%)	4 (28%)
Clinical Benefit (SD+ORR)	14 (82%)	6 (43%)
Median DOR (months)	7.6	3.9
Median PFS (months)	8.1	1.8
Progressive Disease (PD)	3 (18%)	8 (57%)
Patients remaining on study as of Oct 31 2019	8 (47%)	0

Best Response Determined by Investigator-Assessed RECIST 1.1

Source: Aravive corporate presentations

Comparable demographics and baseline characteristics

	Above Minimal Efficacious Concentration	Below Minimal Efficacious Concentration
Age, years median (min, max)	71 (52-82)	63.0 (53-80)
Prior lines*		
1 (%)	6 (35.3%)	2 (14.3%)
2 (%)	8 (47.1%)	6 (42.9%)
3 (%)	3 (17.6%)	5 (35.7%)
Platinum Free Interval		
≥ 3mo	11 (64.7%)	8 (57.1%)
< 3mo	6 (35.3%)	6 (42.9%)
ECOG		
0	11 (64.7%)	6 (42.9%)
1	6 (35.3%)	8 (57.1%)

Source: Aravive corporate presentations