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THE OPHTHALMOLOGY MEDICINES COMPANY

MARCH 2019

SPECIAL NOTE REGARDING

FORWARD-LOOKING STATEMENTS

These slides and the accompanying oral presentation contain forward-looking statements and information. The use of words such as “may,” “might,” “will,” “should,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “project,” “intend,” “future,” “potential,” or “continue,” and other similar expressions are intended to identify forward-looking statements. For example, all statements we make regarding the initiation, timing, progress and results of our preclinical and clinical studies and our research and development programs, our ability to advance product candidates into, and successfully complete, clinical studies, and the timing or likelihood of regulatory filings and approvals are forward looking. All forward-looking statements are based on estimates and assumptions by our management that, although we believe to be reasonable, are inherently uncertain. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that we expected. These statements are also subject to a number of material risks and uncertainties that are described in our most recent quarterly report on Form 10-Q, as well as our subsequent filings with the Securities and Exchange Commission. Any forward-looking statement speaks only as of the date on which it was made. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

OUR MISSION

The Ophthalmology Medicines Company

1 HIGH SCIENCE INSIDE

Disruptive products and platforms to tackle the biggest challenges in ophthalmology.

2 "GO-TO" MEDICINES

Develop KSI-301 to be the anti-VEGF of choice for all patients with retinal vascular disease.

A pipeline directed to the major retina indications of wet AMD, dry AMD, and diabetic eye disease.

3 GLOBAL FRANCHISE

A singular focus in ophthalmology with a global scope.

From discovery through commercialization.

STRONG

COMPANY LEADERSHIP

Management Team with Experience to Build a Leading Biotech Company

BOARD OF DIRECTORS
Deep Biotech and Governance Experience

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Chairman

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Director
Baker Brother Advisors LP

Bassil I. Dahivat PhD
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Richard S. Levy MD
Director

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Director

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SVP Discovery Medicine

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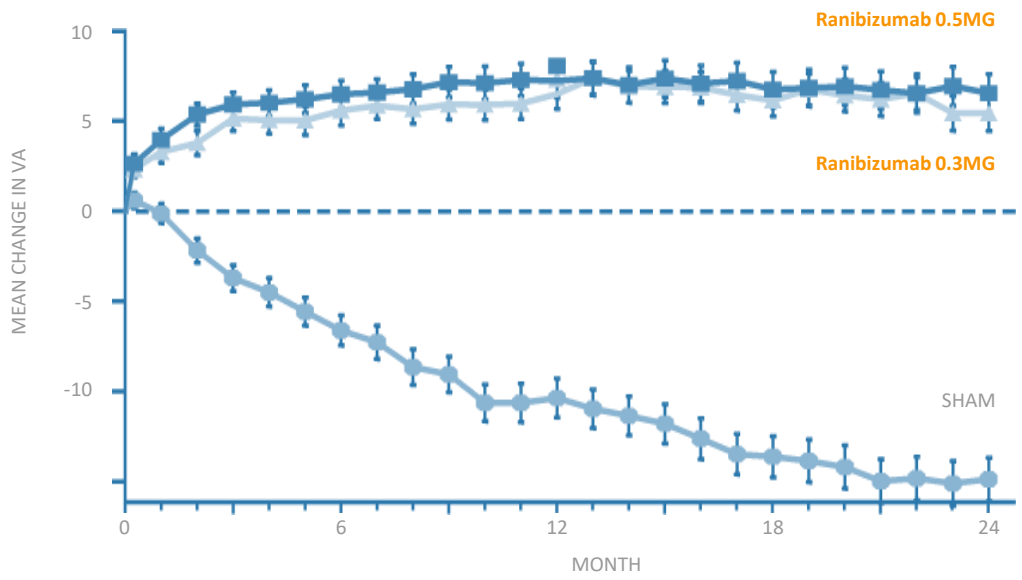
VP, Clinical Research & Translational Medicine

Desiree Beutelspacher
VP, Clinical Operations

WHAT IS THE PROBLEM TO BE SOLVED?

Intravitreal anti-VEGF agents improve & maintain vision when dosed per label…

PHASE III STUDY OF MONTHLY ANTI-VEGF[1]



Recommended dosing in first year:

Ranibizumab **12** (MONTHLY)

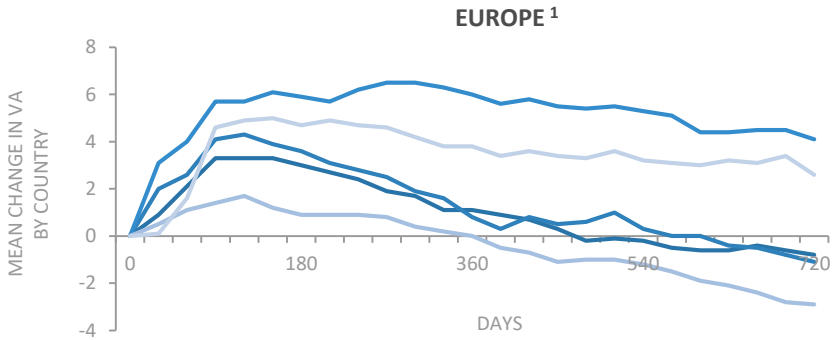
Aflibercept **8** (BI-MONTHLY AFTER 3 MONTHLY LOADING DOSES)

1. Rosenfeld PJ et al; MARINA Study Group. N Engl J Med. 2006;355:1419-14313. 2. Brown DM et al; ANCHOR Study Group. Ophthalmology. 2009;116:57-65 3. Schmidt-Erfurth et al. Ophthalmology 2014; 121:193

WHAT IS THE PROBLEM TO BE SOLVED?

…yet minimal visual gains are achieved in real-world practice

- Without continuous high intensity treatment, vision loss can begin after only 3 months of anti-VEGF therapy
- This pattern is seen globally and with all current agents



No. of injections in 2 yrs

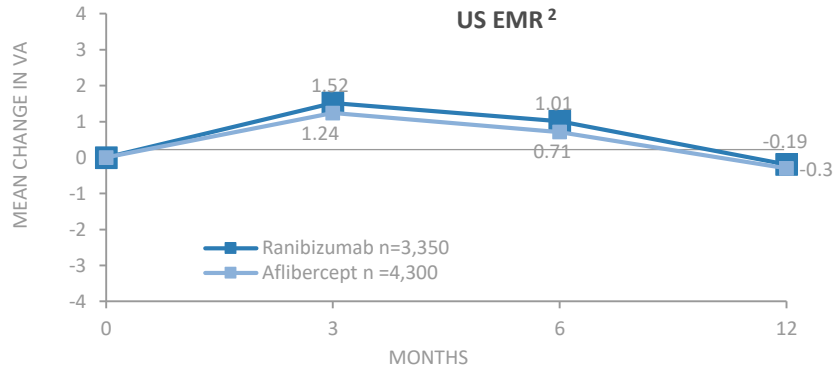
9.0 UK

8.7 NETHERLANDS

5.6 GERMANY

6.3 FRANCE

5.2 ITALY



Mean (±SD) injections at Month 12

Ranibizumab: 6.7 (2.5)

Aflibercept: 7.0 (2.4)

1. The AURA Study, adapted from Holz FG et al. Br J Ophthalmol 2015; 99 (2): 220–226.
2. Adapted from Lotery A, et al. Eye (Lond). 2017 Dec;31(12):1697-1706.

EMR= Electronic Medical Records

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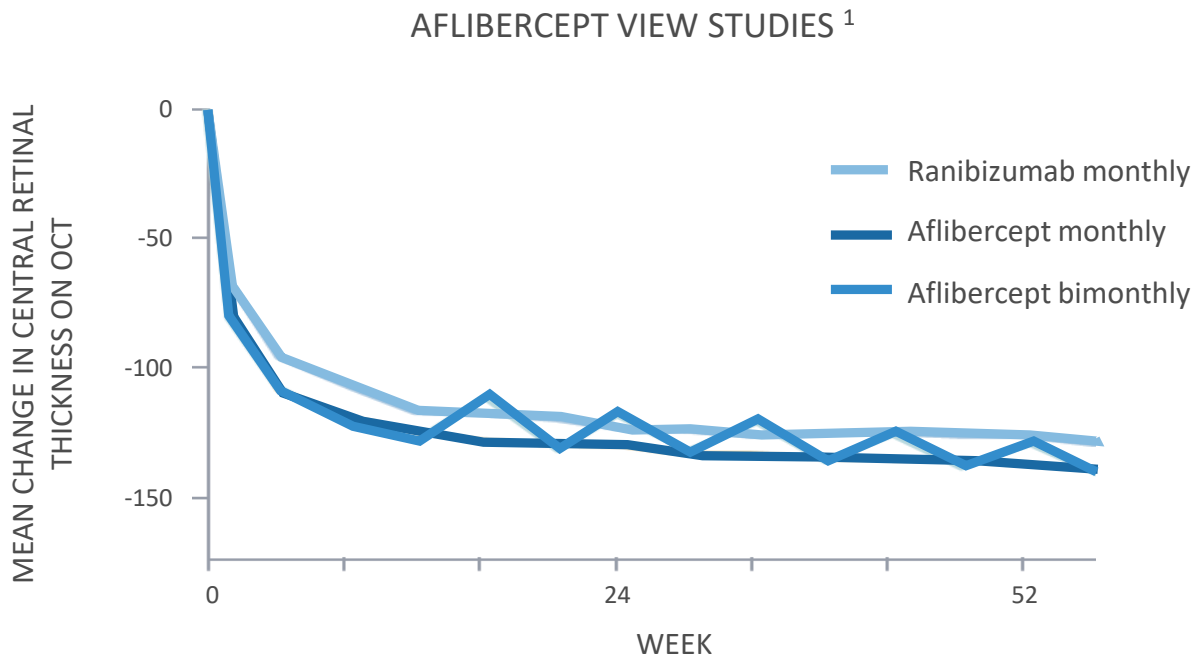
WHY?

Current anti-VEGF drugs do not control disease for long enough between doses.

Undertreatment leads to disease progression and permanent retinal damage.

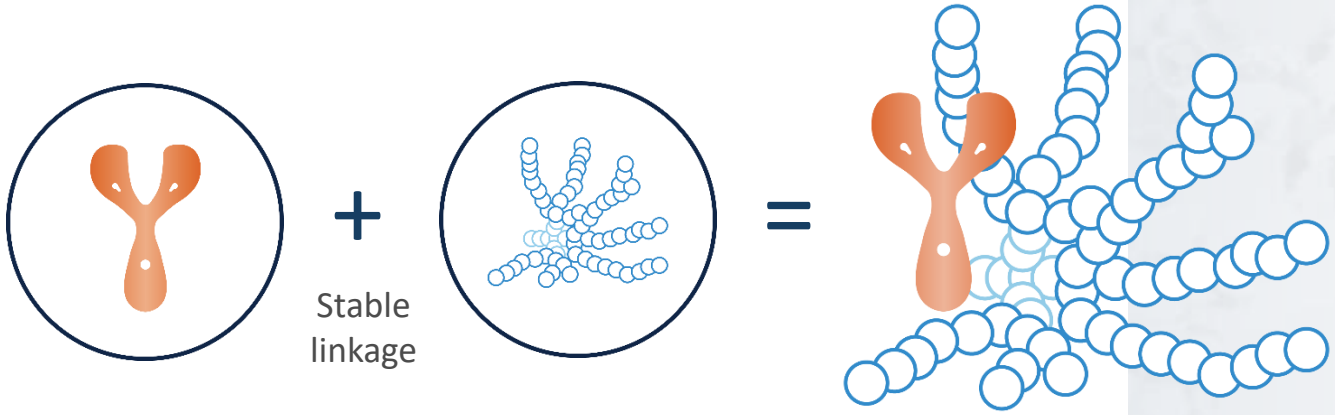
Bimonthly Anti-VEGF Results in Disease Activity between Doses



1 Heier JS. Ophthalmology. 2012 Dec;119(12):2537-48. 3. Dugel PU. Ophthalmology. 2017 Sep;124(9):1296-1304. CRT= Central Retinal Thickness

ABC PLATFORM™

ANTIBODY BIOPOLYMER CONJUGATE



ANTIBODY

IgG1 with inert immune effector function

BIOPOLYMER

Optically clear, high molecular weight phosphorylcholine polymer

ANTIBODY BIOPOLYMER CONJUGATE MEDICINES

KSI-301: the "GO-TO ANTI-VEGF" designed to solve the real-world effectiveness problem

SAME WHERE IT MATTERS

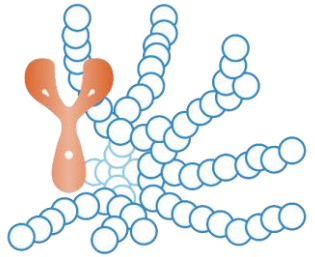
- Clinically proven target: VEGF
- Antibody-based biologic
- Intravitreal injection
- Optically clear solution
- No ocular residues

DIFFERENT WHERE IT COUNTS

- Designed-in ocular durability
- Fast systemic clearance
- Improved bioavailability
- Improved biocompatibility
- Improved stability

KSI-301 optimizes size & formulation strength to improve durability

Drug/Candidate:	BROLUCIZUMAB	RANIBIZUMAB	AFLIBERCEPT
Molecule type	Single-chain antibody fragment	Antibody fragment	Recombinant fusion protein
Molecular structure			
Molecular weight	26 kDa	48 kDa	115 kDa
Clinical dose	6 mg	0.3-0.5 mg	2 mg
Equivalent molar dose	22	1	2
Equivalent ocular PK	<1	1	1.5
Equivalent ocular concentration at 3 months	10	1	1,000

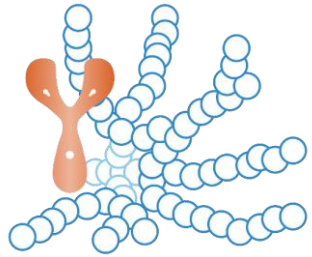
KSI-301
Antibody Biopolymer Conjugate (ABC)

950 kDa
5 mg (by weight of antibody)
7
4
1,000,000

Equivalent values are showed as fold changes relative to Ranibizumab.

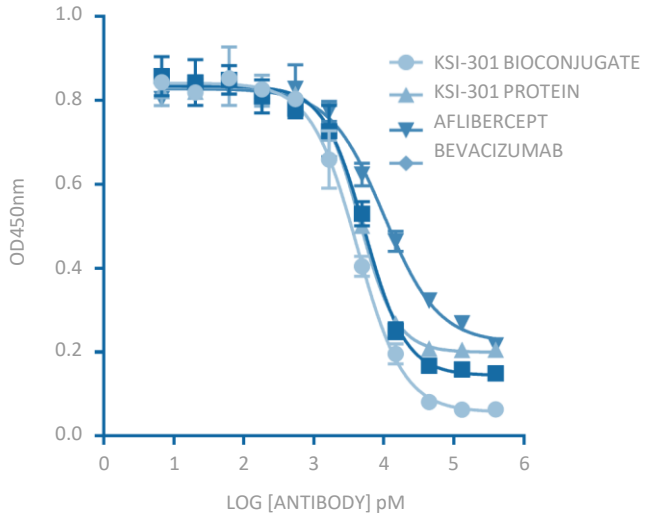
KSI-301 bioconjugate has shown greater potency in vitro than unconjugated anti-VEGFs

In vitro assays demonstrate KSI-301 bioconjugate has a **deeper potency** compared to ranibizumab, aflibercept and bevacizumab **because of the special nature of its phosphorylcholine biopolymer**.

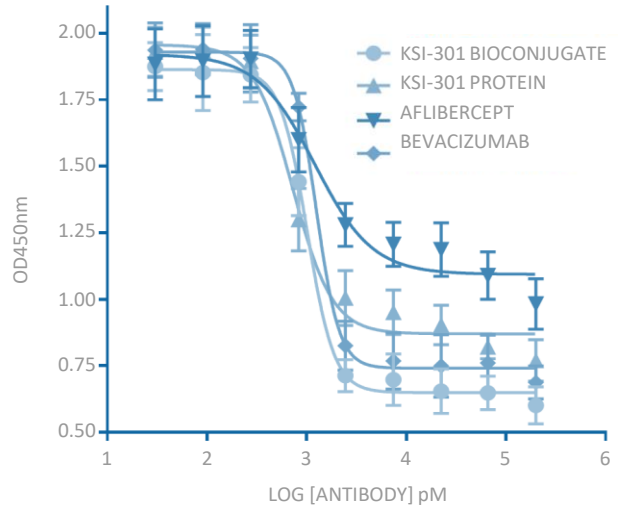
- KSI-301 has high binding affinity to VEGF (K_D 6.75 pM, KinExA 37°C)
- KSI-301 bioconjugate has a deeper potency than other anti-VEGF and even its unconjugated starting protein



BIOCHEMICAL ASSAY
Anti-VEGF Inhibition of VEGF: VEGFR binding



PRIMARY HUMAN RETINAL CELL-BASED ASSAY
Anti-VEGF Inhibition of HRMVEC Proliferation



Kodiak data on file

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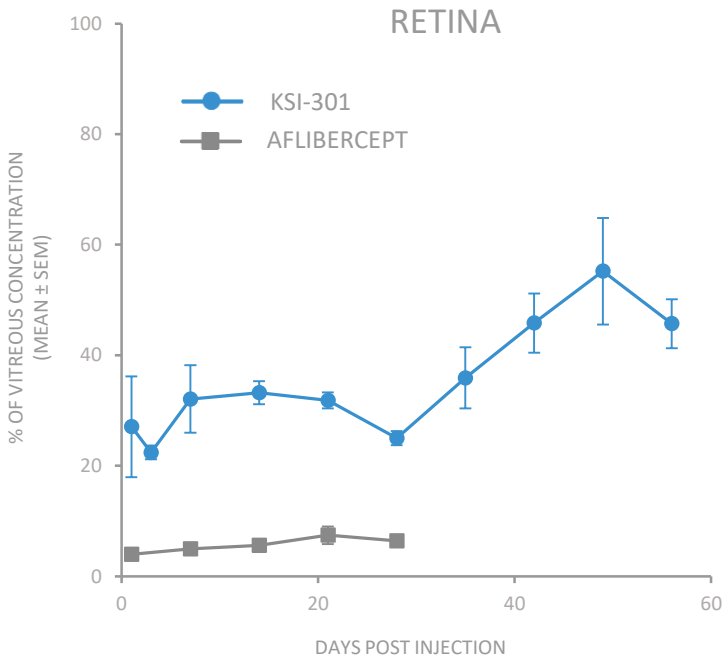
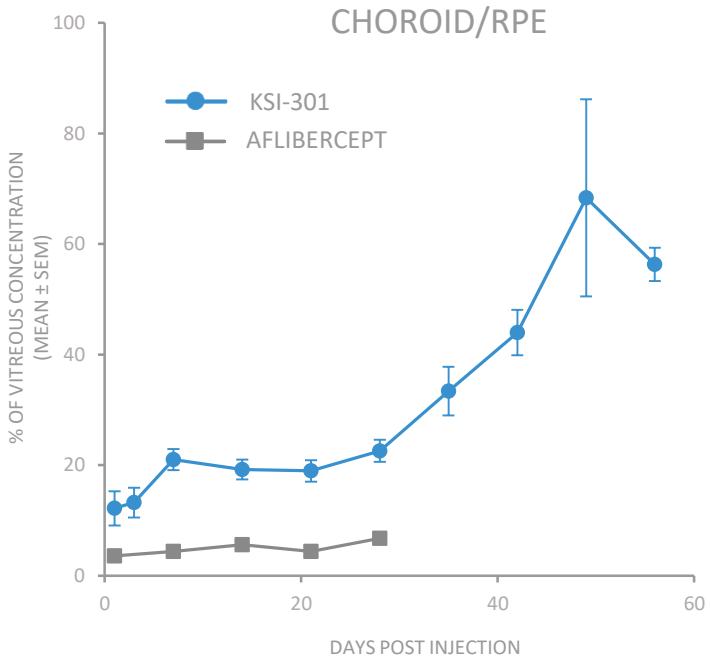
KSI-301 bioconjugate has enhanced bioavailability because of its phosphorylcholine biopolymer

- Ocular tissue bioavailability after single intravitreal injection
- Data from in vivo rabbit models
- Despite 8x larger size, KSI-301 has 8x greater access to retina than aflibercept

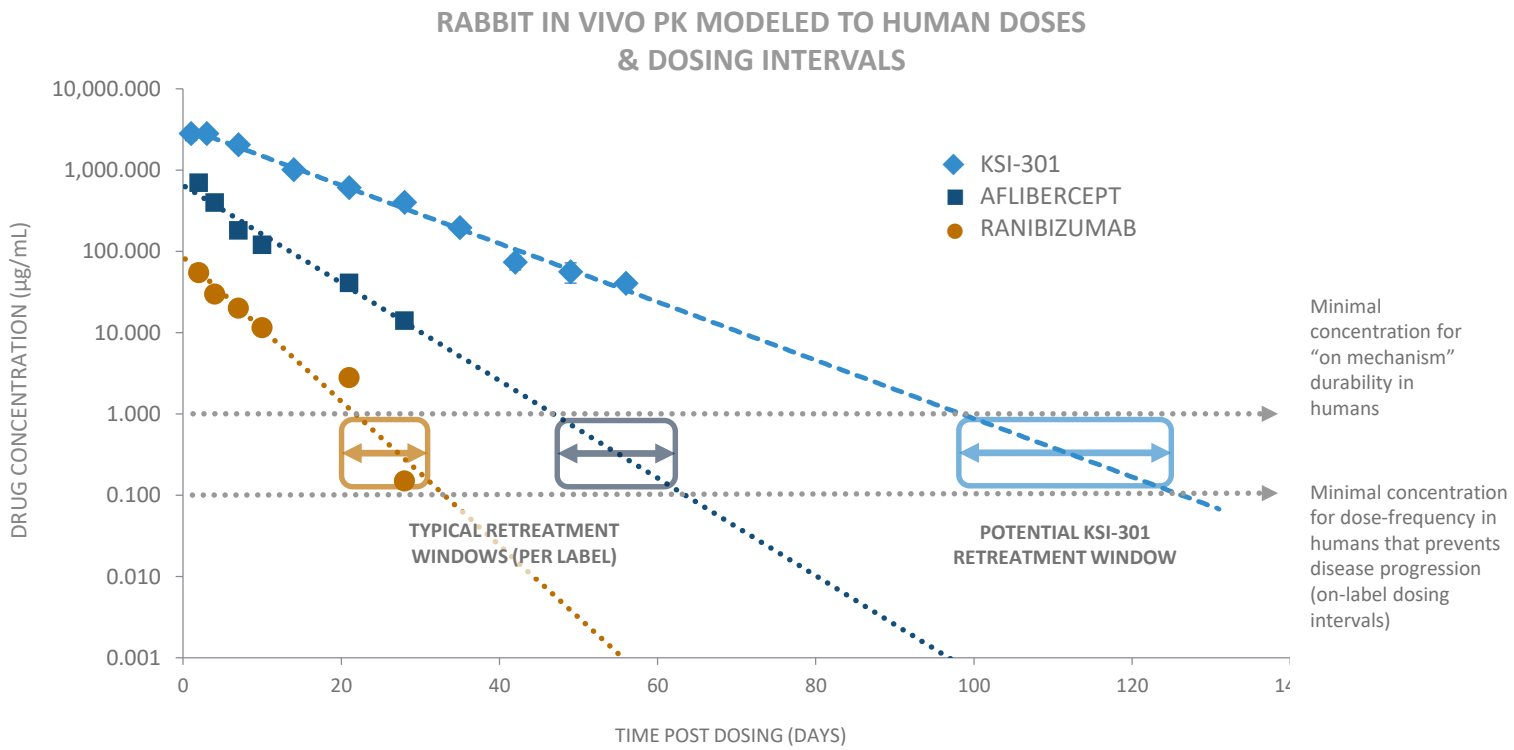




Covance rabbit ADME (absorption, distribution, metabolism, elimination) model: Aflibercept data (2008): EVER Congress Portoroz Slovenia Struble (Covance), Koehler-Stec (Regeneron)
KSI-301 data (2017): Struble (Covance), Kodiak / Error bars reflects standard error of the mean

KSI-301 bioconjugate has potential for extended durability and a more flexible retreatment window

- KSI-301 bioconjugate has a flatter (better) ocular PK curve
- An increasing concentration advantage versus other biologics over time



Ranibizumab data: Gaudrealt et al (2007) IOVS 46(2) 726 Gaudrealt et al (2007) Retina 27(9) 1260 Bakri et al (2007) Ophthalmol 114(12) 2179 || Aflibercept data: EVER Congress Portoroz Slovenia (2008) Struble (Covance) Koehler-Stec (Regeneron). Aflibercept data adjusted arithmetically to reflect 2,000µg dose administered (based on rabbit in vivo dosing of 500 µg) || KSI-301 data adjusted arithmetically to reflect 5,000 µg dose administered (based on rabbit in vivo dosing of 725 µg). Error bars reflects standard error of the mean

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KSI-301's "high science" design positions it well versus competing efforts

- Using science to solve the durability problem
- Integrates seamlessly - over 26 million intravitreal injections of anti-VEGFs performed globally in 2018
- The single "go-to" anti-VEGF for all patients, encompassing all stages of therapy (induction, maintenance, supplemental)

	GENE THERAPY	PORT DELIVERY SYSTEM	COATED MICROSPHERE DRUG DEPOT	NEW BIOLOGIC TARGETS	KSI-301
Targets Validated Pathway	✓	✓	±	±	✓
Delivery	Surgery (complications)	Surgery (complications)	Intravitreal Injection	Intravitreal Injection	Intravitreal Injection
Anticipated Durability Improvement	✓	✓	✓	?	✓
No Supplemental Injections	✗	✗	✗	✓	✓
No Residual Foreign Material in the Eye	✓	✗	✗	✓	✓
Use for early disease modification	✗	✗	±	±	✓

OUR GOAL WITH KSI-301

Develop KSI-301 to be “first off-the-shelf” by meeting the individual needs of key stakeholders globally

- **Patient & Patient’s Family**
- **Retina Specialist & Care Team**
- **Retina Practice Owner**
- **Payer**
- **Health System**

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PHASE 1 CLINICAL STUDY

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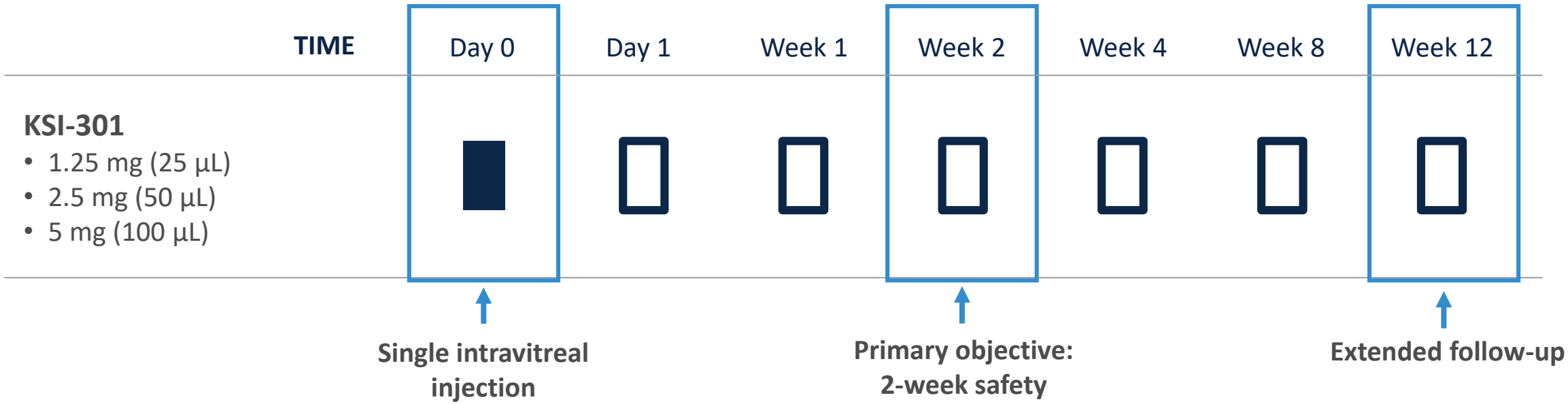
KSI-301 PHASE 1 CLINICAL STUDY

Single Ascending Dose Study in Diabetic Macular Edema Patients



- 9 subjects – 3 per dosing cohort, 7-day safety review between each cohort
- Conducted at 5 US sites
- Single dose with observation to 12 weeks (no retreatment)

PATIENT INFORMATION

Demographic and Ocular Baseline Characteristics

DEMOGRAPHICS	
Age (years, mean)	62
Gender	7M, 2F
OCULAR CHARACTERISTICS Study Eye, n=9	
Previously Received Anti-VEGF	8/9
Number of Anti-VEGF Treatments in Last Year median (range)	3 (0, 7)
Time Since Last Anti-VEGF, Days median (range)	95 (52,>365)
IOP, mmHg mean (SD)	15 (2)
OCT Central Subfield Thickness, Microns mean (SD)	565 (182)
Baseline BCVA, ETDRS Letters mean (SD)	47 (12)
Baseline BCVA, Snellen Equivalent	20/100

SAFETY OUTCOMES

Every dose level was well-tolerated through the 12 week follow-up period

- No dose limiting toxicities
- No drug-related adverse events or drug-related serious adverse events
- No intraocular inflammation
- Optically clear media after each injection
- No anti-drug antibodies detected in any patient
- Systemic levels 1/3 of bevacizumab C_{max} and 1/6 of D28 level (1.25mg dose)[1]

NUMBER OF PATIENTS WITH ANY AE=4	N	SERIOUS	RELATED
OCULAR AEs			
Foreign body sensation	1	N	N
Subconjunctival hemorrhage	2	N	N
Floaters (reported in both eyes)	1	N	N
Visual flashes	1	N	N
NON-OCULAR AEs			
Fall	1	N	N
Worsening of coronary artery disease	1	Y	N
Swollen Feet	1	N	N

1. Avery RL et al. Retina. 2017 Oct;37(10):1847-1858

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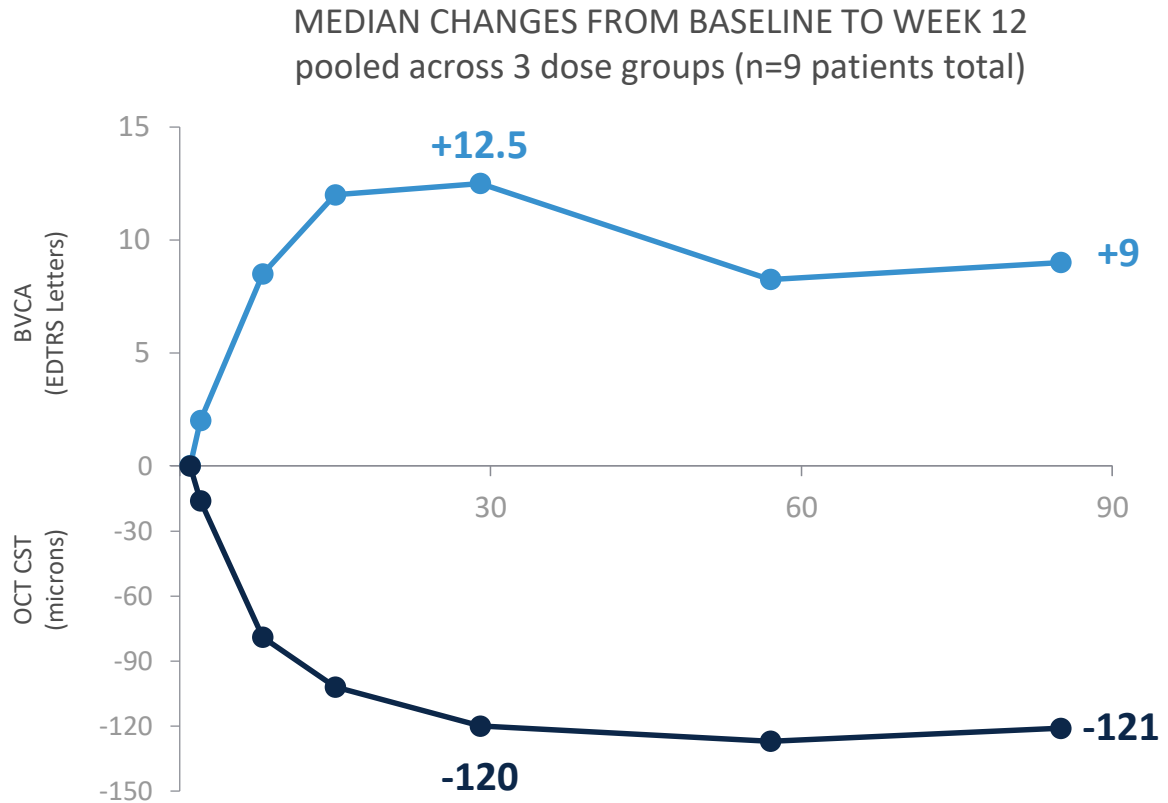
Improvements in vision and retinal thickness after single-dose KSI-301 maintained through 12 weeks

- Rapid, high magnitude responses as early as 1 week after dosing
- Durable improvements out to 12 weeks

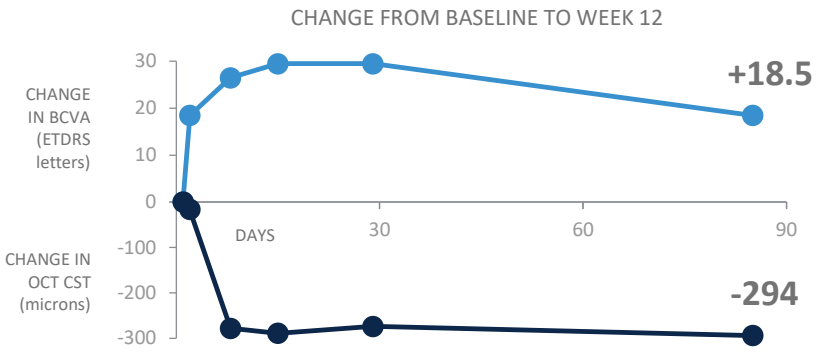


KSI-301

CASE EXAMPLES

KSI-301

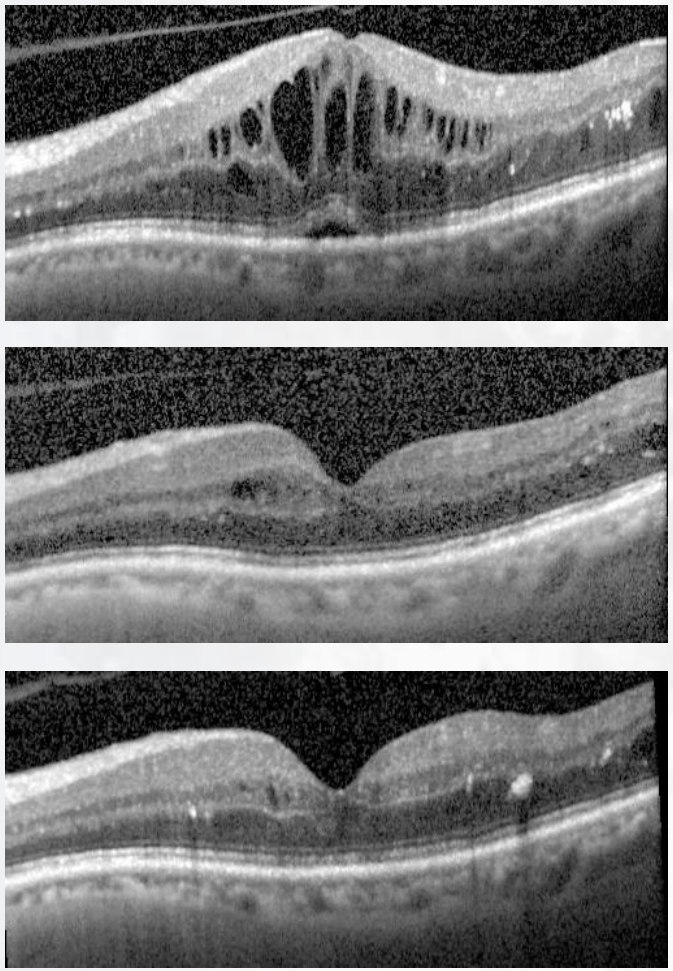
CASE EXAMPLE 1



CLINICAL HISTORY SUMMARY (SITE REPORTED):

	Date	Treatment	VA Snellen	CST
Retrospective	1/2018		20/40	-
	4/2018	Bevacizumab	20/40	431
	6/2018	Bevacizumab	20/60	655
	8/2018	**KSI-301**	20/160	636

Resolution of macular edema sustained through 12 weeks in patient with prior suboptimal response



BASELINE

Single dose
KSI-301 (5 mg)

WEEK 4

WEEK 12

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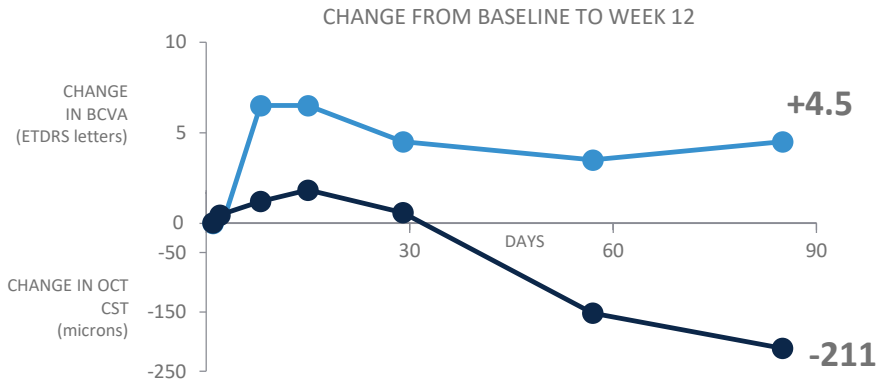
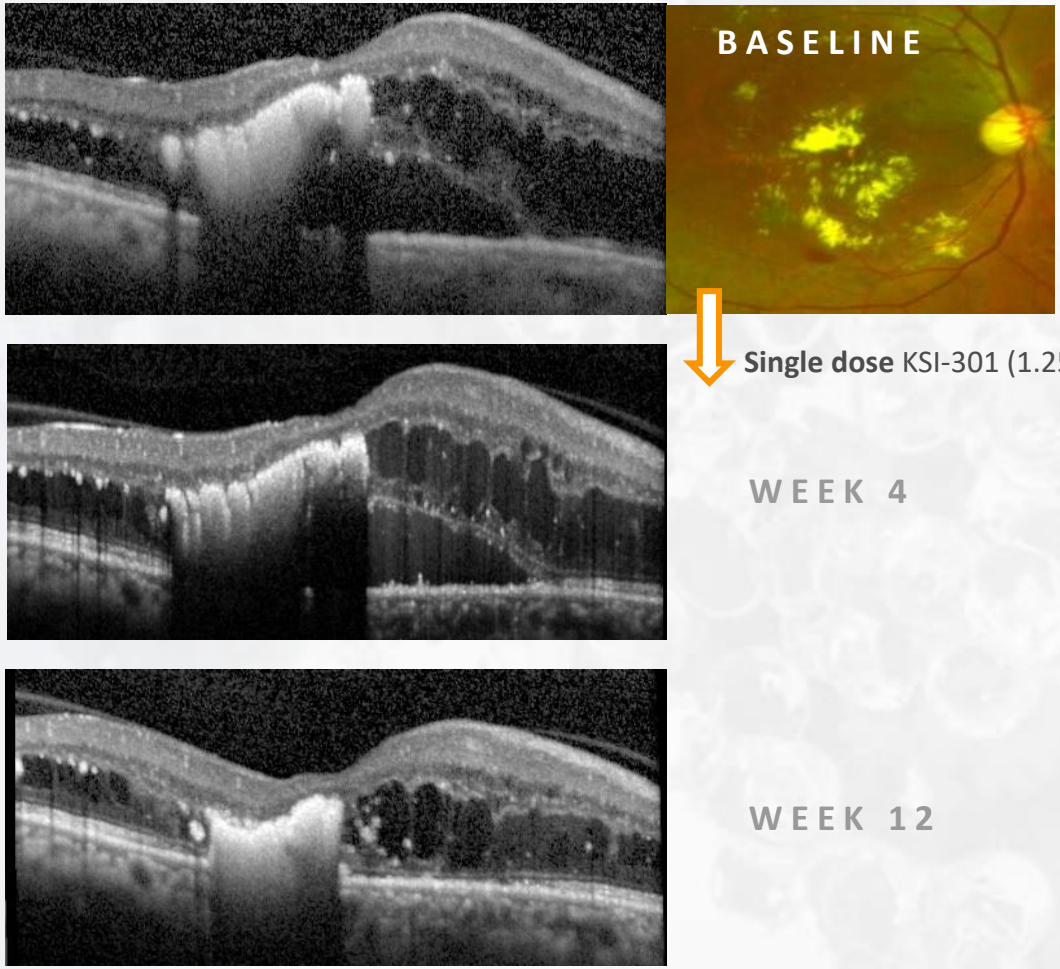
CASE EXAMPLE 2



CLINICAL HISTORY SUMMARY (SITE REPORTED):

	Date	Treatment	VA Snellen
Retrospective	1/2018	Bevacizumab	20/60
	3/2018	Bevacizumab	20/100
	4/2018	Bevacizumab	20/150
	5/2018		20/350
	7/2018	**KSI-301**	20/80

Resolution of subretinal fluid through 12 weeks in patient with **extensive foveal lipid exudates**



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IMPORTANT EARLY DEVELOPMENT QUESTIONS

SUCCESSFULLY ADDRESSED

- Manufacturability
- Optical Clarity
- Target Tissue Access
- Safety
- Speed of Onset
- Potency
- Clinical Durability

PHASE 1B

OPEN LABEL STUDY

Wet AMD, DME, RVO

- Open-label study to further explore KSI-301 safety, bioactivity, durability
- Actively enrolling (NCT03790852)
- Approximately 50 patients
- Anti-VEGF **treatment naïve** patients only
- **3 loading doses** in every patient
- **6-month follow-up** to explore durability (vision, retinal thickness)
- Indication-specific re-evaluation and retreatment criteria
- On track to complete recruitment in 1st half of 2019

Primary Endpoint

Week		0	4	8	12	16	20	24	28	32	36
KSI-301 5 or 2.5 mg	wAMD	■	■	■		□	□	□	□	□	
	DME	■	■	■		□	□	□	□	□	
	RVO	■	■	■		□	□	□	□	□	

■ KSI-301 injection □ Dosing as needed (PRN) ▢ Retreatment criteria assessment

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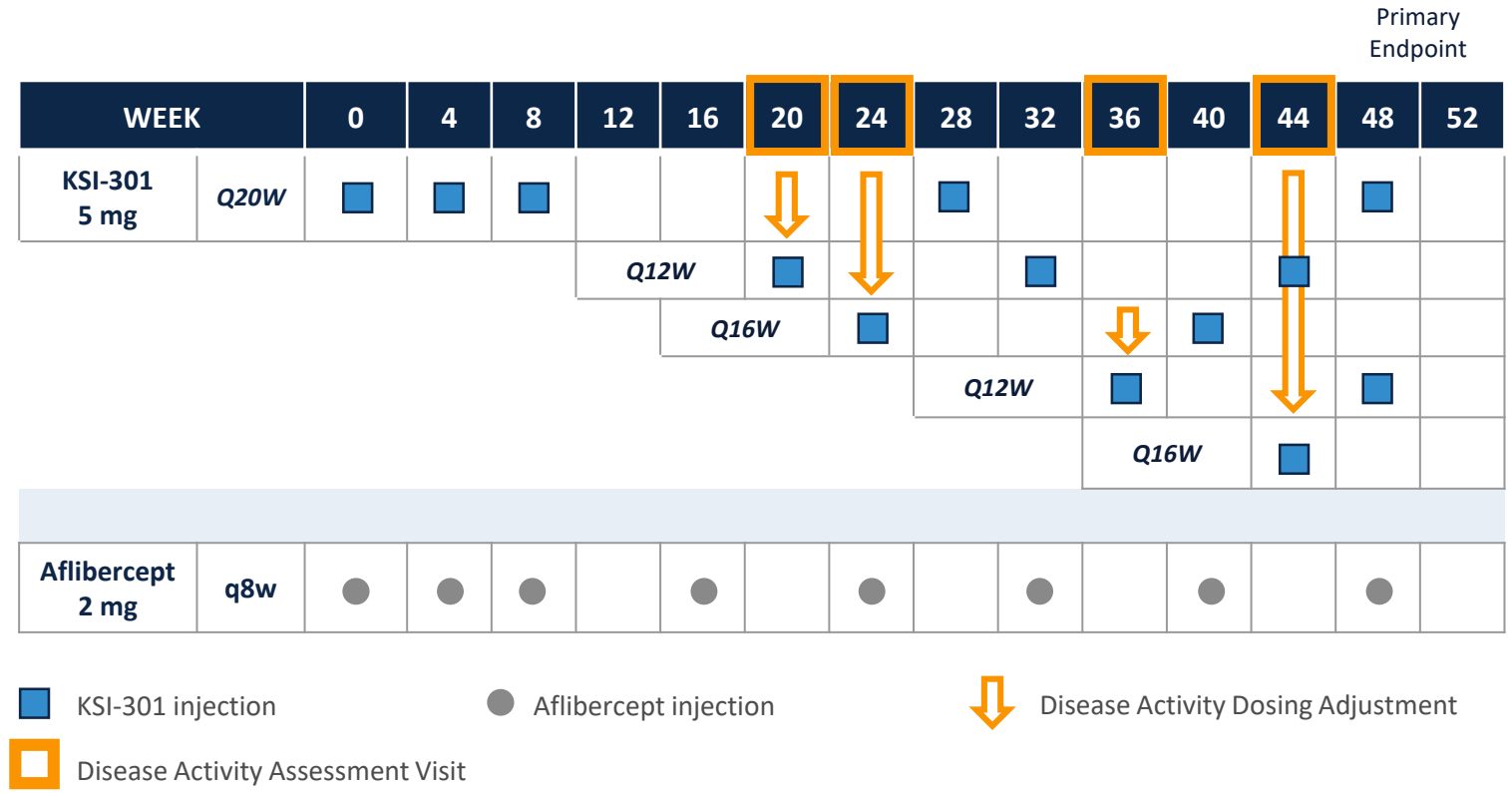
PHASE 2

RANDOMIZED CONTROLLED STUDY

In wet AMD (US/EU)

Pivotal study design, head-to-head against standard of care aflibercept

- **All patients ≥Q12W with KSI-301**
- **As infrequent as Q20W dosing with KSI-301**
- Non-inferiority pivotal design study
- Estimated 400 patients (US/EU)
- On track to begin enrolling in 2Q 2019, with interim (durability) in 2020 and primary (vision) in 2021



KSI-301 POTENTIAL

2019-2020 CATALYSTS

KSI-301

KEY TAKEAWAYS

KSI-301 is a novel **Antibody Biopolymer Conjugate** that inhibits VEGF

- Same where it matters, different where it counts

Phase 1a single ascending dose study results

- Well-tolerated at all dose levels
- **Rapid-onset, high-magnitude improvements sustained to 12 weeks**

Kodiak executing on a comprehensive and aggressive clinical strategy for KSI-301 in retinal vascular diseases

- Phase 1b data in 2019
- Initiating multiple Phase 2 pivotal studies in 2019

Objective

The “go-to” anti-VEGF, meeting all treatment needs for VEGF-mediated retinal vascular diseases

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