

ACRIVON PREDICTIVE PRECISION PROTEOMICS (AP3)

OVERCOMING LIMITATIONS OF GENETICS-BASED PRECISION MEDICINE

## **CORPORATE R&D EVENT**

APRIL 24, 2024

#### FORWARD-LOOKING STATEMENTS

Certain information contained in this presentation includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 regarding our future results of operations or financial condition, business strategy and plans and objectives of management for future operations. In some cases, you can identify forward-looking statements because they contain words such as "anticipate," "believe," "contemplate," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "will," or "would" or the negative of these words or other similar terms or expressions. Our forward-looking statements are based primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition and results of operations. The outcome of the events described in the forward-looking statements is subject to risks and uncertainties, including the factors described in our filings with the U.S. Securities and Exchange Commission. New risks and uncertainties emerge from time to time, and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this presentation. The results, events, and circumstances reflected in the forward-looking statements may not be achieved or occur, and actual results, events, or circumstances could differ materially from those described in the forward-looking statements.

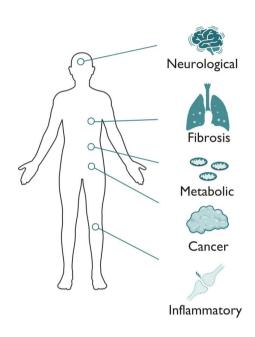
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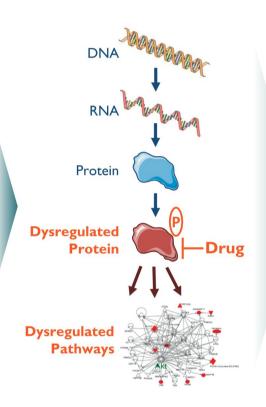
## OUTLINE

•	Acrivon Therapeutics and AP3 overview	5 minutes
•	Initial ACR-368 Phase 2 trial data	25 minutes
•	AP3-based drug design: Dual WEE1/PKMYT1 inhibitor ACR-2316 and pipeline	20 minutes
•	AP3 Interactome	5 minutes
•	Live Q&A	20 minutes

For a comprehensive corporate deck, please visit: <a href="https://Acrivon.com">https://Acrivon.com</a>

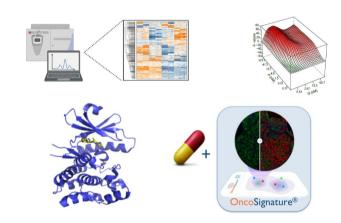
## ACRIVON THERAPEUTICS - A NEXT-GENERATION PRECISION MEDICINE COMPANY



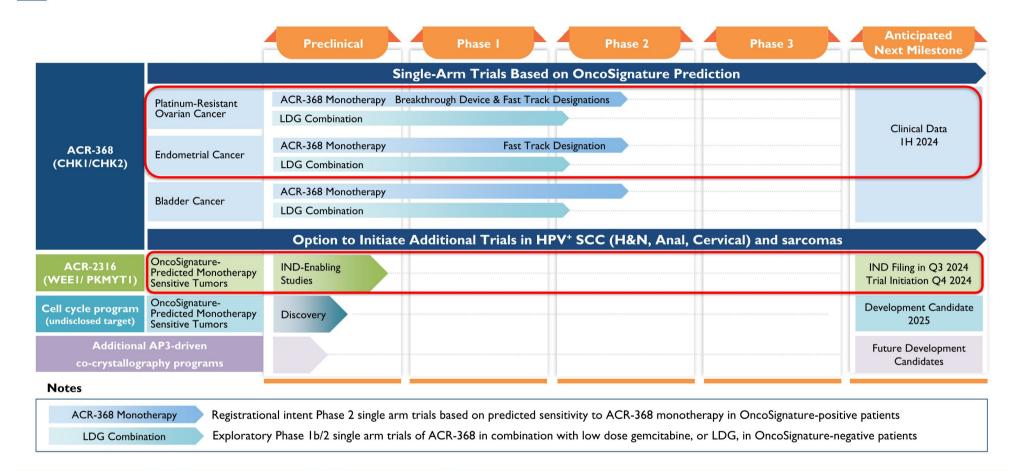


#### **Acrivon Predictive Precision Proteomics (AP3)**

- Enables an exact match between the disease-driving, dysregulated pathways with a drug's mechanism of action (Acrivon meaning ≈ exact, accurate)
- Broadly applicable in R&D (biological SAR, resistance, patient responders); leveraged for internal pipeline



### **ACRIVON PIPELINE**

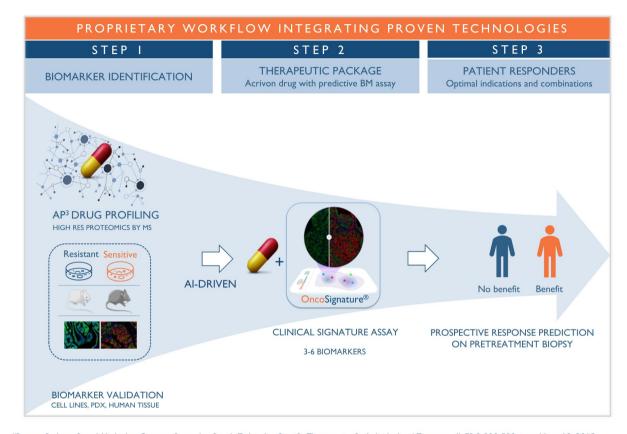


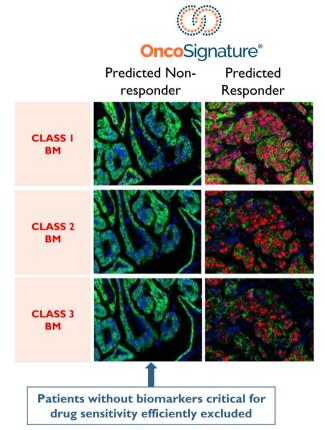
### ACRIVON THERAPEUTICS - OVERVIEW

- Next-generation precision medicine; Foundational team pioneers in phosphoproteomics-based R&D
- AP3-based prospective patient responder identification
  - Acrivon in-licensed ACR-368 (Prexasertib) a Lilly flagship program (durable single agent activity across solid cancers, genomics insufficient for patient selection) with 3 key objectives
    - 1. Increase ORR in ovarian cancer using ACR-368 OncoSignature
    - 2. Identify and verify robust clinical activity in new indications (AP3 profiling)
    - 3. Validate our AP3 approach on a challenging drug to provide read through to other drugs (internal pipeline or external)
  - Initial data demonstrate POC for these objectives
- AP3 applied for drug discovery ACR-2316 and early pipeline
  - AP3 has generated a potent, single agent active WEE1/PKMYT1 development candidate (Biological SAR)
  - Specifically designed for clinical monotherapy development aiming for accelerated pathway
  - ACR-2316 OncoSignature being generated for indication finding prior to clinical development
  - AP3 has enabled streamlined preclinical development and accelerated timelines (IND filing now expected in Q3, 2024)
  - New potential first-in-class cell cycle program for an undisclosed target initiated following the same AP3 approach
- AP3 interactome
  - Proprietary, integrated, ML-enabled compound profiling data (~50 million datapoints/2 wk)
  - Version I.I.I of AP3 interactome completed to be applied for AI-based drug discovery and development

Initial data from the ACR-368 prospective patient selection Phase 2 clinical trial in gynecological cancers

#### AP3 PLATFORM: DRUG RESPONSE PREDICTION IN INDIVIDUAL PATIENTS

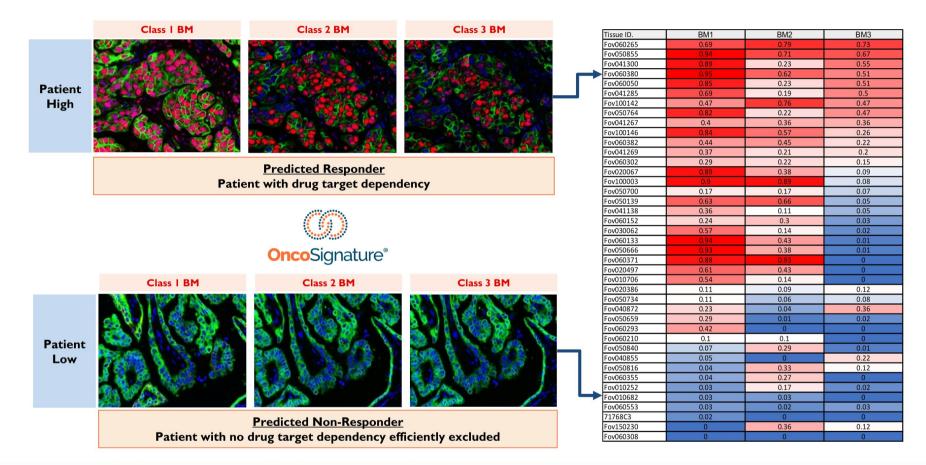




"Disease Pathway-Based Method to Generate Biomarker Panels Tailored to Specific Therapeutics for Individualized Treatments": EP 2 229 589, issued June 10, 2015; US2017/0067877A9, pending. OncoSignature® is a Registered Trademark: US Reg. No. 5,718,472; Int. Cl. 5, 42. Intl. Reg. 1382289

ACRIVON THERAPEUTICS (1)

## ACR-368 ONCOSIGNATURE PREDICTION OF DRUG SENSITIVITY: BIOMARKER QUANTITATION ACROSS HUMAN CANCER PATIENT SAMPLES



## THERAPEUTIC BAR FOR HIGH GRADE PLATINUM-RESISTANT OVARIAN AND ENDOMETRIAL CANCER NEW APPROVALS

- Platinum-resistant ovarian cancer:  $\geq 2^{nd}$  line SOC\*  $\sim 12\%$  ORR. mDoR 3.7 5.7 months
  - Mirvetuximab: Post I-3 prior lines, FRa-high PROC (~35% of patients; ORR ~35%, PFS = 5.6 months)
  - ~85% of patients with PROC do not benefit from mirvetuximab
- High grade endometrial cancer: ≥3<sup>rd</sup> line SOC\*\* ~9% ORR, mDoR 3.1 months
- ACR-368 clinical activity (without patient selection) in past platinum-resistant ovarian trials: ~12% ORR, mDoR >5.6 months
  - (BRCA-mutant and BRCA wild type patients regardless # lines of prior therapy; Lilly-sponsored 46-center, 8-country, N=169 patient study)^
- TPP high grade PROC: ≥25% ORR with CI lower bound >15%
- TPP high grade endometrial cancer: ≥20-25% ORR with CI lower bound >15%

<sup>\*</sup> Aurelia trial: Pujade-Lauraine E et al, JCO (2014); Corail trial: Gaillard S et al, JCO (2016)

<sup>\*\*</sup> Ray-Coquard I et al, BJC (2013)

<sup>^</sup> Konstantinopoulos P et al, Gyn Oncol. (2022)

## ACR-368-201 STATUS - OVARIAN AND ENDOMETRIAL (LOCKED ONCOSIGNATURE THRESHOLDS, PROSPECTIVE TRIAL)

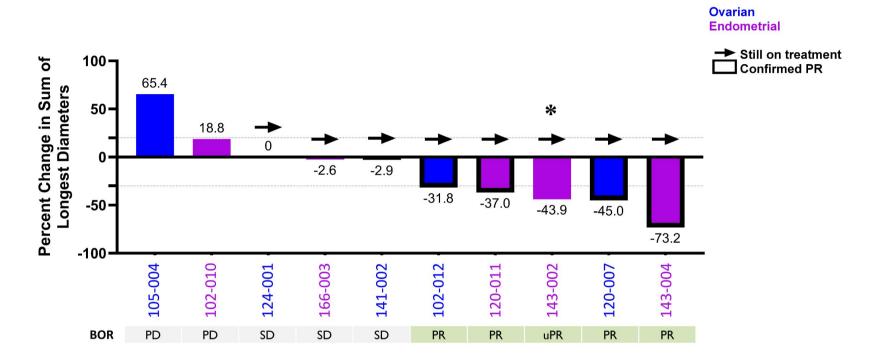
OncoSignature-positive OncoSignature-negative ACR-368 RP2D (105 mg/m<sup>2</sup>) ACR-368 RP2D (105 mg/m<sup>2</sup>) + ULDG RP2D (10 mg/m<sup>2</sup>) Registrational intent Phase 2 **Exploratory Phase IB/2** OncoSignature-Patients enrolled Patients enrolled Negative (N = 31)(N = 61; incl. 7 to be dosed)OncoSignature-Positive Patients who received at least one dose Patients who received at least one dose (N = 26)(N = 41)21 patients 13 patients awaiting awaiting 8-week scan 8-week scan OncoSignature-positive rate =34%, Patients with at least the 8-wk scan Patients with at least the 8-wk scan consistent with predicted ~35% based on (N = 10)(N = 16)patient tumor sample OncoSignature screening prior to clinical trial Patients currently on study Patients currently on study

(N = 28)

Data cut as of April 1, 2024

(N = 21)

#### ONCOSIGNATURE+ GYN PATIENTS - TUMOR SHRINKAGE (LOCKED THRESHOLDS, PROSPECTIVE EVALUATION PER PROTOCOL)



\*Since data cut off, the one unconfirmed PR has been confirmed bringing the total confirmed PRs to 5

BOR = Best overall response

#### ONCOSIGNATURE-POSITIVE PHASE 2 MONOTHERAPY GYN SUMMARY-PROSPECTIVE DATA WITH LOCKED THRESHOLDS

		Ovarian	Endometrial	Total
OncoSignaturo	PR (confirmed)	2	3	5
OncoSignature Positive (Arm 1)	SD	2	1	3
Positive (AIIII 1)	PD	1	1	2
	Total	5	5	10
	ORR	40%	60%	50%

-Ovarian: The 95% CI<sup>^</sup> for ORR = (12%, 77%). For reference, ovarian SOC ~12%.

-Endometrial: The 95% CI<sup>^</sup> for ORR = (23%, 88%). For reference, endometrial SOC ~ 9%

All 5 confirmed responders on treatment; median DoR not reached

^ Agresti-Coull

## ACR-368 ONCOSIGNATURE PROSPECTIVELY PREDICTS SENSITIVITY TO MONOTHERAPY IN ONGOING PHASE 2 TRIAL

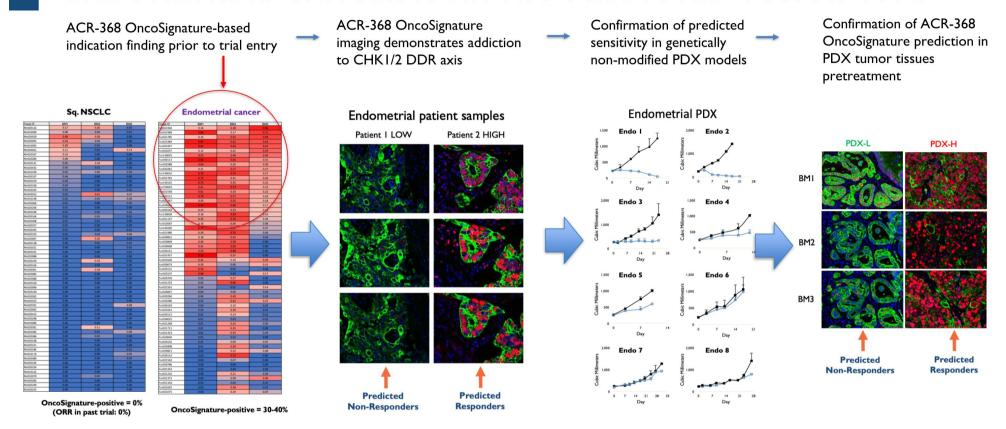
ORR	BM+ (ARM I) ACR-368 monotherapy	BM- (ARM 2) ACR-368 + ULDG	Patients (N)
Ovarian	40% (2/5)	0% (0/11)	16
Endometrial	60% (3/5)	0% (0/5)	10
Combined	50% (5/10)	0% (0/16)	26

P value (confirmed PRs) = 0.0038

#### Notes:

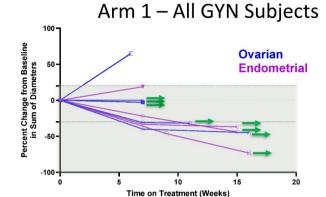
- (non-parametric bootstrap simulation and Fisher test BM+ vs BM-)
- ORR in ovarian all-comer = 12.5%, which is consistent with JTJN study (12%)

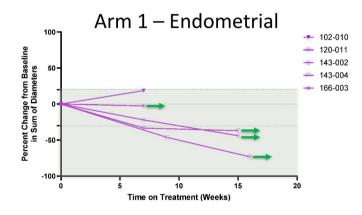
#### ENDOMETRIAL CANCER IS AN AP3-PREDICTED TUMOR TYPE

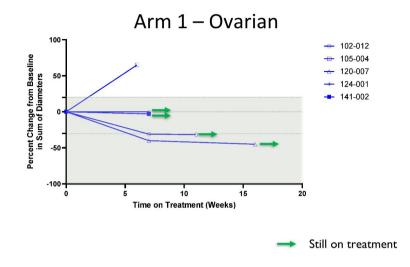


in >1,000 cancer patients treated with ACR-368 in Lilly-sponsored trials, endometrial cancer was not tested

### ONCOSIGNATURE+ (ARM I) SPIDER PLOTS - LOCKED THRESHOLDS







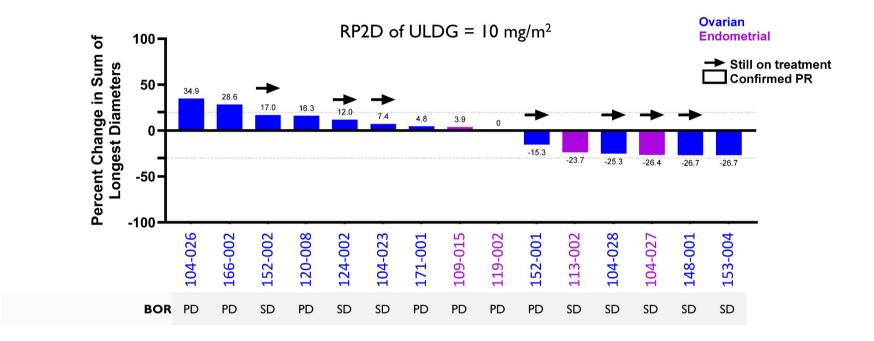
Note: mDoR established in past Phase 2 ACR-368 monotherapy RP2D trials (>200 patients) is between 5.6 months to >10 months (Konstantinopoulos et al, Gyn Oncol (2022); Lee et al, Lancet Oncology (2018))

## ONCOSIGNATURE-NEGATIVE SUMMARY (GYN INDICATIONS) - PROSPECTIVE DATA WITH LOCKED THRESHOLDS

Clear ULDG sensitization and activity (see waterfall plot), but no PRs to date with locked thresholds

		Ovarian	Endometrial	Total
OncoSignaturo	PR			
OncoSignature Negative (Arm 2)	SD	6	2	8
Negative (AIIII 2)	PD	5	3	8
	Total	11	5	16
	ORR	0%	0%	0%

#### ONCOSIGNATURE-NEGATIVE (ARM 2)- BEST OVERALL RESPONSE (LOCKED THRESHOLDS, PROSPECTIVE EVALUATION)



BOR = Best overall response; One PD subject censored for lack of target lesion data points available in EDC

### TREATMENT-RELATED ADVERSE EVENTS BY INDICATION -ONCOSIGNATURE-POSITIVE (ARM I)

Treatment-related AEs in >15% of subjects, locked thresholds; RP2D (ACR-368 105 mg/m²)

ARM 1	Endometrial N = 7		Ovarian N = 14		Urothelial N = 2		ALL (Arm 1) N = 23	
	All	Gr 3/4	All	Gr 3/4	All	Gr 3/4	All	Gr 3/4
Anemia	2 (29)	2 (29)	8 (57)	2 (14)	1 (50)	0 (0)	11 (48)	4 (17)
Fatigue	2 (29)	1 (14)	3 (21)	0 (0)	1 (50)	0 (0)	6 (26)	1 (4)
Nausea	3 (43)	0 (0)	2 (14)	0 (0)	2 (100)	0 (0)	7 (30)	0 (0)
Thrombocytopenia	0 (0)	0 (0)	2 (14)	2 (14)	0 (0)	0 (0)	2 (9)	2 (9)
Neutropenia	0 (0)	0 (0)	1 (7)	1 (7)	0 (0)	0 (0)	1 (4)	1 (4)
Febrile Neutropenia	0 (0)	0 (0)	2 (14)	2 (14)	0 (0)	0 (0)	2 (9)	2 (9)

Data represented as number of subjects (% of subjects); Non-QC'd data, as of 8 March 2024

AE profile predominantly heme, consistent with previous monotherapy trials at RP2D

### TREATMENT-RELATED ADVERSE EVENTS BY INDICATION -ONCOSIGNATURE-NEGATIVE (ARM 2)

Treatment-related AEs in >15% of subjects, locked thresholds, RP2D (ACR-368 105 mg/m²; ULDG = 10 mg/m²)

ARM 2	Endometrial N = 11		Ovarian		Urothelial		ALL (Arm 2, 10 mg/m² Gem)	
			N = 22	N = 22		N = 5		N = 38
	All	Gr 3/4	All	Gr 3/4	All	Gr 3/4	All	Gr 3/4
Anemia	2 (18)	2 (18)	10 (45)	3 (14)	3 (60)	1 (20)	15 (39)	6 (16)
Fatigue	1 (9)	0 (0)	9 (41)	2 (9)	1 (20)	0 (0)	11 (29)	2 (5)
Nausea	1 (9)	0 (0)	6 (27)	0 (0)	1 (20)	0 (0)	8 (21)	0 (0)
Thrombocytopeni	a 2 (18)	1 (9)	3 (14)	2 (9)	4 (60)	2 (40)	9 (24)	5 (13)
Neutropenia	0 (0)	0 (0)	5 (23)	5 (23)	3 (60)	3 (60)	8 (21)	8 (21)
Febrile Neutroper	nia 1 (9)	1 (9)	4 (18)	4 (18)	1 (20)	1 (20)	6 (16)	6 (16)

Data represented as number of subjects (% of subjects); Non-QC'd data, as of 8 March 2024

AE profile predominantly heme, consistent with previous monotherapy trials at RP2D

#### **Active Pharmaceutical Ingredient**



- Registration and validation campaigns complete with release of all batches
- 21.9 kg of GMP API in stock (enough for >100k doses)

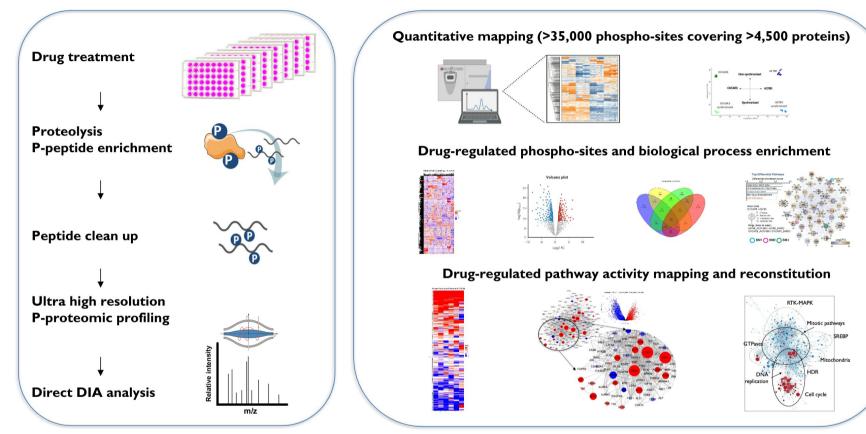
#### **Drug Product**



Registration campaign complete with all three batches released and yield ~95%

## AP3-based drug design: ACR-2316, a potential first-inclass, dual WEEI/PKMYTI inhibitor and pipeline

#### STREAMLINED AP3-BASED BIOLOGICAL SAR OPTIMIZATION FOR SINGLE AGENT ACTIVITY OF PRECLINICAL PROGRAMS



High resolution and throughput MS-based P-proteomics

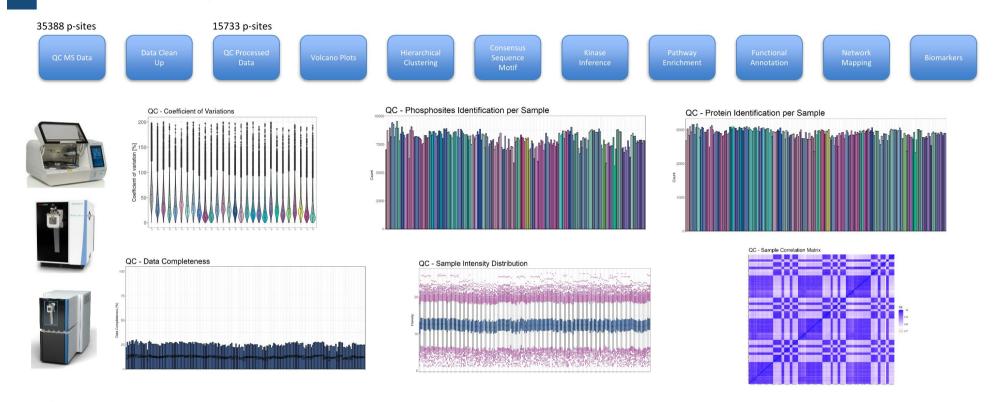
Proprietary pipe for automated AP3 analyses with actionable results

Week 2

Week 0

Turnaround <2 weeks

#### AP3: TIGHT, HIGH-RESOLUTION DATA WITH DEEP COVERAGE



- Acrivon proprietary compound data (~50 million data points per experiment); dozens of compounds profiled
- Miniaturized, high throughput, scalable: <2 weeks turn-around, automated AI computational analyses in I day
- Actionable results: Resistance mechanisms, rational combinations, drug-tailored OncoSignature patient selection

## ACR-2316 -UNIQUELY ENABLED BY AP3 TO OVERCOME LIMITATIONS OF CURRENT WEEL AND PKMYTI INHIBITORS

#### Program goals:

- Superior single agent activity (AP3)
  - AP3-guided design to overcome WEE1 and PKMYT1 single inhibitor resistance through balanced dual inhibition
- High selectivity and potency (co-crystallography)
  - Structure-guided design to limit adverse events (AEs) to be on-target, transient, mechanism-based
- Streamlined clinical development (ACR-2316 OncoSignature)
  - To identify/prioritize sensitive indications prior to clinical start and for drug target engagement-based dose optimization

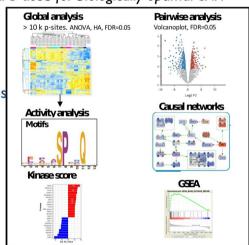
#### ACR-2316: Rationally designed WEE1/PKMYT1 development candidate

- ✓ AP3-based SAR from >40 co-crystals (1.5-3.1 Å) of novel WEE1/PKMYT1-selective series
- ✓ 5-20-fold more potent in preclinical models than clinical benchmarks
- ✓ Superior anti-tumor efficacy with complete tumor regression across models
- ✓ High selectivity ensures transient, short-lived, mild AEs
- ✓ Potent WEEI inhibition, balanced PKMYTI inhibition, overcomes resistance

#### Co-crystallography for drug design and selectivity



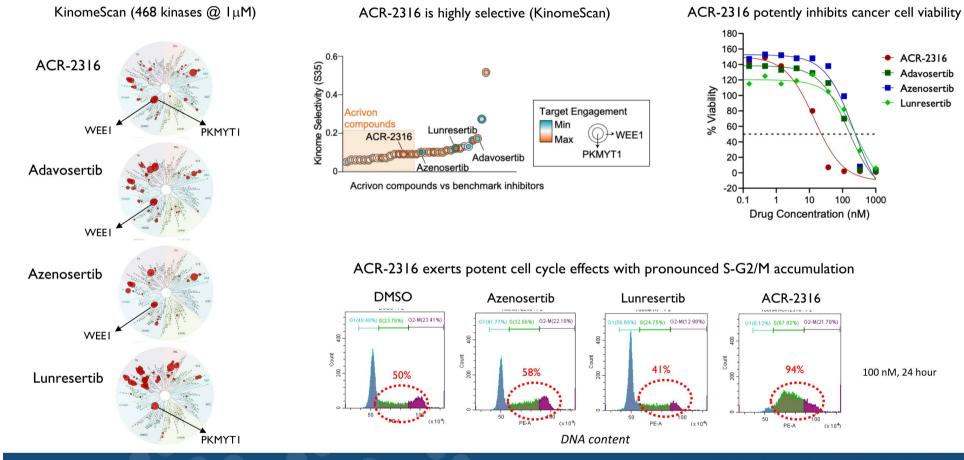
#### AP3 used for biologically optimal SAR



# ACR-2316 SHOWS ATTRACTIVE PROFILE IN ONGOING PRECLINICAL STUDIES

Relative performance	WEEI cellular drug target engagement	PKMYTI cellular drug target engagement	Kinome selectivity	Human tumor cell viability	In vivo efficacy
ACR-2316	++++	++	++++	++++	++++
Adavosertib	++	-	++	+++	++
Azenosertib	++	-	+++	++	++
Debio0123	+	-	++++	+	+
Lunresertib	-	+++	+	+	+

## DUAL WEEI/PKMYTI INHIBITOR ACR-2316 DEMONSTRATES STRONG POTENCY AND SELECTIVITY



27

ACR-2316

Adavosertib

 Azenosertib Lunresertib

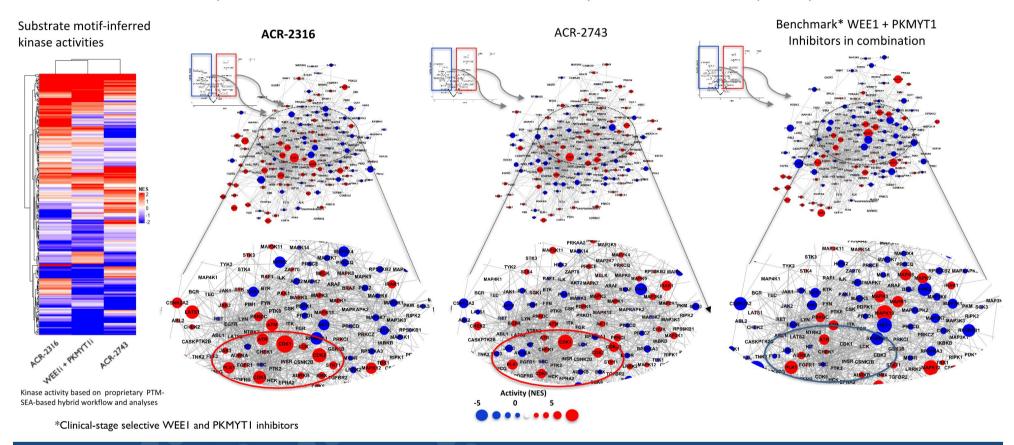
1000

100 nM, 24 hour

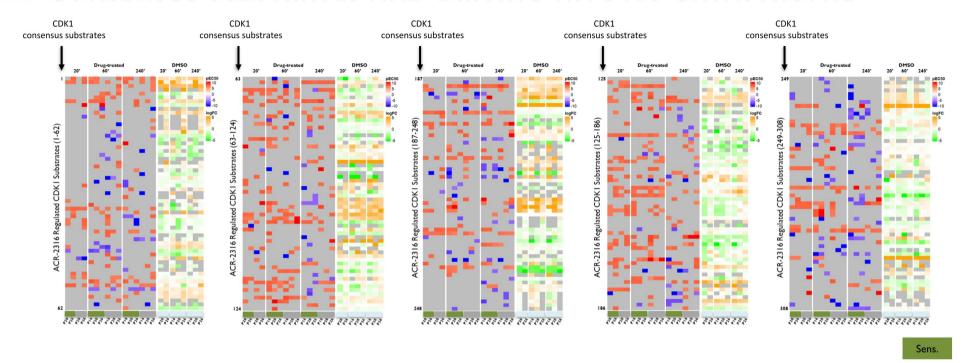


# OPTIMIZED DUAL INHIBITORS SHOW DESIRABLE PATHWAY EFFECTS

Optimized dual WEE1 and PKMYT1 inhibitors affect cell cycle and canonical MAPK pathways in desirable manner



## ACR-2316 POTENTLY ACTIVATES CDKI, REGULATING >300 CDKI CONSENSUS SUBSTRATES AND DRIVING MITOTIC CATASTROPHE



• Unbiased quantitation of ACR-2316-regulated CDK1 substrate p-sites (308) in intact cells based on CDK1 consensus recognition motif (Acrivon proprietary hybrid database approach) across multiple experiments

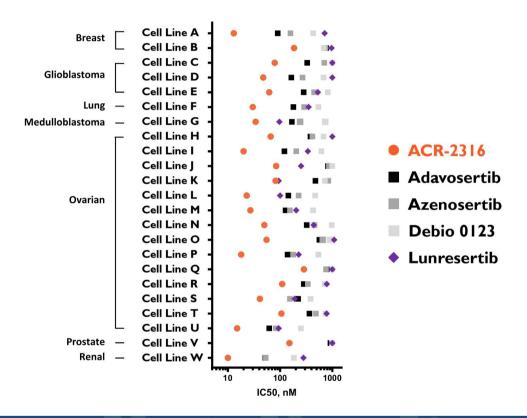
DMSO

Res.

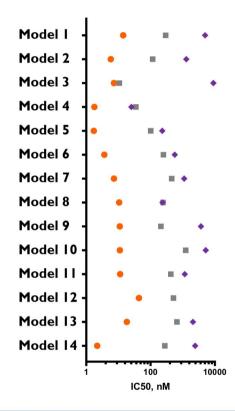
• Actionable insight into drivers of mitotic catastrophe and on-target CDK1-driven pathways

## ACR-2316 IS HIGHLY POTENT ACROSS HUMAN TUMOR CELL LINES AND PATIENT-DERIVED EX VIVO TUMOR MODELS

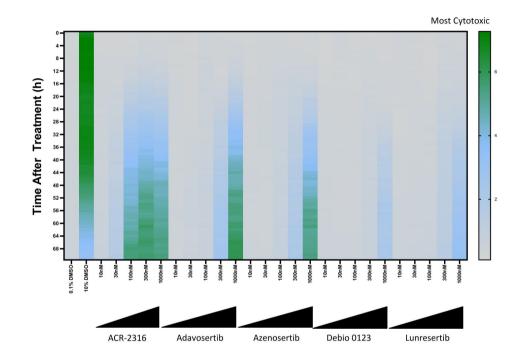
#### Human tumor cell lines

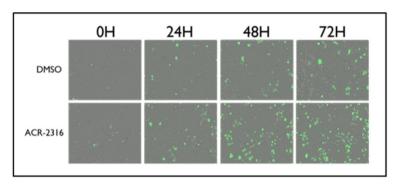


#### Patient-derived ex vivo tumor models



## ACR-2316 INDUCES POTENT CELL DEATH COMPARED TO BENCHMARK WEEL AND PKMYTI INHIBITORS

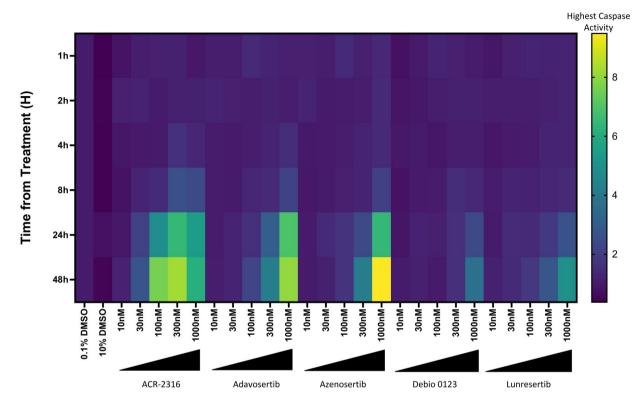




Representative images of human tumor cells treated with 100 nM ACR-2316 vs control vehicle (green fluorescence = dead cells

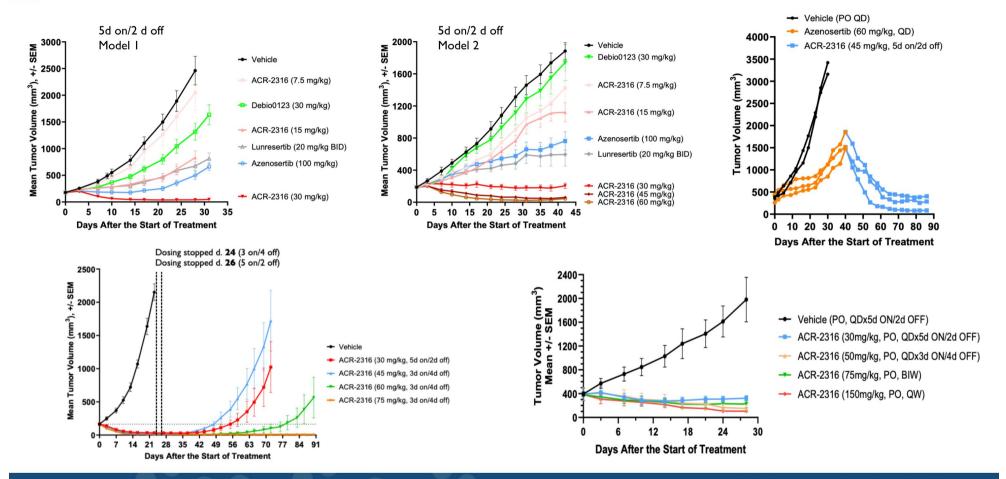
CellTox-Green Assay

## ACR-2316 INDUCES POTENT CASPASE 3/7 CLEAVAGE COMPARED TO BENCHMARK WEEL OR PKMYTI INHIBITORS



Caspase 3/7-Glo Assay

## ACR-2316 INDUCES COMPLETE TUMOR REGRESSION ACROSS MODELS AND DOSING REGIMENS



## EXPEDITING ACR-2316 TOWARDS CLINICAL MONOTHERAPY DEVELOPMENT

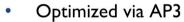
A novel, AP3-enabled, internally discovered dual WEE1 / PKMYT1 inhibitor

#### **Rational Design**

#### **Superior Profile**

#### **Streamlined Development**



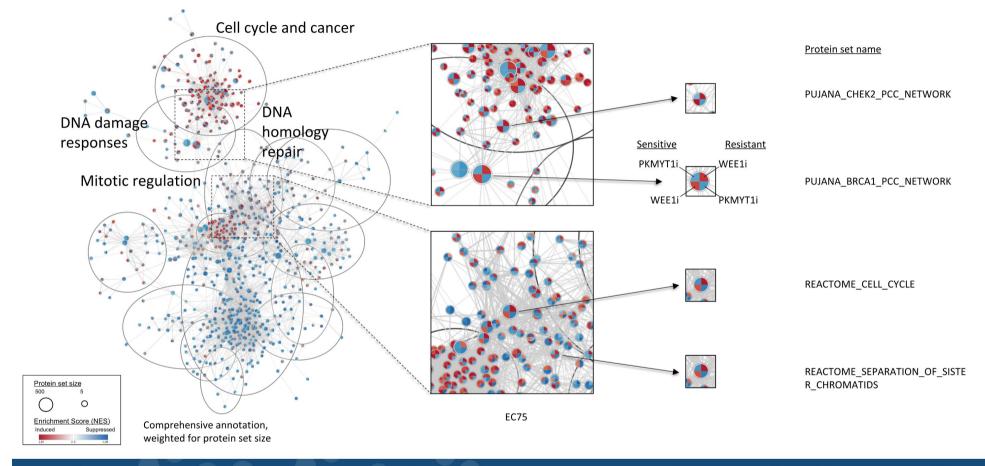


- AP3-enabled design for optimized single agent activity
- Potent anti-tumor activity across human tumor cell lines and in tumor-bearing mice vs benchmarks

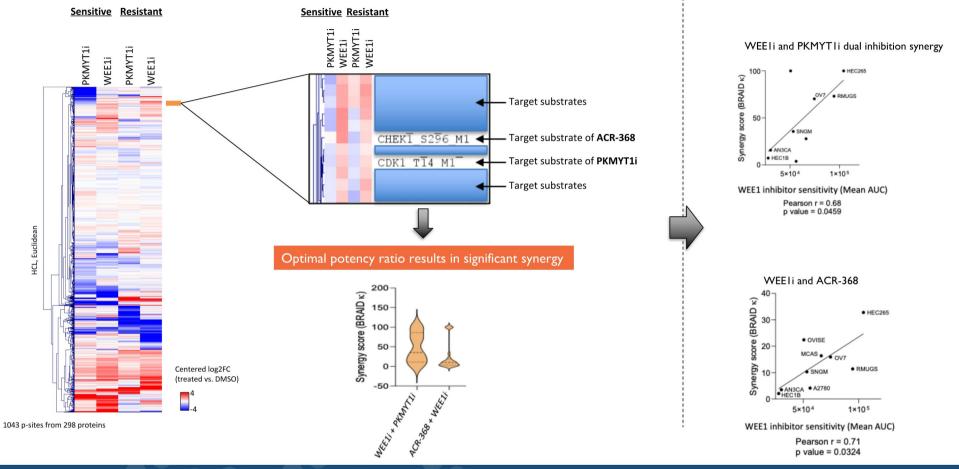


- Aiming for expedited monotherapy development
- Advancing towards IND in Q3, 2024, FIH in Q4, 2024
- OncoSignature test in development for indication finding
- Dose optimization to be guided by drug target engagement (BM2)

# AP3-DERIVED DUAL POTENCY OPTIMIZATION TO OVERCOME WEEL INHIBITOR RESISTANCE: RECIPROCAL QUENCHING

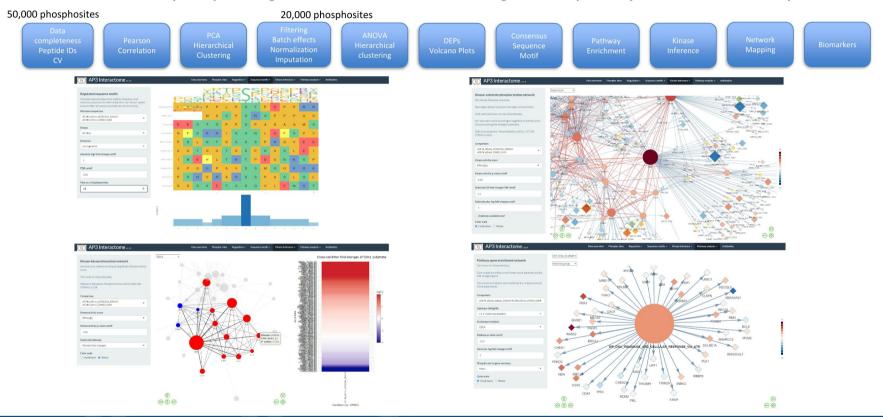


# AP3 RECIPROCAL QUENCHING REVEALS OPTIMAL TARGET POTENCY PROFILE FOR DUAL WEEI/PKMYTI INHIBITOR



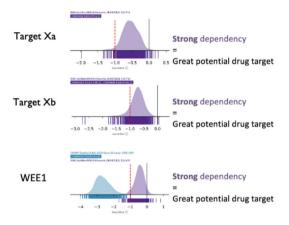
## AP3 INTERACTOME V.I: PROPRIETARY INTERACTIVE DATA ANALYSIS INFRASTRUCTURE

Actionable data across all AP3 experiments accessible for all Acrivon scientists Fully scripted, algorithm-based machine-learning enabled pathway and biomarker analyses

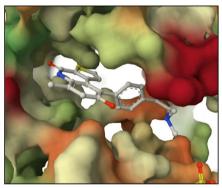


### CELL CYCLE REGULATORY PIPELINE PROGRAM (UNDISCLOSED TARGET)

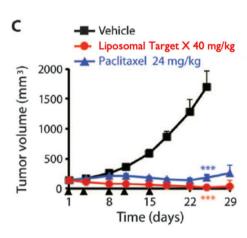
- Target X an exciting cancer drug target, no/minimal competitor programs, perfectly suited for AP3 platform
- DepMap data suggest suggest target X is an essential gene for cancer cell viability
- Strong mechanistic target rationale for role in oncogenesis
- Highly selective tool compound shows strong anti-tumor efficacy in rodent models
- Tool compound AP3 profiling supports selectivity
- New preclinical program leveraging co-crystallography and AP3 infrastructure successfully built for ACR-2316



Genetic dependency analysis across CCLE (n > 700)



Tool compound is a selective target X inhibitor (originally believed to be inhibitor for another target)



Development candidate 2025

## FINANCIAL HIGHLIGHTS - MARCH 31, 2024 PRO-FORMA

Cash and marketable securities

~\$234M

Pro-forma as of Mar-31-2024 Including net proceeds from recent PIPE Projected runway into

H2'26

Current operating plan, including PIPE Not including additional financing

Fully Diluted Shares Outstanding

~43.8M

Pro-forma as of Mar-31-2024 Including shares and pre-funded warrants issued with recent PIPE

Note: Unaudited

#### KEY TAKE-AWAYS

Initial clinical data (cut-off date April I, 2024) have demonstrated prospective validation of our AP3 platform and our key objectives

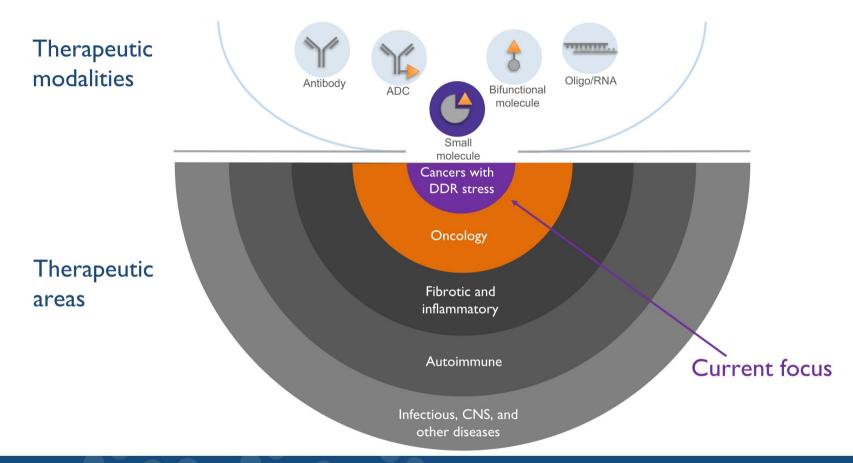
- 50% confirmed overall response rate observed in patients with OncoSignature-positive gynecological (ovarian and endometrial) cancers
  - Enrichment of ORR in ovarian cancer (40% confirmed ORR)
  - AP3-based prediction of endometrial cancer to be sensitive to ACR-368 now proven with clinical data and confirmed **ORR of 60%**
  - All 5 confirmed responders still on treatment, with mDoR not yet reached
- Initial, prospective validation of the AP3-based ACR-368 OncoSignature assay has demonstrated clear segregation of RECIST responders in the OncoSignature-positive versus OncoSignature-negative arms (p-value=0.0038)

Streamlined AP3-based drug design - ACR-2316, our internally-discovered dual WEE1/PKMYT1 inhibitor

- Demonstrated superior single agent activity in preclinical studies compared to clinical benchmarks
- Accelerated timelines with anticipated IND filing in Q3 and first-in-human in Q4, 2024

Pro-forma cash and marketable securities ~\$234M with runway projected to second half of 2026

## THE AP3 APPROACH IS MODALITY AND DISEASE AGNOSTIC



Q&A session