

Discovery of ARV-110, a first in class androgen receptor degrading PROTAC® for the treatment of men with metastatic castration resistant prostate cancer

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#### **Disclosure Information**



### Lawrence Snyder

I have the following financial relationships to disclose:

Stockholder in: Arvinas Inc Employee of: Arvinas Inc

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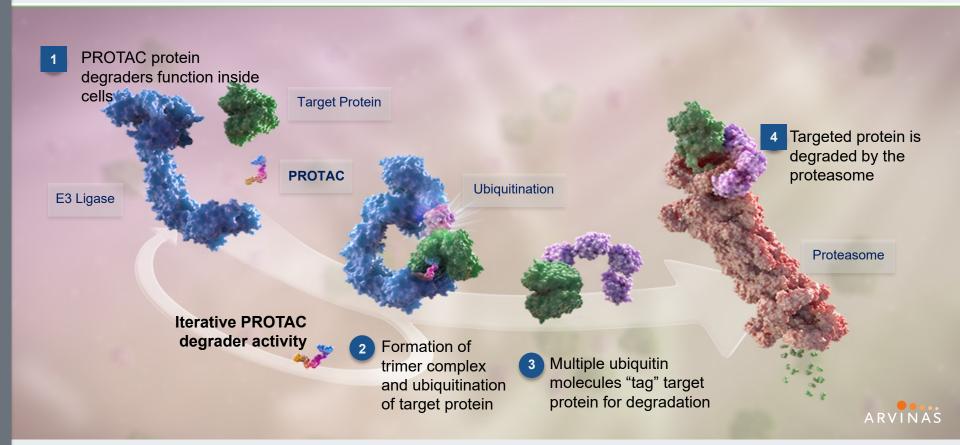
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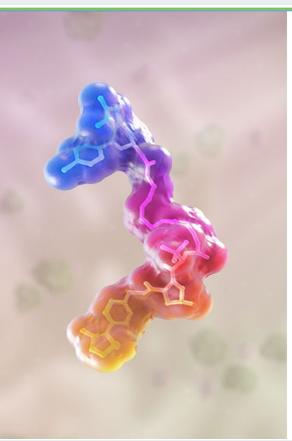
# PROTAC® protein degraders harness the UPS to induce the degradation of disease-causing proteins





# PROTAC® protein degraders combine the advantages of American Association for Cancer Research\* gene-based medicines and small molecule inhibitors

FINDING CURES TOGETHER®



PROTAC protein degraders have distinct advantages over both small molecule inhibitors and gene-based medicines	PROTAC™ Protein Degraders	Small Molecule Inhibitors	Gene-Based Medicines
Eliminate pathogenic proteins	✓	×	
Target scaffolding function	✓	×	
Potential to treat "undruggable" proteins	✓	*	
Iterative mechanism of action	✓	×	×
Broad tissue penetration	✓		×
Orally bioavailable	✓		×
Ease of manufacturing	✓		×

## Arvinas' pipeline encompasses a range of validated and undruggable targets in oncology, I-O, and neuroscience



	ARVN Program	Indication	Exploratory	Research	IND Enabling	Phase 1	Phase 2	Phase 3
Agc	ARV-110	mCRPC						
	ARV-766	mCRPC		IN	ID 2021			
ncol	AR-V7	mCRPC						
0-0	ARV-471	ER+/HER2- Breast Cancer						
III III	BCL6	B-cell Malignancies	IND	2022				
Oncology / Immuno-oncology	KRAS	NSCLC, CRC, Pancreatic	IND	2023				
	Undisclosed	Solid Malignancies	IND	2022				
	Myc	Solid Malignancies						
	HPK1	Solid Malignancies						
Neuroscience	Tau	FTLD-TAU, PSP, AD	IND	2022				
	Alpha Synuclein	MSA, Parkinson's						
	mHTT	Huntington's						
	Undisclosed	Neurodegeneration				-		

Note: Pipeline is non-exhaustive and IND dates are anticipated.

mCRPC, metastatic castration-resistant prostate cancer; ER+/HER2-, estrogen receptor+/human epidermal growth factor receptor 2-; NSCLC, non-small-cell lung carcinoma; CRC, colorectal cancer; FTLD-tau, frontotemporal lobar degeneration-tau; PSP, progressive supranuclear palsy; MSA, multiple systems atrophy



## ARV-110 is a Potent and Selective Degrader of AR in Vcap Cells



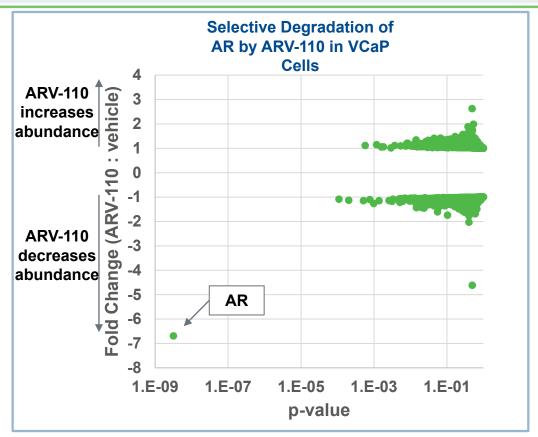
#### Orally bioavailable androgen receptortargeted PROTAC protein degrader

- ARV-110 is in development for the treatment of men with mCRPC who have progressed on abiraterone and/or enzalutamide
- Appears to overcome mechanisms of resistance to current standards of care
- DC<sub>50</sub> = 1 nM in VCaP cells1

#### **ARV-110 Selectively Degrades AR**

- After 8 hours of treatment of VCaP cells with 10 nM ARV-110 in vitro, AR was the only degraded protein among the nearly 4,000 proteins measured
  - $-85\% D_{max}^{2}$
  - p-value: 3x10<sup>-9</sup>

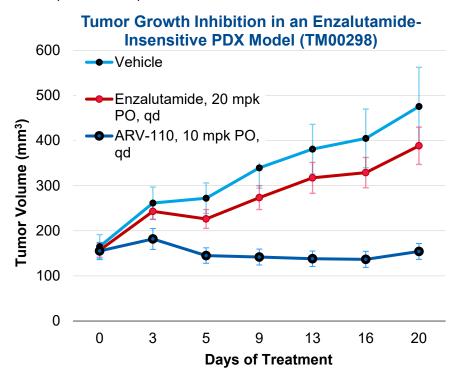
1 VCaP, Vertebral Cancer of the Prostate 2 D<sub>max</sub>, maximal degradation



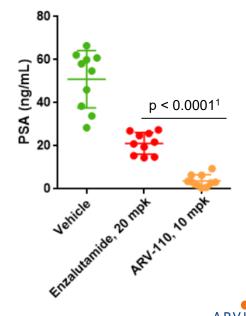
## ARV-110 Demonstrates Efficacy and Plasma PSA Reduction in an Enzalutamide-Insensitive PDX Model



 Orally delivered ARV-110 significantly inhibited tumor growth in these enza-insensitive tumors (TGI: 100%)

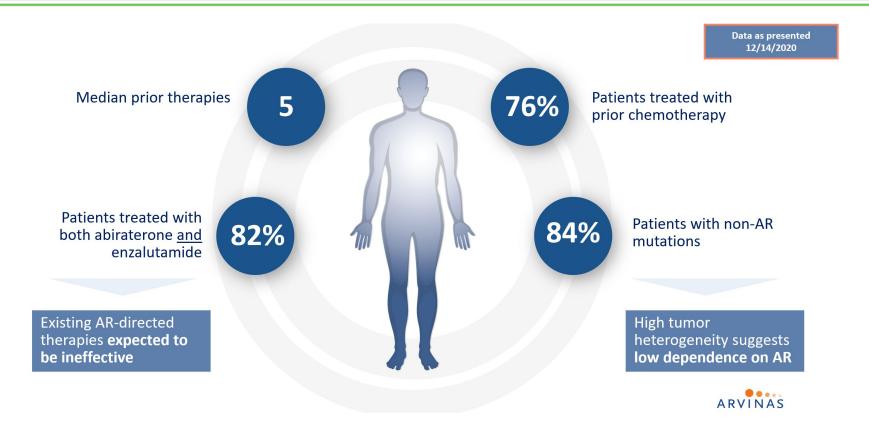


 Plasma PSA levels following ARV-110 treatment significantly decreased vs. mice treated with vehicle or enzalutamide



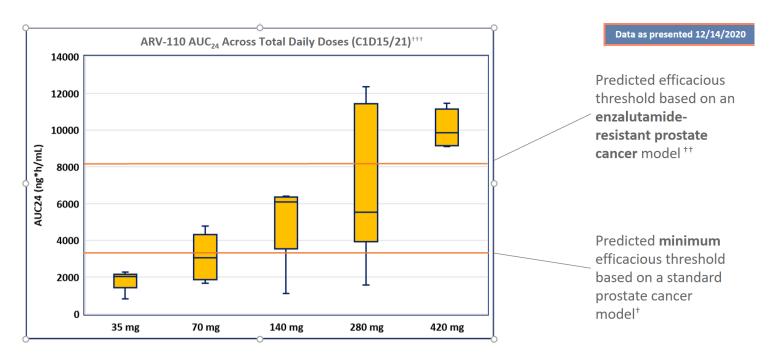
#### ARV-110 is showing early clinical benefit in highly refractory patients





### At 420 mg, exposures exceed the predicted efficacious threshold observed in a preclinical enzalutamide-resistant model





<sup>†</sup> The minimum preclinical efficacious threshold represents the AUC associated with tumor growth inhibition in standard VCAP models, †† This efficacious threshold represents the AUC associated with tumor growth inhibition in a preclinical enzalutamide-resistant VCAP model, ††† Includes both gd and bid dosing for the 420 mg total daily dose





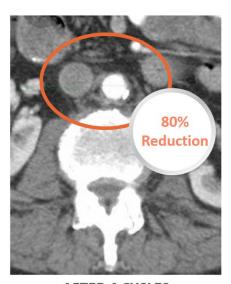
#### Results include one confirmed RECIST partial response

Patient Characteristics			
PSA response	97% decline		
RECIST response	80% reduction		
Duration of ARV-110	18+ weeks ongoing		
Biomarker status	AR H875Y and T878A mutations (associated with resistance to abiraterone or enzalutamide) <sup>1</sup>		
Common prior therapies	Enzalutamide, Abiraterone, Bicalutamide		
Other prior therapies	Provenge Cabazitaxel		
History	Extensive disease involving adrenal gland, aortocaval nodes, multiple cone metastases		



BASELINE CT SCAN

Extensive retroperitoneal adenopathy compressing the inferior vena cava



AFTER 4 CYCLES

Near complete regression
of adenopathy



RECIST: Response evaluation criteria in solid tumors <sup>1</sup>Jernberg E, Endocrine Connections, 2017



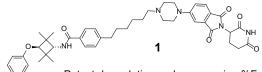
#### **Evolution of AR Degrading PROTACs Leading to ARV-110**

**Early Discovery Efforts**Multiple E3 recruiting ligands
Multiple AR binders

Good in vitro degradation potency Possible autoinduction signal AR ligand by itself agonist In vivo potency superseded by **4** 

Possible candidate

Dose escalation exposure suboptimal



Potent degradation and encouraging %F High Cl

Possible candidate In vivo potency suboptimal Crystallized to high melting solid



#### **Drug Discovery and Development is a Team Sport**



**AACR ANNUAL MEETING 2021:** APRIL 10-15, 2021 AND MAY 17-21, 2021