# CORPORATE PRESENTATION

#### SEPTEMBER 2019



#### SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This presentation and the accompanying oral commentary contain forward-looking statements, including: statements related to our understanding of cellular senescence and the role cellular senescence plays in diseases of aging; our expectations regarding the potential berefits, activity, effectiveness and safety of senolytic drug candidates; the status of our our preclinical, clinical and regulatory development plans and pipeline; our expectations with regard to the timing and results of our clinical studies; and our expectations with regard to our ability b acquire, discover and develop additional drug candidates and advance such drug candidates into, and successfully complete, clinical studies. These statements involve substantial known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance  $\sigma$  achievements to be materially different from the information expressed or implied by these forward-looking statements. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. The forward-looking statements in this presentation represent our views as of the date of this presentation. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this presentation.

For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to the business of the Company in general, see UNITY's most recently filed Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed with the Securities and Exchange Commission on August 7, 2019, as well as other documents that may be filed by UNITY from time to time with the Securities and Exchange Commission.

This presentation concerns drug candidates that are under clinical investigation and which have not yet been approved for marketing by the U.S. Food and Drug Administration. They are currently limited by Federal law to investigational use, and no representation is made as to their safety or effectiveness for the purposes for which they are being investigated.



At UNITY we are attacking the fundamental biology of aging to develop medicines that:



AGE-RELATED DISEASES



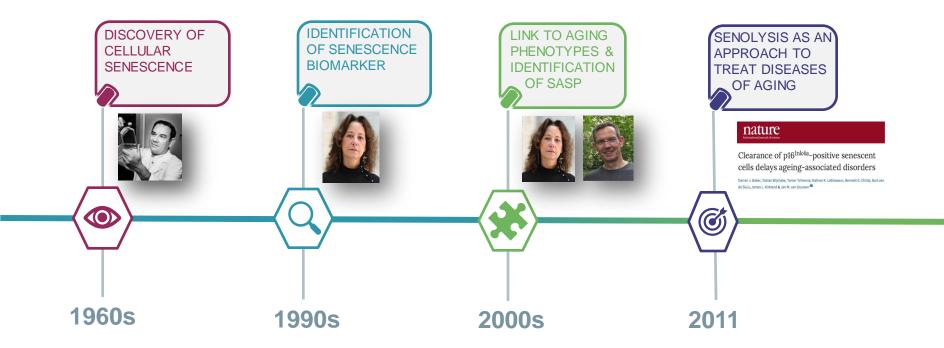
### A NEW THERAPEUTIC APPROACH

LEADER IN CELLULAR SENESCENCE	<ul> <li>Emerging research shows that senescent cells are implicated in multiple diseases of aging</li> <li>Selectively eliminating senescent cells targets a root cause of age-related disease</li> <li>Building on our deep understanding of senescence biology and intellectual property, our approach generates potent and selective senolytic drug candidates</li> <li>Pursuing diseases with established endpoints and regulatory pathways</li> </ul>
CLINICAL EVIDENCE	<ul> <li>Phase 1 study showed clear and substantial improvements in OA pain and function</li> <li>Initiation of Phase 2 study of UBX0101 in 4Q19; 12 week data expected 2H20; 24 week data expected 1H21</li> <li>Initiation of Phase 1b study for higher dose and repeat dose UBX0101 in 1H20 with data expected in 2H20</li> <li>Ophthalmology IND expected in early 2020; Safety data in 2H20; Efficacy data in 1H21</li> </ul>
EXPERIENCED TEAM	<ul> <li>Seasoned executive team with broad biotech experience</li> <li>Strong track record of delivering for patients and investors</li> </ul>
FINANCIAL POSITION	<ul> <li>Cash equivalents and investments balance of \$132 million as of June 30, 2019</li> <li>Runway into 2021</li> </ul>



## EMERGENCE OF NEW THERAPEUTIC APPROACH

Leveraging cellular senescence biology





## FROM SCIENTIFIC INSIGHT TO THERAPEUTIC BENEFIT



Letter | Published: 02 November 2011

Clearance of p16<sup>Ink4a</sup>-positive senescent cells delays ageing-associated disorders

Darren J. Baker, Tobias Wijshake, Tamar Tchkonia, Nathan K. LeBrasseur, Bennett G. Childs, Bart van de Sluis, James L. Kirkland & Jan M. van Deursen 🏁



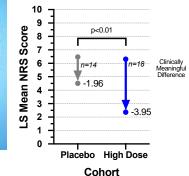




#### Phase 1 clinical study in osteoarthritis showed improvements in pain and function



NRS Change in LS Mean Score From Baseline to 12 Weeks

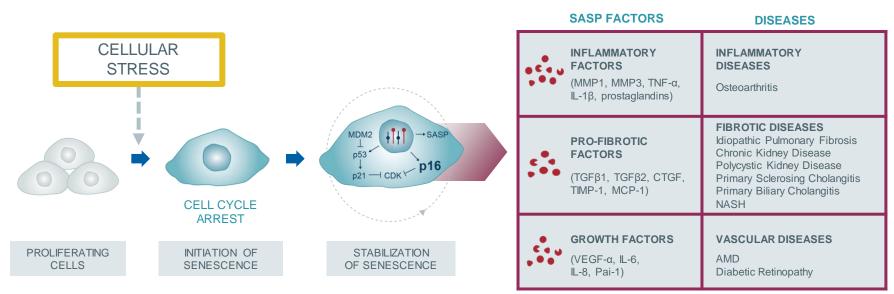








#### SENESCENT CELLS ARE IMPLICATED IN MULTIPLE DISEASES OF AGING



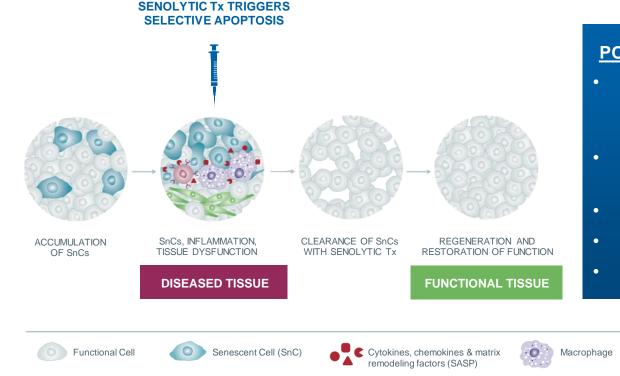
SASP

Senescent cells represent a potential root cause of diseases of aging



SASP = senescence-associated secretory phenotype

## THE UNITY THERAPEUTIC APPROACH



#### **POTENTIAL CLINICAL ADVANTAGES**

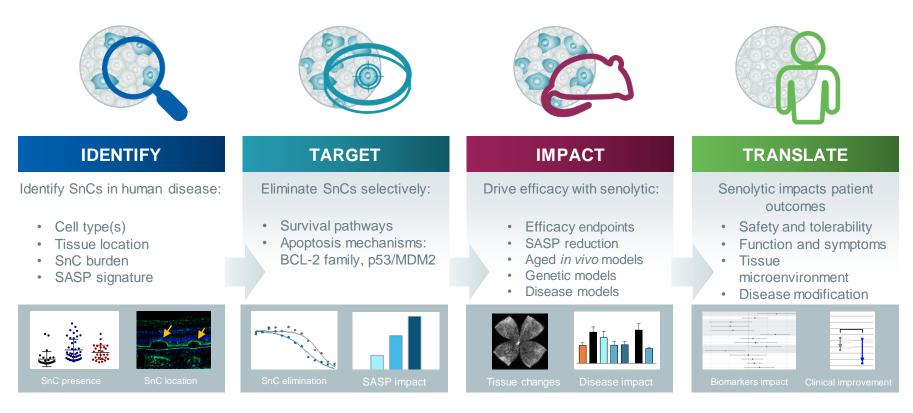
- Improved magnitude of effect by eliminating source of multiple factors
- Longer duration of therapeutic benefit
- Reduced frequency of dosing

CD4+ T lymphocyte

- Local administration
- Disease modification

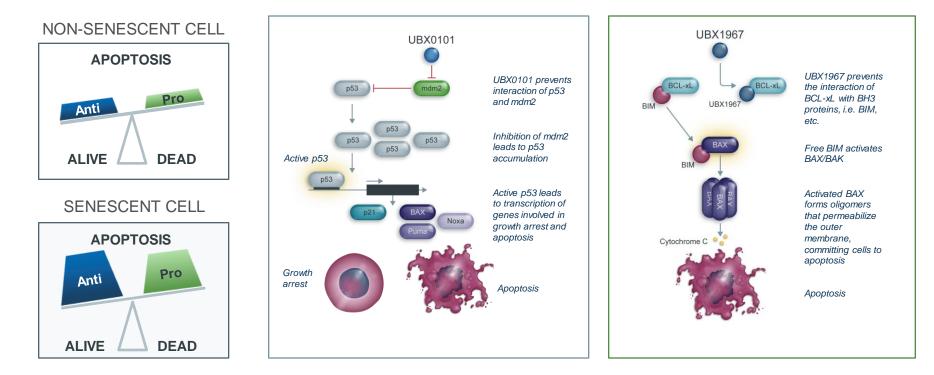
Fibroblast

#### OUR PLATFORM FOR GENERATING POTENT AND SELECTIVE SENOLYTIC DRUG CANDIDATES



JNE

### SENOLYTICS SELECTIVELY ELIMINATE SENESCENT CELLS BY TARGETING WELL-DEFINED SURVIVAL PATHWAYS



P53/MDM2

#### BCL2



#### UNITY PIPELINE Pursuing broad range of diseases with established endpoints and regulatory pathways



# OSTEOARTHRITIS

#### (MUSCULOSKELETAL INDICATION)



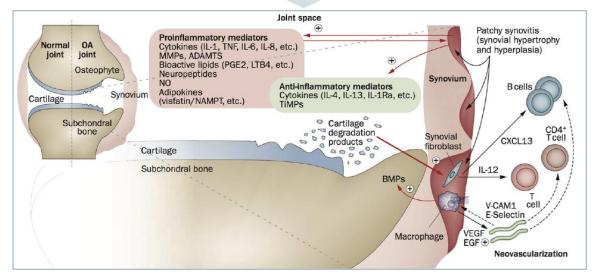
#### OSTEOARTHRITIS

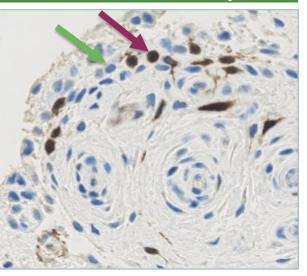


~10-15% of population >60 years old; SoC is pain mitigation or joint replacement

#### OA IS BELIEVED TO BE A MULTIFACTORIAL DISEASE

In phase 0 study, senescence burden correlated with disease severity



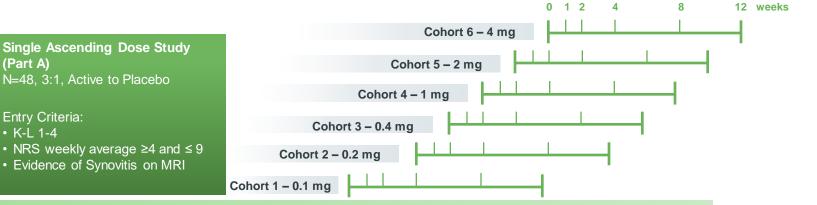


Mathiessen et al. Arthritis Research and Therapy 2017

A senolytic may remove source of multiple factors implicated in OA



## UBX0101 PHASE 1 PROGRAM



#### **Primary SAD Study**

Primary Objective: Safety and tolerability to 12 weeks

Secondary Objectives: Plasma PK and 11-Point NRS daily pain assessment, WOMAC (Pain, Stiffness, Function and Total), Plasma and Synovial fluid SASP/OA biomarkers to 12 weeks



Primary Objective: Safety and tolerability to 4 weeks

Secondary Objectives: Synovial fluid SASP/OA biomarkers, sparse plasma PK, WOMAC (Pain, Stiffness, Function and Total) to 4 weeks





## UBX0101 WAS WELL TOLERATED

- No serious adverse events
- No AEs led to discontinuation from study
- No dose-dependence in AEs or in clinical laboratory findings
- The majority of AEs were mild (66% in Part A and 75% in Part B)

#### Treatment-emergent AE occurring in ≥ 2 patients

Preferred Term	Part A, 0.1- 4mg (N= 34) n (%)	Placebo (N= 14) n (%)	Part B (4 mg) (N= 20) n (%)	Placebo (N= 10) n (%)
Nasopharyngitis	2 (5.9)	1 (7.1)	0	0
Procedural pain	2 (5.9)	1 (7.1)	2 (10.0)	0
Arthralgia	3 (8.8)	1 (7.1)	0	1 (10.0)
Headache	4 (11.8)	1 (7.1)	0	0

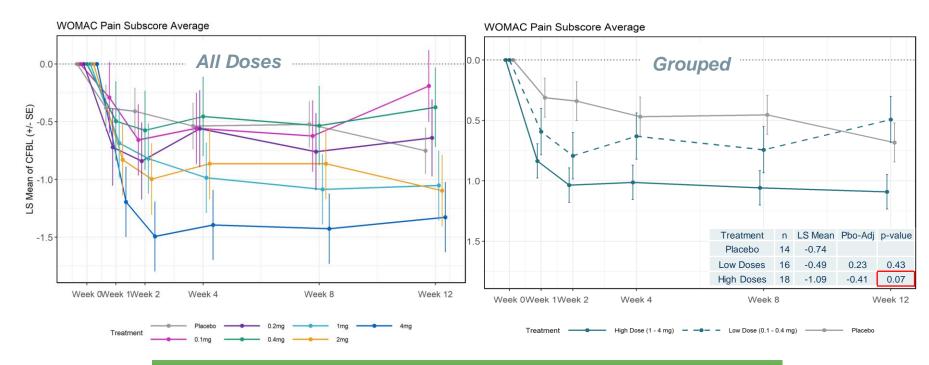


#### SINGLE DOSE OF UBX0101 DECREASED PAIN



WOMAC-A

#### 5 item, 0-4 point scale where a 0.5 point change is considered clinically meaningful.



Durable, dose-dependent and substantial effect

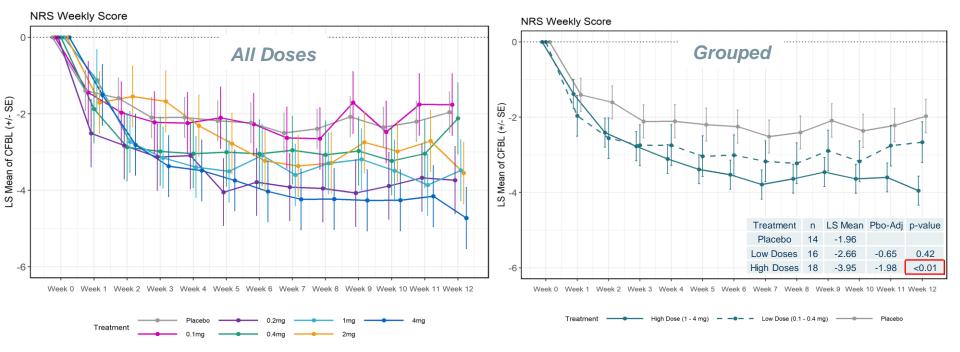


#### SINGLE DOSE OF UBX0101 DECREASED PAIN



Numerical Rating Scale (NRS)

0-10 point scale where a **2 point change** is considered clinically meaningful.



Durable, dose-dependent and substantial effect

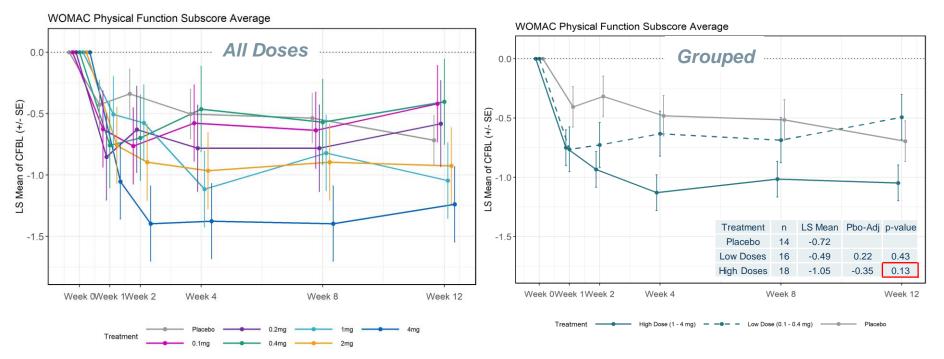


### SINGLE DOSE OF UBX0101 IMPROVED FUNCTION



WOMAC-C

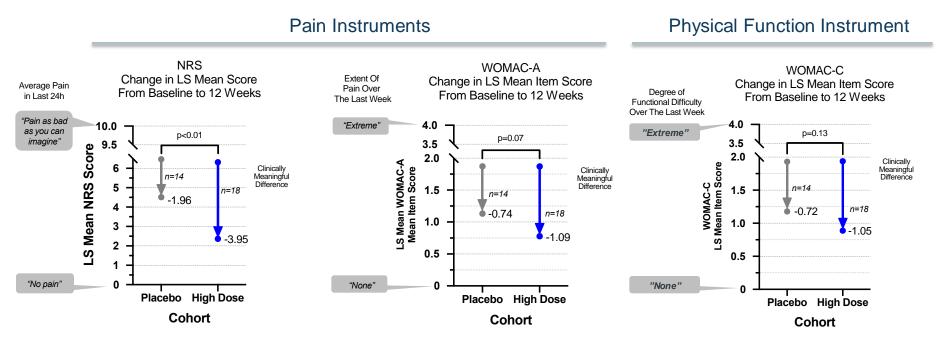
17 item, 0-4 point scale where a 0.3 point change is considered clinically meaningful.



Durable, dose-dependent and substantial effect

#### SINGLE DOSE OF UBX0101 IMPACTED PAIN AND FUNCTION AT 12 WEEKS

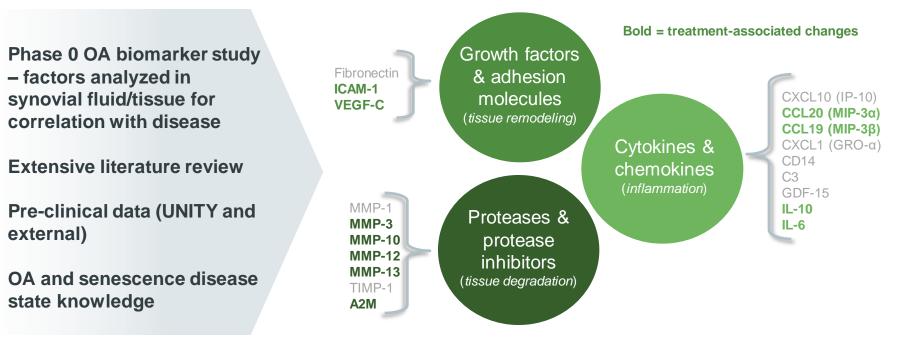




Durable, dose-dependent and substantial effect across NRS, WOMAC-A and WOMAC-C



#### PHASE 1 MEASUREMENT OF SASP / OA BIOMARKERS Data is supportive of a senolytic mechanism



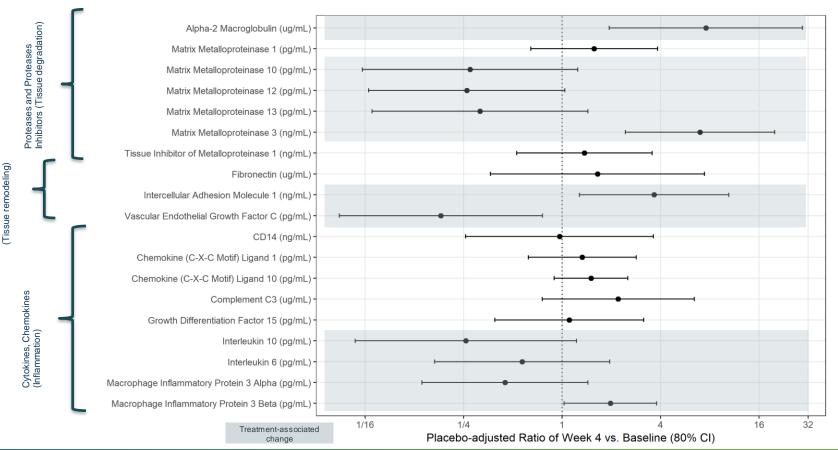
OA is believed to be a heterogeneous and multifactorial disease; UBX0101 injection altered joint environment



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#### 4 WEEK SYNOVIAL FLUID BIOMARKER DATA IS SUPPORTIVE OF A SENOLYTIC MECHANISM



21

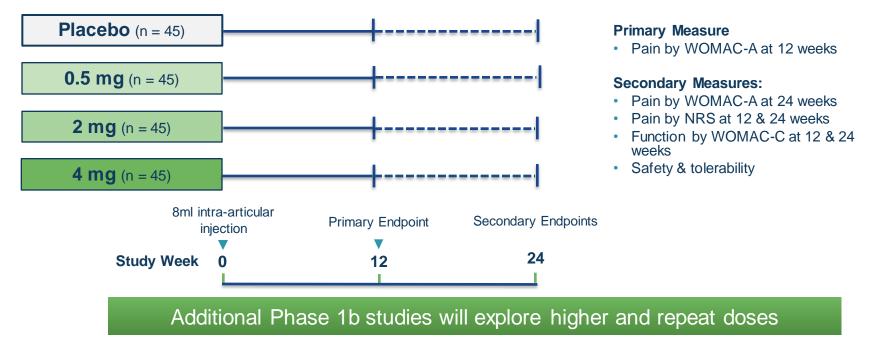
Adhesion molecules and Growth Factors

### UBX0101 PHASE 2 STUDY DESIGN



Designed to substantiate Phase 1 efficacy and explore duration and disease modification

A randomized, double-blind, placebo-controlled study evaluating three doses of UBX0101 administered via a single intra-articular injection





# POTENTIAL DIFFERENTIATING FEATURES OF UBX0101 IN OA





**Novel MOA**: eliminates SnCs  $\rightarrow$  potential root cause of disease

Large-Magnitude Effect: Clinically meaningful impact on pain and function

**Durability**  $\rightarrow$  sustained effect to 12 weeks in Phase 1 study

Phase 2 study designed to substantiate effects observed in Phase 1



## OPHTHALMOLOGY

#### (AGE-RELATED EYE DISEASE INDICATIONS)



#### UNITY PIPELINE Pursuing broad range of diseases with established endpoints and regulatory pathways



BIOTECHNOLOGY

#### AGE-RELATED EYE DISEASES ARE SIGNIFICANT PUBLIC HEALTH BURDENS

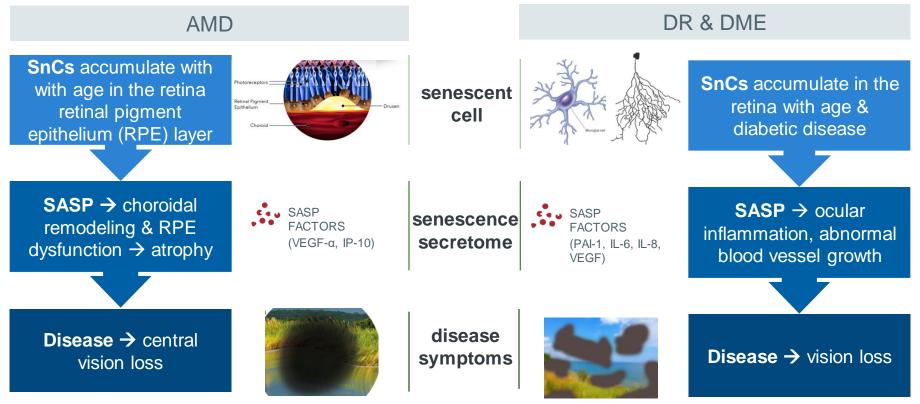
Leading causes of visual disability in aging populations, which may be treatable with a senolytic

	AGE-RELATED MACULAR DEGENERATION (AMD)	DIABETIC RETINOPATHY (DR)	DIABETIC MACULAR EDEMA (DME)
GLOBAL IMPACT	<ul> <li>Leading cause of visual disability in industrialized world;</li> <li>3<sup>rd</sup> leading cause globally</li> <li>Aging is the greatest risk factor</li> </ul>	<ul> <li>Leading cause of vision loss in middle-aged and elderly</li> <li>Impacts 8% of people &gt;65 years old</li> </ul>	<ul> <li>A manifestation of DR that is the primary cause of vision loss for people with diabetes</li> </ul>
GLOBAL PREVALANCE	<ul> <li>170M people affected</li> <li>Expected to increase to 285M+ by 2040</li> </ul>	<ul> <li>90M+ people affected; 28M with vision-threatening disease stages</li> <li>~33% of people with diabetes have signs of DR</li> </ul>	<ul> <li>20M+ people affected</li> </ul>
CURRENT TREATMENTS	<ul> <li>Anti-VEGF agents, laser therapy</li> </ul>	<ul> <li>Diabetes control, anti-VEGF agents, laser photocoagulation</li> </ul>	<ul> <li>Diabetes control, corticosteroids, anti-VEGF agents, laser photocoagulation</li> </ul>
GLOBAL MARKET SIZE		<ul> <li>&gt;\$8B in global annual anti-VEGF sale</li> </ul>	es



## ROLE OF SENESCENCE IN AGE-RELATED EYE DISEASE

SnCs accumulate in the retina, potentially contributing to disease phenotypes

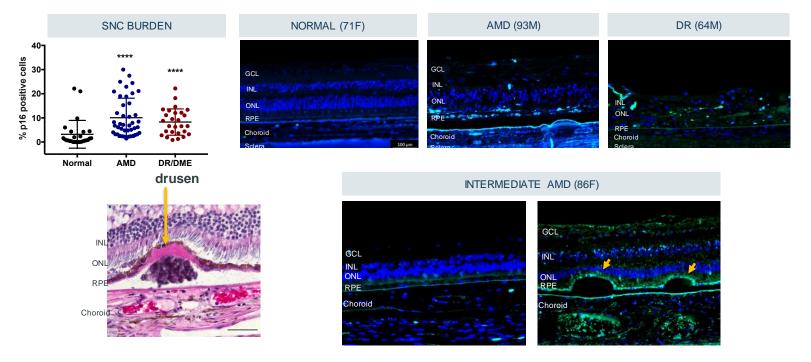


27 Oubaha et al., Senescence-associated secretory phenotype contributes to pathological angiogenesis in retinopathy, Sci. Transl. Med. 8, 362ra144 (2016)

BIOTECHNOLOGY

### SENESCENCE BURDEN IN AMD AND DR/DME





- SnC burden increases with disease stage
- DR/DME patients show SnC in the retina and Choroid



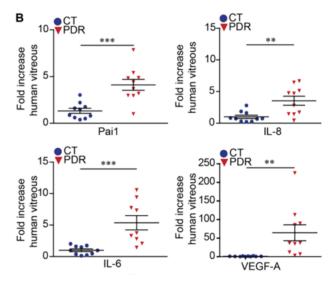
Unpublished UNITY Data

#### AMD

	nAMD	AMD Controls	
	Level	Level	Pre IVA
	mean ± SD	mean $\pm$ SD	vs Control
IL-1 $r\alpha$	0	$0.77\pm3.19$	0.381
IL-6	$6.51 \pm 5.24$	$78.2\pm100$	0.0029
IL-7	$10.9\pm3.95$	$13.5\pm12.8$	0.465
IL-8	$6.00\pm6.69$	$6.43 \pm 6.84$	0.448
IL-9	$0.087 \pm 0.40$	$0.10\pm0.41$	0.483
IL-12	$12.1 \pm 5.79$	$10.4 \pm 9.11$	0.268
IL-13	$1.97 \pm 2.22$	$2.25\pm2.65$	0.448
Eotaxin	$3.76 \pm 4.17$	$1.22 \pm 2.39$	0.035
βFGF	0	$0.71 \pm 2.92$	0.381
G-CSF	$0.28 \pm 1.27$	0	0.402
IP-10	$755\pm 645$	$273\pm260$	$3.00 imes10^{-4}$
MCP-1	$229\pm155$	$204\pm112$	0.381
MIP-1 $\alpha$	$0.41 \pm 0.91$	$0.96 \pm 2.35$	0.4
MIP-1 $\beta$	$37.2 \pm 15.6$	$37.2 \pm 31.1$	0.112
VEGF	$228\pm176$	$132\pm54.2$	0.029

SASP	Control	DR/PDR	P-value
L-1b	4.0	12.9	<0.0001
IL-ID	5.5	34.1	0.0001
	43.3	212.5	0.0005
IL-6	4.72	59.37	0.0003
	6.9	45.2	0.0005
	18.2	53.6	<0.0001
IL-8	7.43	87.89	<0.0001
	12.4	96.2	0.0003
TNFa	63.9	155.8	<0.0001
	12.3	160.7	0.0001
	18.9	422.6	0.0028
VEGF	23.5	1208.1	0.016
	7.36	240.18	0.0031
	0.84	15.64	0.0234
PDGF (BB)	0.7	2.9	0.015
	29.42	131.75	<0.0001
PDGF (AA)	99.1	602.2	0.007

#### DR



\*pg/ml in AH

\*pg/ml in VH

Oubaha et al., Senescence-associated secretory phenotype contributes to pathological angiogenesis in retinopathy, Sci. Transl. Med. 8, 362ra144 (2016)



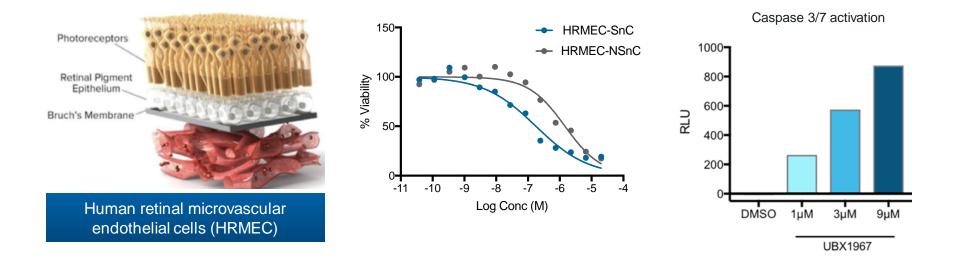
UNI



Sato (2018)

#### HIGHLY POTENT SENOLYTIC THAT TARGETS BCL-2 FAMILY PROTEINS





#### UBX1967 selectively eliminates HRMEC-SnCs over non-SnCs



Unpublished UNITY Data

#### **UBX1967 DEMONSTRATES EFFICACY IN MOUSE OIR** Oxygen induced retinopathy (OIR) model



Vehicle **UBX1967** 20 µM

Improves Retinal Vasculature

neovascularization of the whole area % ps-80 vehicle 0.24M 24M 20411 20041

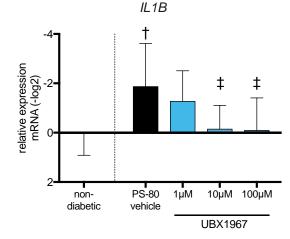
UBX1967

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001, \*\*\* p<0.001 v. Vehicle; one-way ANOVA, with Dunnett's multiple comparison test

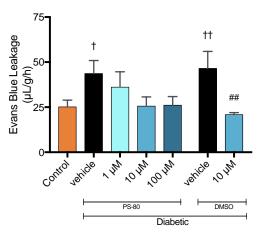
Intravitreal dosing improves retinal vasculature



#### UBX1967 DEMONSTRATES EFFICACY IN MOUSE STZ Streptozotocin (STZ) diabetic retinopathy model



† p<0.05 v. non-diabetic control by two-tailed t-test; ‡ p<0.05 v. Vehicle; one-way ANOVA, with Dunnett's multiple comparison test

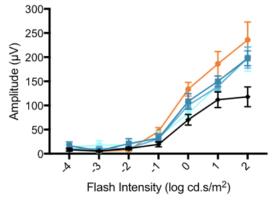


Vascular Leakage

**UBX1967** 

<sup>†</sup> p<0.05 v. Non-diabetic control by two-tailed t-test

<sup>++</sup> p<0.01 v. Non-diabetic control by two-tailed t-test ## p<0.01 v. DMSO control by two-tailed t-test A-wave amplitude: week 10



\*\*\*\* p<0.0001 v. Non-diabetic control; # p<0.05, ## p<0.01 v. Vehicle control by 2-way ANOVA with Tukey's multiple comparison test No significant difference between Non-diabetic control and Unity treatment groups

 $1 \mu M = -1.7 \text{ ng of UBX1967}$ 

Intravitreal dosing reduces SASP & vascular leakage and protects retinal function in diabetic mice



Unpublished UNITY Data

## UBX1967 VALUE PROPOSITION IN MULTIPLE AGE-RELATED EYE DISEASES

# Ô

#### DIFFERENTIATING PRECLINICAL FEATURES

Pan-Bcl senolytic: Potent inhibitor of Bcl family

Novel MOA: eliminates SnCs → reduces multicomponent SASP

*in vivo* efficacy → activity in two preclinical models of retinopathy

#### PROPOSED CLINICAL BENEFITS

- Potential for improvements in visual function over anti-VEGF therapy
- Potential for efficacy in patients that don't respond to anti-VEGF therapy
- Potential for efficacy in combination with anti-VEGF therapy

#### Potential to reduce SASP factors across multiple diseases of aging retina



# SUMMARY



## FINANCIAL METRICS AND MILESTONES

#### **FINANCIAL**

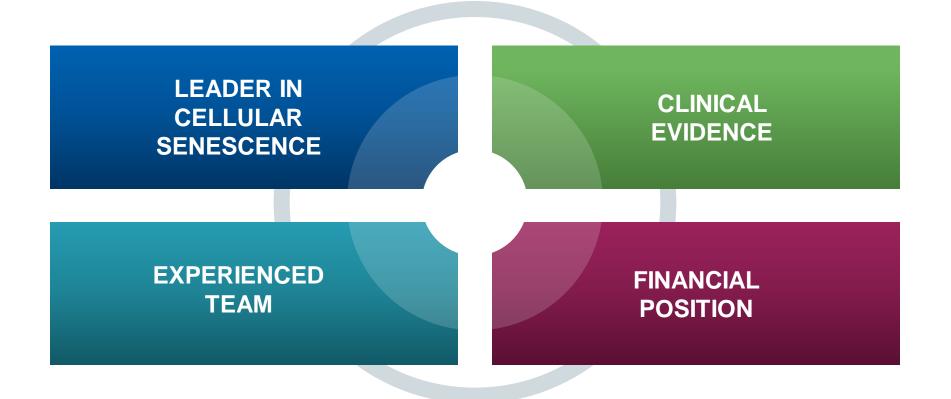
- \$132 million cash and investments at June 30, 2019
- Cash runway into 2021

#### **MILESTONES**

- Q2 2019 Data from UBX0101 Ph1
- Q4 2019 Expect to initiate UBX0101 Ph2
- Early 2020 Anticipate ophthalmology IND filing
  - To enable multiple indications (e.g., AMD, DR and DME)
  - Safety data expected 2H 2020; Efficacy data expected 1H 2021
- 2H 2020 Expect 12 week results from UBX0101 Ph2
- 1H 2021 Expect 24 week results from UBX0101 Ph2



#### UNITY BIOTECHNOLOGY





## At UNITY we are developing medicines designed to:



#### AGE-RELATED DISEASE

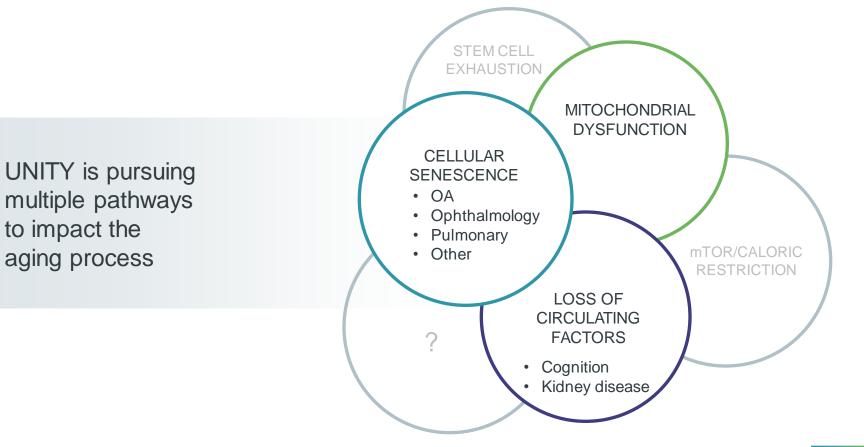


#### MANAGEMENT An experienced team with a track record of success





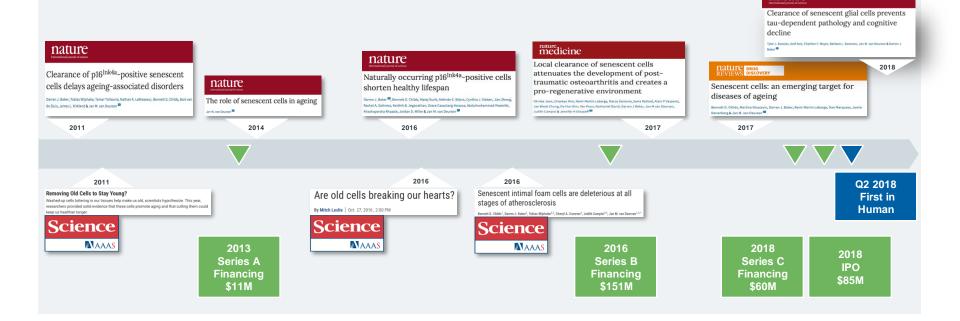
## MULTIPLE MECHANISMS DRIVE AGING





## UNITY: ESTABLISHING LEADERSHIP IN HEALTHSPAN

#### Robust funding for R&D with notice in prestigious scientific journals

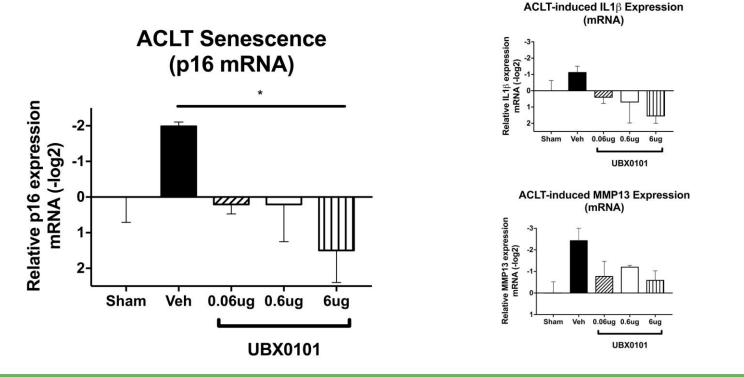




nature

#### UBX0101 EFFICACY IN VIVO

Intra-articular dosing eliminates senescent cells and modulates SASP in mice



\* *p*-value ≤ .05

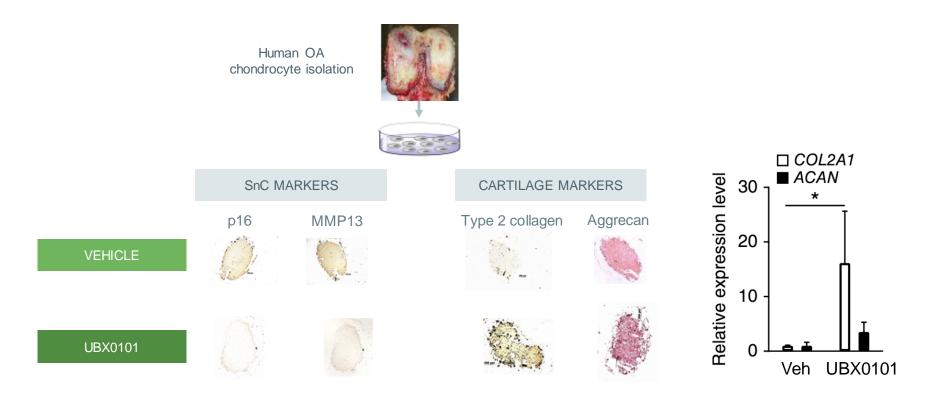
IA dosing of UBX0101 eliminates p16<sup>+</sup> SnCs and reduces OA-relevant SASP factors



Unpublished UNITY Data

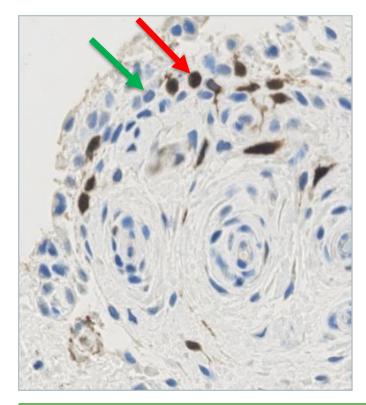
### UBX0101 EFFICACY EX VIVO

Diseased tissue exposed to UBX0101 upregulates expression of key components of cartilage

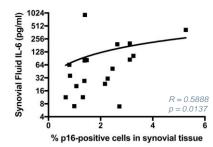




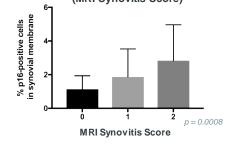
## INCREASED SnCs OBSERVED IN KNEES OF OA PATIENTS



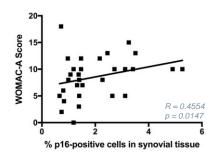
Relationship between degree of senescence (p16) and synovial fluid SASP Factors (IL-6)



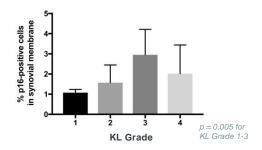
Relationship between degree of senescence (p16) and synovial membrane inflammation (MRI Synovitis Score)



Relationship between degree of senescence (p16) and patient reported pain scores (WOMAC-A)



Relationship between degree of senescence (p16) and stage of OA disease (KL Grade)



In 30 patients, senescence burden correlated directly with pain, arthritic severity, and inflammation



## PATIENT DEMOGRAPHICS



	Part A		Part B	
	Total Subjects (n=48)	Cohorts Balanced	Total Subjects (n=30)	Cohorts Balanced
Age (yrs)	62.4	Yes	61.2	Yes
Gender (M:F)	16:32	No	15:15	Yes
Race (%) (Asian/African American/Pacific Islander/White/American Indian)	0 / 6.3 / 0 / 89.6 / 4.2	Yes	0 /16.7 / 0 / 82.3	Yes
Ethnicity (%) (Hispanic/Non-Hispanic/Unknown)	33.3 / 64.6 / 2.1	No	40 / 60 / 0	Yes
Weight (kg)	82.20	Yes	84.50	Yes
Height (cm)	165.0	Yes	167.0	Yes
BMI (kg/m^2)	30.25	Yes	29.10	Yes



### BASELINE PATIENT CHARACTERISTICS



Baseline Characteristic	Part A (UBX-0101 Intra- Articular Dose in mg)				Part B				
endracteristic	Mean (SD)					Mean (SD)			
Dose Group (n)	Placebo (n=14)	0.1 (n=6)	0.2 (n=5)	0.4 (n=5)	1.0 (n=6)	2.0 (n=6)	4.0 (n=6)	Placebo (n=10)	4.0 (n=20)
K-L Score	2.58 (0.90)	2.83 (0.41)	3.00 (1.22)	3.00 (1.22)	2.67 (0.52)	2.50 (0.84)	3.17 (0.41)	2.50 (0.85)	2.47 (1.12)
11-pt Synovitis Score	13.36 (5.14)	10.33 (5.79)	16.20 (4.21)	8.25 (5.19)	12.67 (4.80)	12.00 (5.59)	11.17 (5.38)	Not measur	ed in Part B
Yrs Dx with OA	6.84 (4.04)	15.4 (15.3)	11.3 (4.39)	10.3 (6.57)	13.4 (10.1)	11.6 (8.39)	6.84 (4.05)	10.1 (8.73)	8.64 (6.36)
BL WOMAC total	47.14 (12.96)	54.17 (7.41)	37.60 (11.55)	58.80 (10.08)	50.67 (14.07)	41.67 (11.45)	46.67 (6.44)	52.40 (12.57)	50.45 (16.37)
BL WOMAC A Pain	9.36 (2.21)	11.17 (1.94)	9.00 (0.71)	11.80 (1.48)	9.67 (2.94)	8.50 (3.15)	9.83 (1.60)	11.30 (1.89)	11.10 (3.40)
BL WOMAC B Stiffness	4.93 (1.27)	4.83 (0.98)	4.80 (0.84)	5.00 (1.41)	4.50 (1.52)	4.00 (0.89)	3.67 (0.82)	4.40 (1.35)	4.40 (1.47)
BL WOMAC C Function	32.86 (10.80)	38.17 (5.08)	23.80 (10.94)	42.00 (8.28)	36.50 (10.62)	29.17 (9.43)	33.17 (5.27)	36.70 (10.24)	34.95 (12.70)
BL Weekly Average NRS	6.47 (1.11)	5.90 (1.40)	6.30 (0.53)	6.76 (1.10)	6.49 (1.55)	6.15 (1.18)	6.29 (1.42)	Not measur	ed in Part B



### EFFICACY: PART A – IMPRESSION OF CHANGE - PGIC Grouped Dose Cohorts – 12 Week



PGIC	Part A (UBX-0101 Intra-Articular Dose in mg)				
Binary Variable	Estimated Probability (95% CI)				
Dose Group (n)	Placebo	Low Doses	High Doses		
	(n=14)	(n=16)	(n=18)		
Much Improved or Better	42.9 %	50.0 %	61.1 %		
	(20.6 - 68.4%)	(40.0-60.0%)	(50.0- 66.7%)		

# PGIC score demonstrated dose response

Low Dose - (0.1, 0.2, 0.4 mg) High Dose - (1.0, 2.0, 4.0 mg)

Consistent efficacy demonstrated in Part A across multiple measurements including NRS, WOMAC-A, WOMAC-C & PGIC



## PART B MEASURES OF PAIN & FUNCTION DIRECTIONALLY CONSISTENT WITH PART A RESULTS



#### WOMAC-A

5 item, 0-4 point scale where a 0.5 point change is considered clinically meaningful.

#### WOMAC-C

**17 item**, 0-4 point scale where a 0.3 point change is considered clinically meaningful.

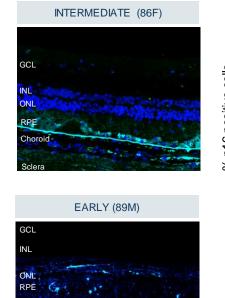
	WOMAC-A		WOMAC-C	
	CFBL	Pbo-Adj (P-value)	CFBL	Pbo-Adj (P-value)
Placebo (n=10)	-0.72		-0.60	
4.0 mg (n=20)	-0.87	-0.15 (0.62)	-0.77	-0.17 (0.60)

Part B procedure for optimal collection of synovial fluid following treatment included complete drainage of the knee, and if fluid yield is insufficient, introducing saline and then repeating the withdrawal

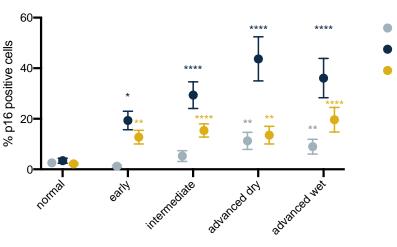


#### SNC BURDEN INCREASES WITH DISEASE STAGE





#### AMD SnC burden



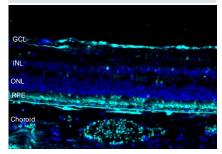
\*p<0.05; \*\*p<0.01; \*\*\*\*p<0.0001 v. Normal by Kruskal-Wallis with Dunn's multiple comparisons test

#### ADVANCED DRY (93F)

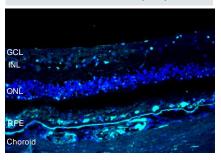
retina

RPE

choroid



#### ADVANCED WET (93M)



#### Senolysis has the opportunity to halt disease progression from an early stage

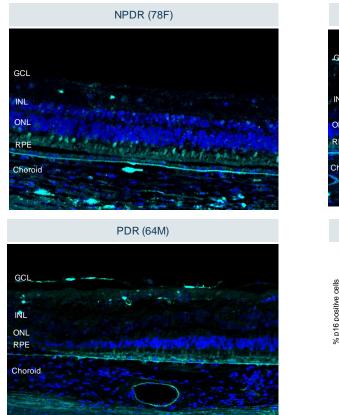


Unpublished UNITY Data

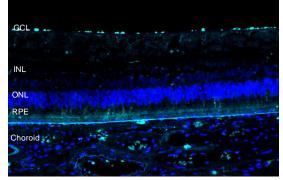
Choroid

### DR/DME PATIENTS SHOW SNC IN THE RETINA AND CHOROID

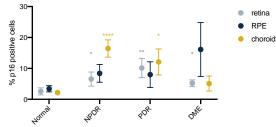




#### DME (54F)



#### DR SNC BURDEN



\*p<0.05; \*\*p<0.01; \*\*\*\*p<0.001 v. Normal by Kruskal-Wallis with Dunn's multiple comparisons test





