Unique Oncolytic Virus Therapies for Multiple Solid Tumors

May 2026

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FORWARD LOOKING STATEMENTS

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. In some cases forward-looking statements can be identified by terminology such as "may," "should," "potential," "continue," "expects," "anticipates," "intends," "plans," "believes," "estimates," and similar expressions, and include statements regarding oncolytic viruses (OVs) being promising cancer therapeutics; the multiple potential value opportunities for VCN-01; the regulatory status expected to facilitate VCN-01 development; potential access to a priority review voucher; the therapeutic potential of VCN-01 and other Theriva OVs; the ability of VCN-01 and other Theriva OVs to overcome key OV challenges; the potential of VCN-01 to enable immuno-oncology therapies in refractory tumors; the clinical advancement of VCN-01 and other Theriva OVs in diverse cancer indications (including pancreatic ductal adenocarcinoma, head and neck cancer, ovarian cancer, colorectal cancer, and retinoblastoma) and the projected milestones. Important factors that could cause actual results to differ materially from current expectations include, among others, the Company's ability to enroll patients as planned and reach clinical trial milestones when anticipated; the Company's ability to complete clinical trials on time and achieve the desired results and benefits; the Company's product candidates demonstrating safety and effectiveness, including positive clinical data that demonstrates VCN-01 may lead to improved clinical outcomes for patients; the Company's ability to obtain regulatory approval for commercialization of product candidates or to comply with ongoing regulatory requirements; regulatory limitations relating to the Company's ability to promote or commercialize their product candidates for the specific indications; acceptance of product candidates in the marketplace and the successful development, marketing or sale of the Company's products; developments by competitors that render such products obsolete or non-competitive; the Company's ability to maintain license agreements; the continued maintenance and growth of the Company's patent estate; the ability to continue to remain well financed; and other factors described in the Company's Annual Report on Form 10-K for the year ended December 31, 2025 and its other filings with the SEC, including subsequent periodic reports on Forms 10-Q and current reports on Form 8-K. The information in this release is provided only as of the date of this release, and Theriva Biologics undertakes no obligation to update any forward-looking statements contained in this release on account of new information, future events, or otherwise, except as required by law.

OVERVIEW

- VCN-01 lead candidate undergoing Phase 3 clinical trial preparation[1]
  - First-line metastatic pancreatic cancer
  - Retinoblastoma (rare pediatric disease)
- VCN-01 Phase 1 clinical data support potential in additional indications[2]
- VCN-X innovative discovery engine developing a distinct product pipeline of oncolytic viruses
- Seeking financing and/or partnerships to execute planned pivotal trial programs

Financial Snapshot	
Exchange	NYSE American
Ticker	TOVX
Cash (31Mar2026)	$14.4M
Projected cash runway	Q1 2027
Average Daily Volume (3M)	27.1M[3]
Locations	Rockville, MD Barcelona, Spain

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[1]In combination with standard-of-care chemotherapy. [2]Colorectal cancer, head-and neck squamous cell carcinoma; combinations with immune checkpoint inhibitors, CAR-T cells. [3]At 13May2026 Yahoo! Finance

THERIVA CURRENT PIPELINE

Candidate	Target	Pre-IND	Phase 1	Phase 2	Phase 3	Sites	Status*
VCN-01 Selective, Stroma Degrading OV	Pancreatic Cancer (IV) with gemcitabine/nab-paclitaxel					Multicenter Spain, USA	**Preparing Phase 3** Orphan Drug Designation US, EU Fast Track Designation US
	Retinoblastoma (IVit)					Sant Joan de Déu Hospital Materno-Infantil Universitat de Barcelona	**Planning Phase 2/3** Orphan Drug Designation US, EU Rare Pediatric Disease Designation US
	Brain tumors (IV)					LEEDS	**Phase 1 On-going**
VCN-X and Albumin Shield OVs	Solid tumors (IV)					ICO Institut Català d'Oncologia; IDIBELL	**Preclinical Studies On-going**
SYN-004 [1] Oral β-lactamase	**Prevention of aGVHD in allo-HCT**					Washington University in St. Louis	**Phase 1b/2a On-going**

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*Based on Management's current beliefs and expectations. aGVHD acute graft-vs-host disease; allo-HCT allogeneic hematopoietic cell transplant. IV intravenous. IVit intravitreal. [1]Final Phase 1b/2a study cohort contingent on grant funding or partnership.

VCN-01 IS A UNIQUELY ENGINEERED HUMAN ADENOVIRUS 5

Designed to have multiple anti-tumor actions

Systemic

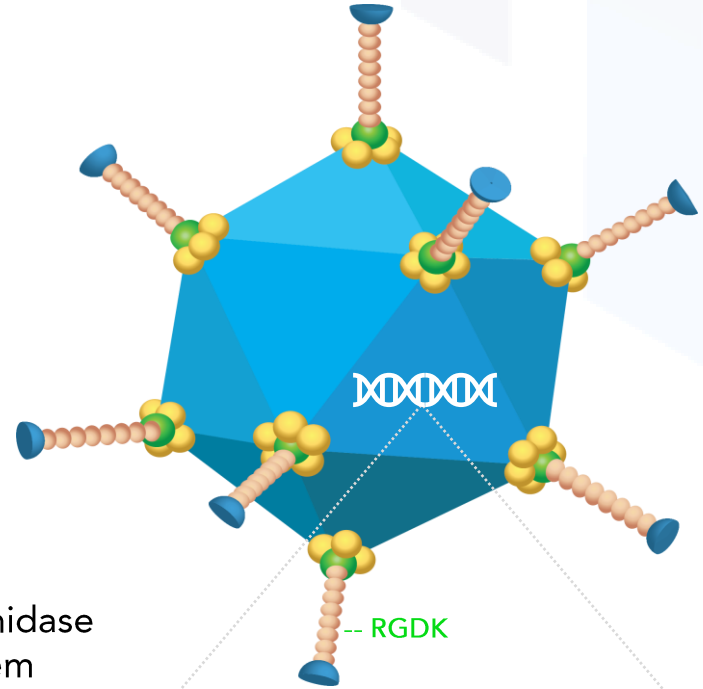
VCN-01 targets both primary and metastatic lesions

Selective

Virus replicates only in tumor cells
Liver detargeted

Stroma Degrading

Replicating virus expresses PH20 hyaluronidase
Exposes solid tumors to the immune system
and diverse co-administered therapies



E2F binding +++ → E1a-Δ24 → MLP → PH20

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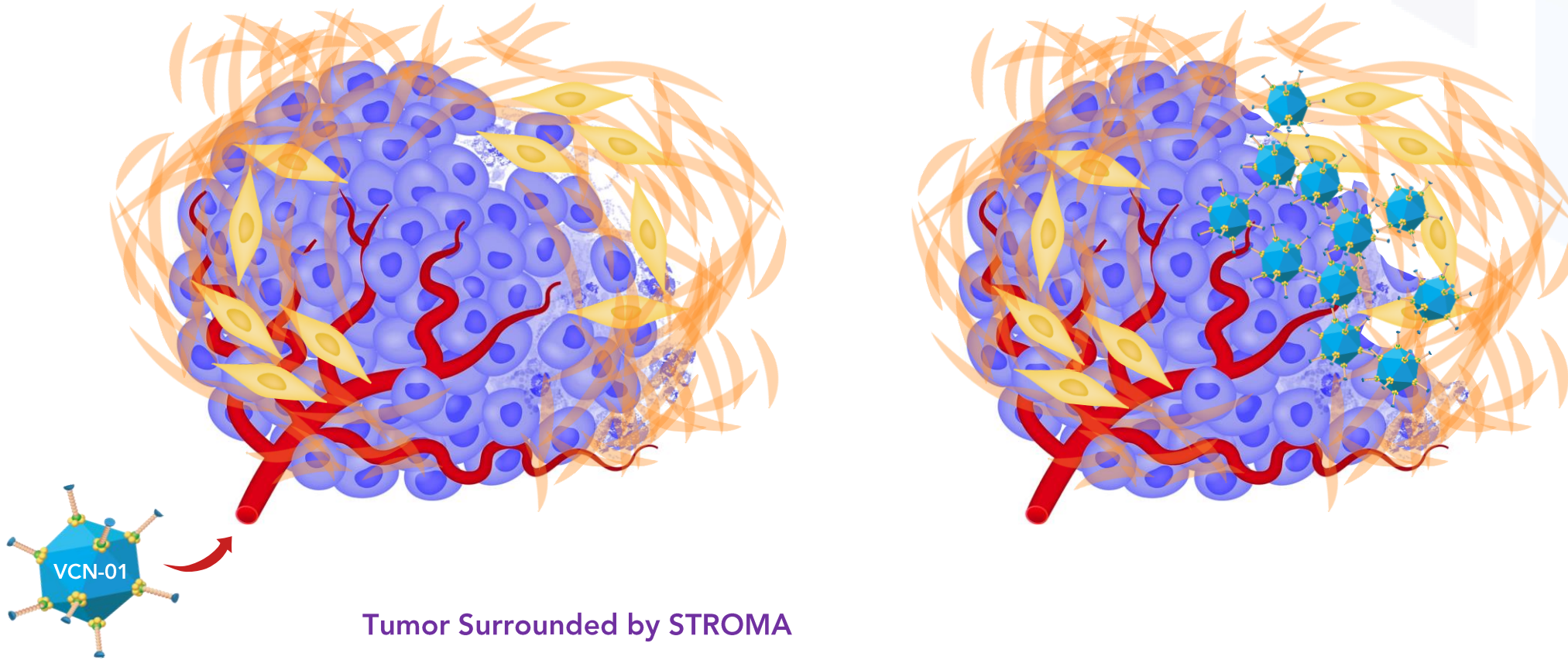
Replication enhanced by significantly increased E2F binding. E1a-Δ24 gene deletion means replication only in cells with a defective Rb-E2F pathway.
Fiber shaft RGDK modification. PH20 soluble human testicular hyaluronidase enzyme expression is under control of the virus major late promoter (MLP).

VCN-01 IS A UNIQUELY ENGINEERED HUMAN ADENOVIRUS 5

1 SYSTEMIC delivers VCN-01 to the primary tumor and metastases and detargets the liver

2 SELECTIVE replication at very high levels lyses tumor cells directly without harming healthy tissues



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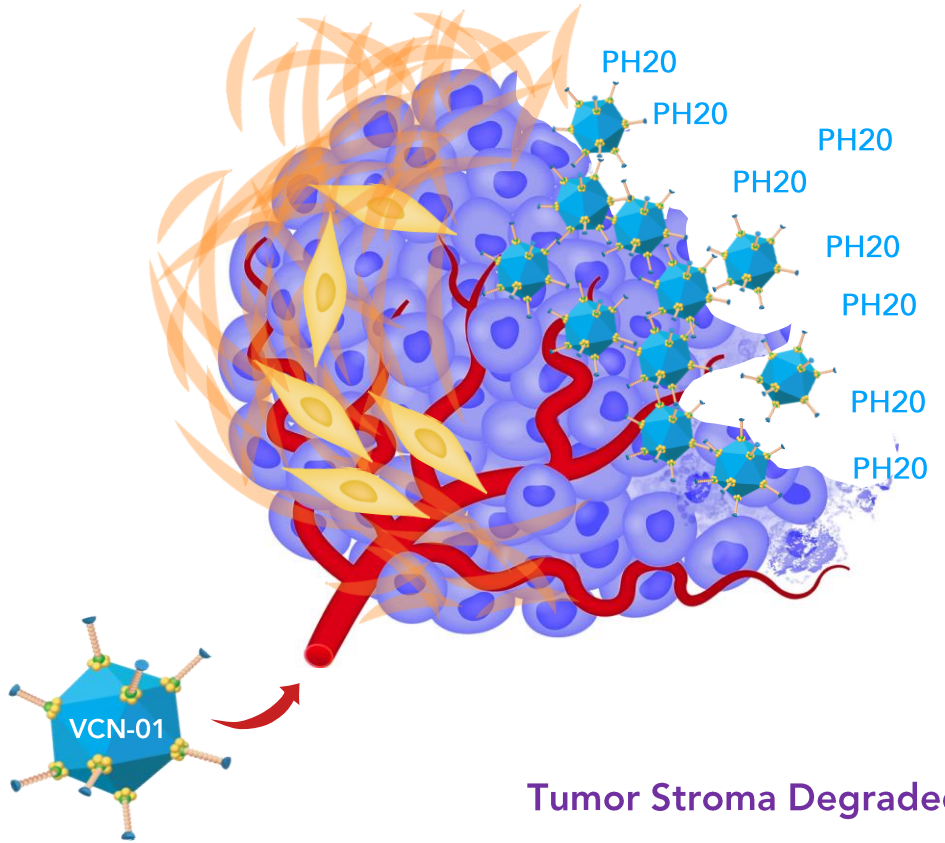
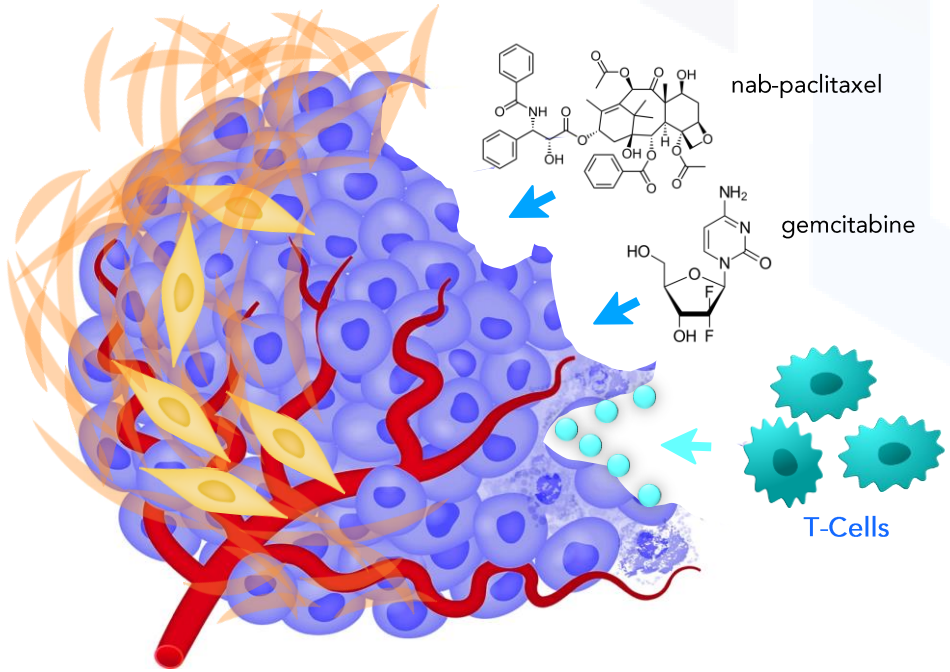
VCN-01 DESIGNED TO HAVE MULTIPLE ANTI-TUMOR ACTIONS

3 STROMA degradation by PH20 facilitates solid tumor access and destruction by coadministered cancer therapies



4 IMMUNOGENIC actions of VCN-01 turn "cold" tumors "hot" and elicit an anti-tumor immune response



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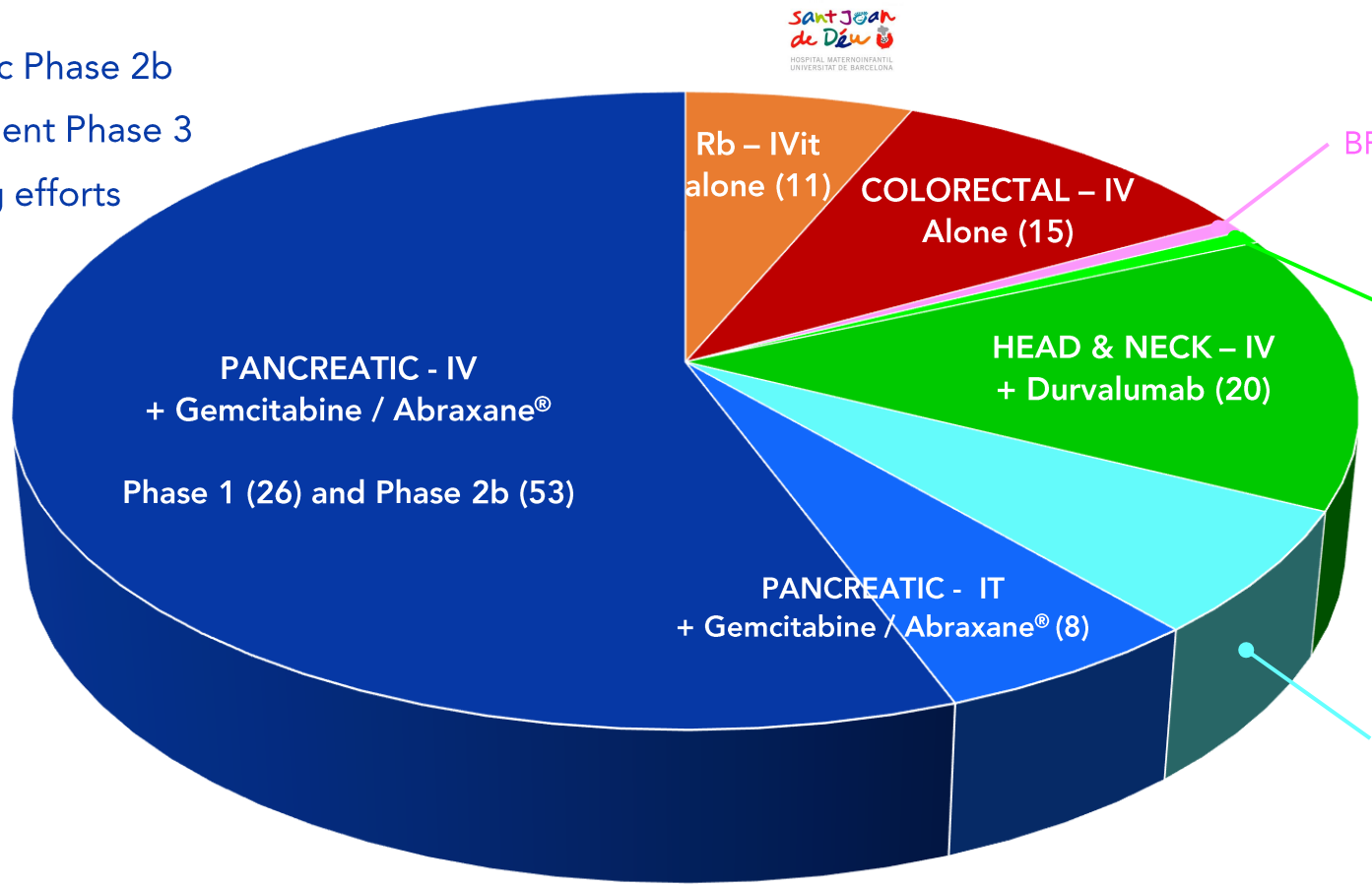
VCN-01 EXTENSIVE CLINICAL EXPERIENCE

144 patients treated with VCN-01 in multiple indications and combinations

- Successful pancreatic Phase 2b
- EMA & FDA agreement Phase 3
- On-going partnering efforts



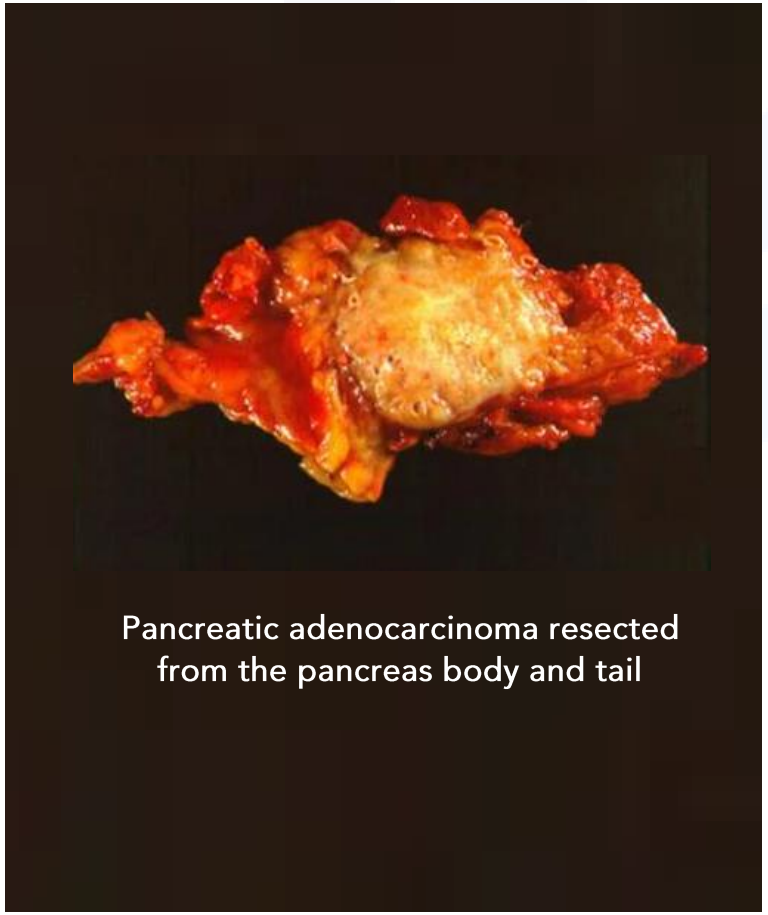
(Number of VCN-01 Patients Treated in Parentheses)

Abraxane® - nab-paclitaxel. Durvalumab (IMFINZI®, AstraZeneca) is an anti-PD-L1 mAb immune checkpoint inhibitor. huCART-meso are autologous T cells engineered to express an extracellular single chain variable fragment (scFv) with mesothelin specificity. IT intratumoral. IV intravenous. IVit intravitreal. Rb retinoblastoma (includes 2 compassionate use patients).

VCN-01 LEAD INDICATION PANCREATIC CANCER

Highly fatal cancer protected by dense tumor stroma

- Orphan disease, highest mortality of all solid tumors
  - Median survival 8-11 months for metastatic disease[1,2]
  - USA est. 67,440 new cases and 51,980 deaths in 2025[3]
- Hyaluronic acid in stroma is associated with reduced treatment efficacy and poor prognosis[4]
  - VCN-01 designed to degrade hyaluronic acid
- Incidence is growing worldwide
  - Est. treatment market ~$2.9B (2024) ~$6.0B (2030)[5]



Pancreatic adenocarcinoma resected from the pancreas body and tail

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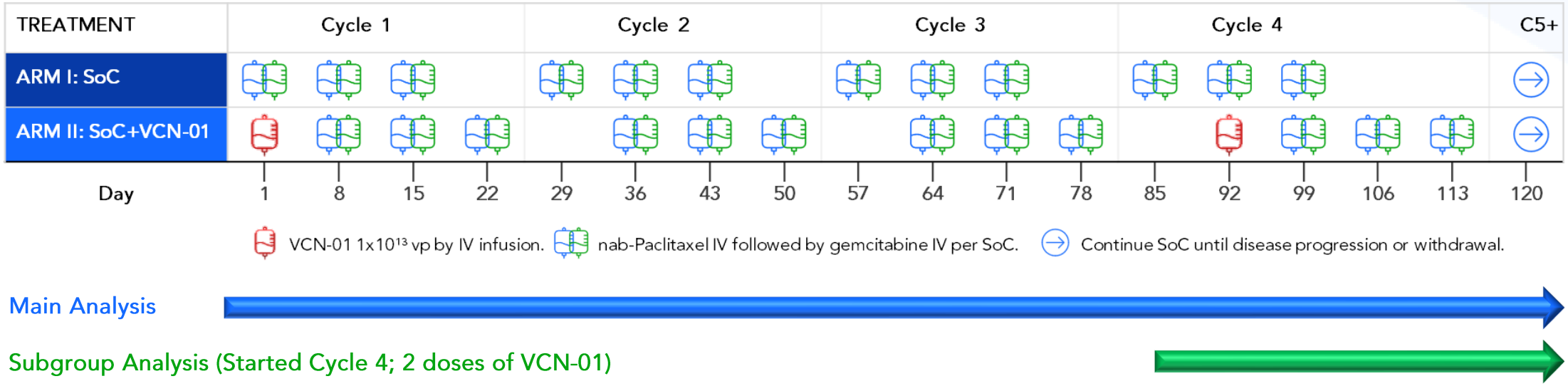
[1]Michael (2019) BMC Palliat Care 18:13, Bengtsson (2020) Sci Rep 10:16425, Carioli (2021) Ann Oncol 32:478, ASCO Pancreatic Cancer Statistics. [2]SEER Cancer Stat Facts: Pancreatic Cancer website. [3]American Cancer Society. Cancer Facts & Figures 2025. Atlanta: American Cancer Society; 2025. [4]Tahkola (2021) Sci Rep 11:12216, Placencio-Hickok (2022) Pancreatology 22:92. [5]Grand View Research website.

VIRAGE PANCREATIC CANCER PHASE 2B CLINICAL TRIAL

Multicenter, open-label, randomized, controlled trial (NCT05673811)

- Patients with newly-diagnosed metastatic pancreatic ductal adenocarcinoma (first line)
- Primary endpoints overall survival, VCN-01 AE profile and tolerability
- Secondary endpoints included progression free survival, duration of response



Study designed with 80% power to detect a hazard ratio (HR) of 0.51-0.65 for OS with a 1-sided alpha of 0.05 (2-sided alpha 0.1). P-values are for 2-sided statistical analysis using the log rank test.

VIRAGE DEMOGRAPHICS

Parameter	Statistics	Main Analysis (FAS)[1]		Subgroup Analysis (Two Doses VCN-01)[2]	
		SoC	VCN-01 + SoC	SoC C4+	2*VCN-01 + SoC
No. Patients (% of cohort)	n (%)	48	48	29 (60.4)	34 (70.8)
Age (years)	Mean (SD)	69.5 (8.25)	66.0 (8.97)	68.1 (8.31)	65.8 (9.71)
	Median	68.5	66.0	66.0	66.0
<65 yrs	n (%)	10 (20.8)	18 (37.5)	8 (27.6)	13 (38.2)
≥65 yrs	n (%)	38 (79.2)	30 (62.5)	21 (72.4)	21 (61.8)
Gender					
Male	n (%)	22 (45.8)	23 (47.9)	13 (44.8)	17 (50.0)
Female	n (%)	26 (54.2)	25 (52.1)	16 (55.2)	17 (50.0)
ECOG at randomization					
0	n (%)	17 (35.4)	19 (39.6)	14 (48.3)	15 (44.1)
1	n (%)	31 (64.6)	29 (60.4)	15 (51.7)	19 (55.9)
ECOG at Cycle 4					
0	n (%)	..	..	6 (20.7)	14 (41.2)
1	n (%)	..	..	23 (79.3)	19 (55.9)
2	n (%)	..	..	..	1 (2.9)

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[1]Full Analysis Set (FAS) patients received at least 1 dose of gemcitabine/nab-paclitaxel (SoC) in each arm.
[2]Compares patients in ARM II who received a second dose of VCN-01 followed 1-week later by cycle 4 of SoC to patients in ARM I who started cycle 4 of SoC (C4+). *These patients were not preselected for inclusion in subgroup analysis; anyone who reached cycle 4 was included.*

VIRAGE TREATMENT EMERGENT ADVERSE EVENTS

VCN-01 related events occurring in ≥5% of patients

Preferred Term – No. Patients (%)[a,b]	All Grades		Grade 3-4	
	First Dose (n=53)	Second Dose (n=36)	First Dose (n=53)	Second Dose (n=36)
Pyrexia	31 (58.5%)	19 (52.7%)	1 (1.9%)	-
Nausea	16 (30.2%)	6 (16.6%)	-	-
Asthenia	15 (28.3%)	4 (11.1%)	1 (1.9%)	1 (2.8%)
Vomiting	14 (26.4%)	9 (25.0%)	-	-
Aspartate aminotransferase increased	10 (18.9%)	1 (2.7%)	5 (9.4%)	-
Alanine aminotransferase increased	9 (16.9%)	1 (2.7%)	4 (7.5%)	-
Influenza like illness	9 (16.9%)	1 (2.7%)	7 (13.2%)	-
Transaminases increased	8 (15.1%)	2 (5.5%)	4 (7.5%)	-
Platelet count decreased/Thrombocytopenia	7 (13.2%)	1 (2.7%)	1 (1.9%)	-
Decreased appetite	7 (13.2%)	1 (2.7%)	-	-
Diarrhea	7 (13.2%)	3 (5.5%)	-	-
Fatigue	5 (9.4%)	-	-	-
Chills	5 (9.4%)	7 (19.4%)	-	-
Lymphocyte count decreased	4 (7.5%)	1 (2.7%)	3 (5.7%)	-
Gamma-glutamyl transferase increased	4 (5.7%)	-	3 (5.7%)	-
Anemia	3 (5.7%)	-	1 (1.9%)	-
Cytokine release syndrome	3 (5.7%)	2 (5.5%)	-	-

Additional Grade 3/4 AEs occurring <5%

Treatment-induced liver injury 2 (3.8%)
Neutrophil count decreased 1 (1.9%)
Lipase increased 1 (1.9%)
Alkaline phosphatase increased 1 (1.9%)
Neutropenia 1 (1.9%)
Hypotension 1 (1.9%)

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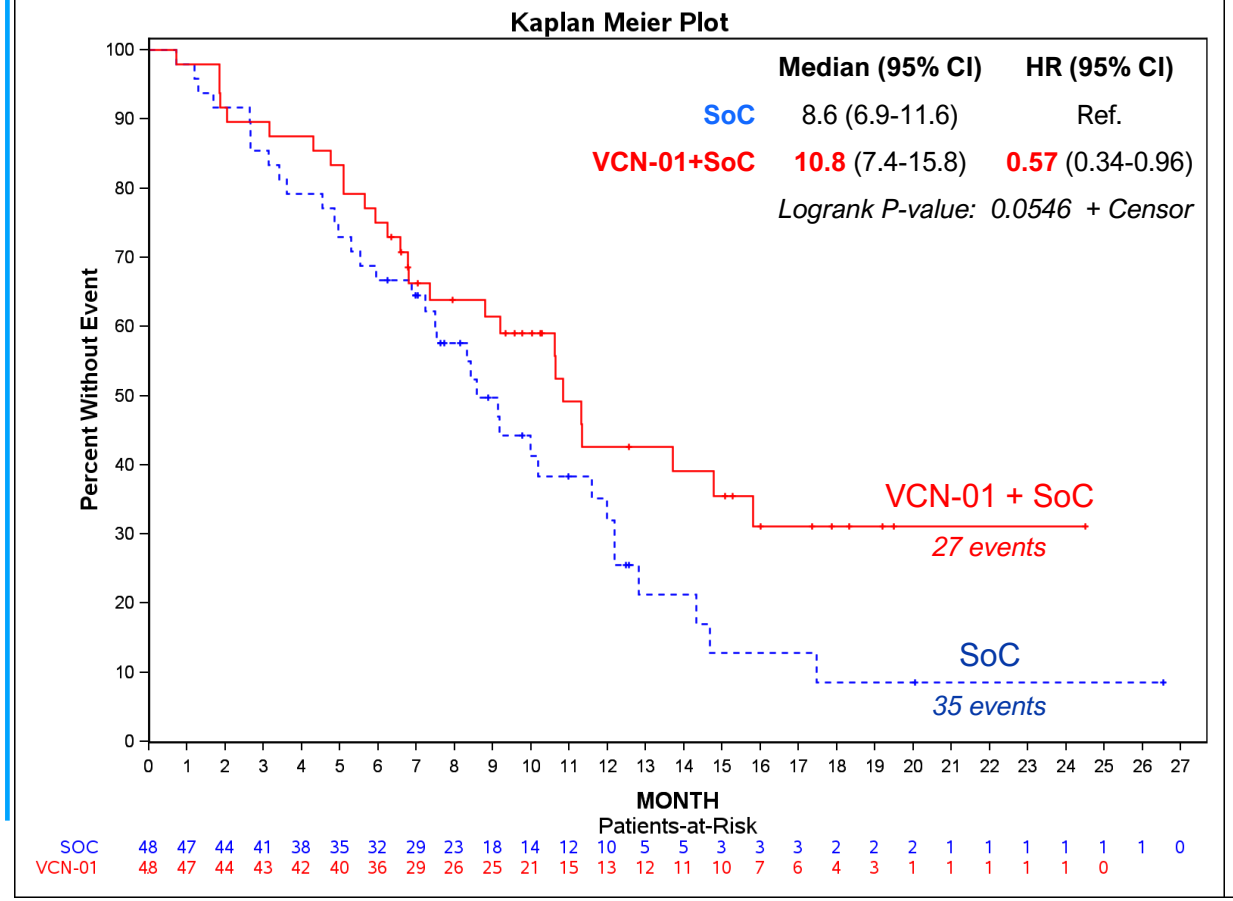
[a]Number of patients and [b]percentage of patients dosed presenting the treatment related adverse event (TEAE).
Note: events with a temporal continuity are accounted as only one with the highest grade

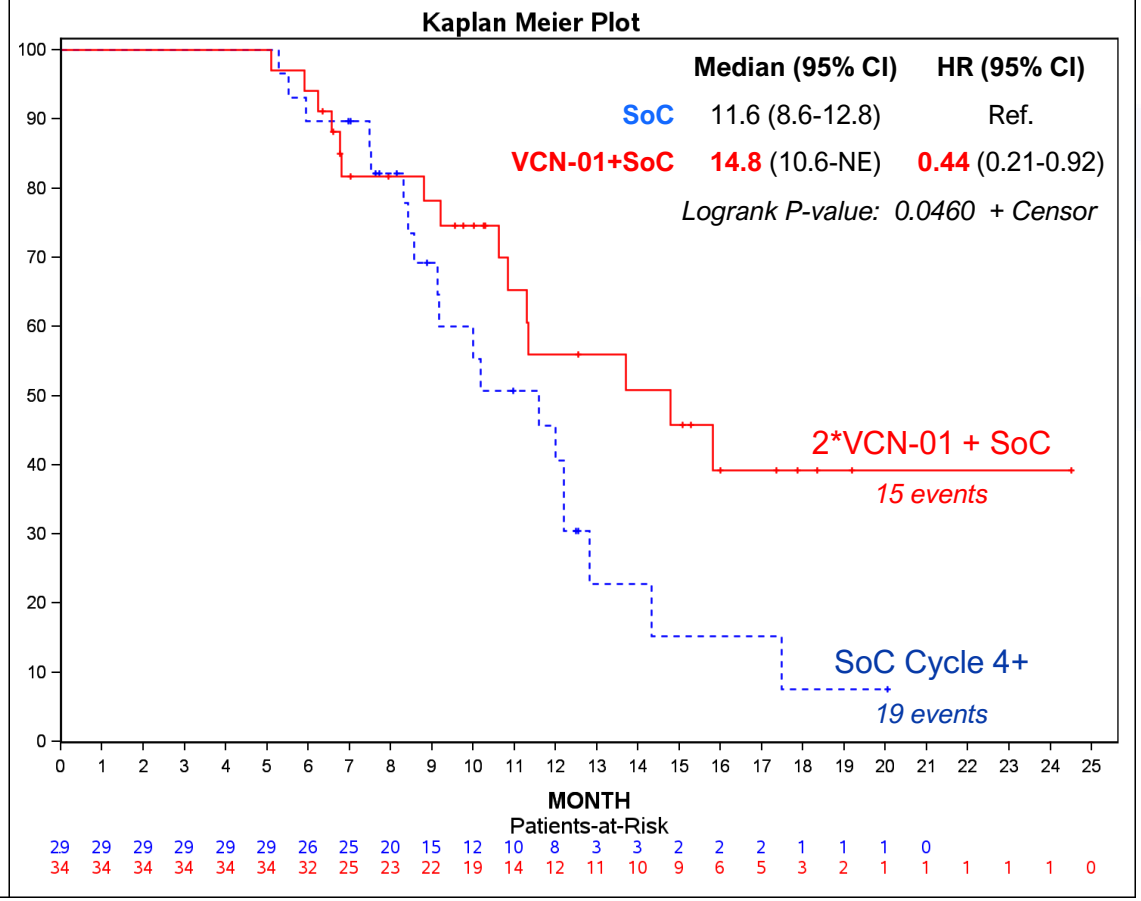
INCREASED OVERALL SURVIVAL IN VCN-01+SOC ARM

Greater OS improvement with two VCN-01 doses

Main Analysis Population[1]



Two doses of VCN-01[2]

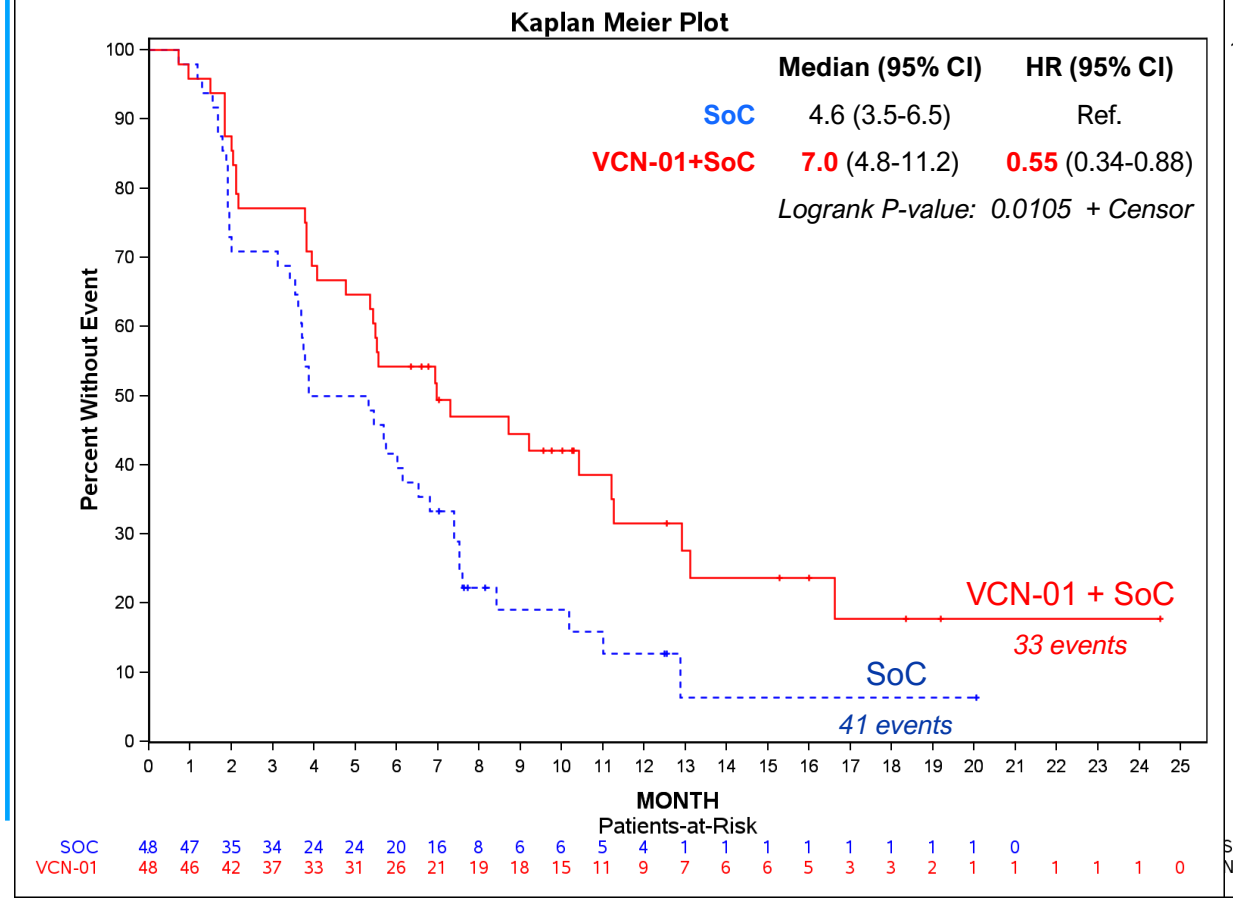


[1]Full Analysis Set (FAS) compares patients who received at least 1 dose of gemcitabine/nab-paclitaxel (SoC) in each arm. [2]Compares patients in ARM II who received a second dose of VCN-01 followed 1-week later by cycle 4 of SoC to patients in ARM I who started cycle 4 of SoC. 70.8% of patients in the VCN-01+SoC arm received 2 doses of VCN-01.

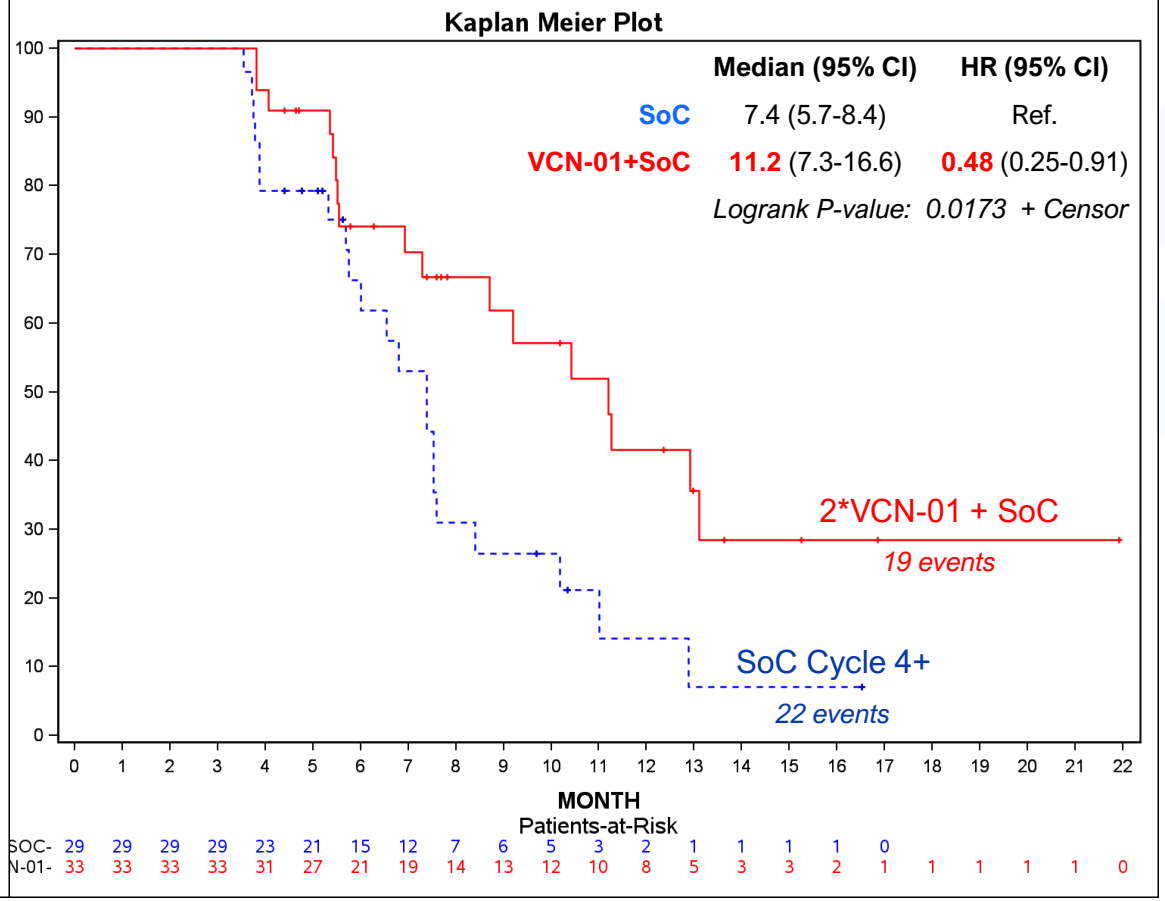
INCREASED PROGRESSION-FREE SURVIVAL IN VCN-01+SOC ARM

Greater PFS improvement with two VCN-01 doses

Main Analysis Population[1]



Two doses of VCN-01[2]

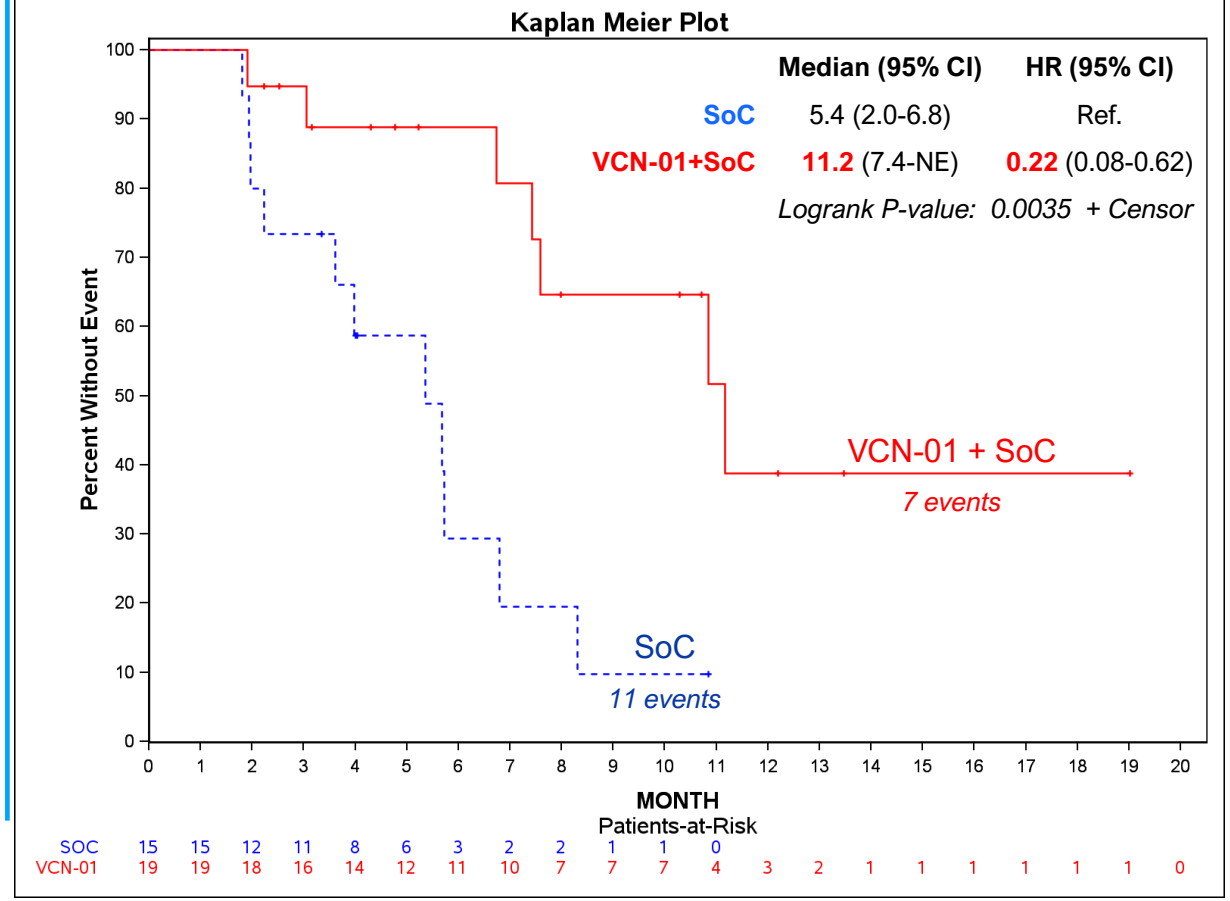


[1]Full Analysis Set (FAS) compares patients who received at least 1 dose of gemcitabine/nab-paclitaxel (SoC) in each arm. [2]Compares patients in ARM II who received a second dose of VCN-01 followed 1-week later by the cycle 4 of SoC to patients in ARM I who started cycle 4 of SoC. 70.8% of patients in the VCN-01+SoC arm received 2 doses of VCN-01.

DURATION OF RESPONSE DOUBLED IN VCN-01+SOC ARM

Increased response rate with two VCN-01 doses

Patients who had a Partial or Complete Response[1]



Objective Response Rates (ORR)[1]

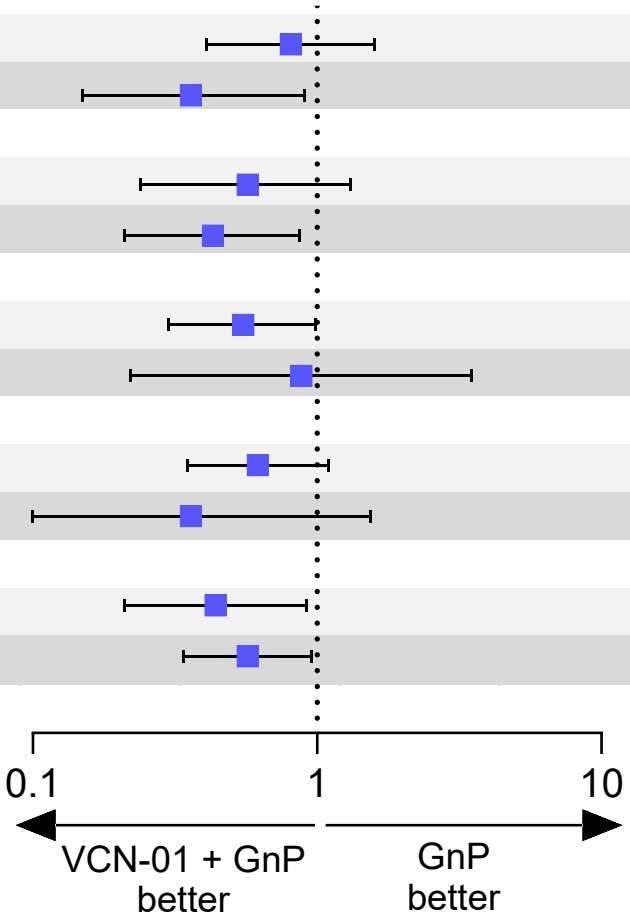
	Main Analysis (FAS)[1]		Subgroup (2 Doses VCN-01)[2]	
N (%)	SoC	VCN-01 + SoC	SoC C4+	2*VCN-01 + SoC
Patients	48	48	29	34
CR	0	1	0	1
PR	15	18	14	18
ORR	15 (31.3%)	19 (39.6)	14 (48.3%)	19 (55.9%)
		p=0.314		*p=0.533*

[1]According to RECIST 1.1 using CT scan evaluations by sites. Data are for the Full Analysis Set (FAS) which comprises patients who received at least 1 dose of gemcitabine/nab-paclitaxel (SoC) chemotherapy in each arm. CR complete response, PR partial response.

OS BENEFITS CONSISTENT ACROSS DIFFERENT SUBGROUPS

OS benefit regardless of hepatic metastases or age group

Subgroup	GnP	VCN-01 + GnP	Hazard Ratio for Death (95% Confidence Interval)	*HR p-value*
Age	*nºevents / nº patients*			
< 70 years	17/26	18/33	**0.75** (0.39-1.45)	0.391
≥ 70 years	18/22	9/15	**0.39** (0.16-0.98)	0.044
Sex				
Male	16/22	12/23	**0.57** (0.24-1.31)	0.183
Female	19/26	15/25	**0.43** (0.21-0.87)	0.020
Hepatic metastases				
Yes	31/41	19/33	**0.55** (0.30-0.99)	0.047
No	4/7	8/15	**0.88** (0.22-3.50)	0.861
Nº of metastatic sites				
≤ 2	28/41	24/41	**0.62** (0.35-1.10)	0.100
> 2	7/7	3/7	**0.36** (0.08-1.55)	0.169
Doses of VCN-01*				
2 doses	19/29	15/34	**0.44** (0.21-0.92)	0.029
Overall (1 or 2 doses)	35/48	27/48	**0.57** (0.34-0.96)	0.034



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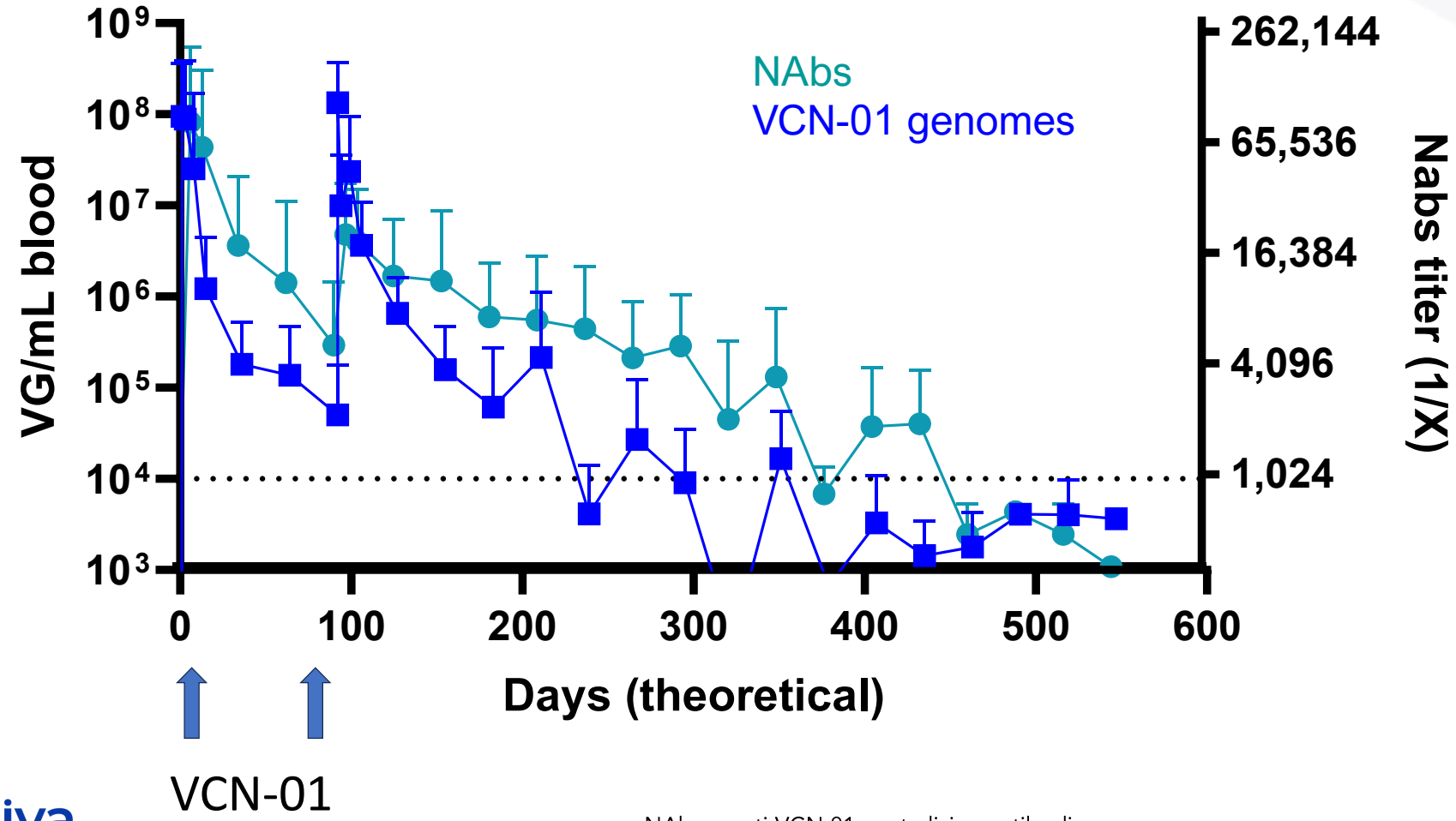
VIRAGE BIOLOGICAL DATA SUPPORT REPEAT DOSING

Circulating viral genomes and NAbs similar after both VCN-01 doses



NAbs = anti-VCN-01 neutralizing antibodies

VIRAGE PHASE 2B TRIAL KEY FINDINGS

Data provide strong support for Phase 3 trial

- Enrolled a “real world” population of older and more fragile patients
- Increased overall and progression free survival (OS, PFS) and duration of response (DoR) observed in VCN-01 plus gemcitabine/nab-paclitaxel SoC treatment group compared to SoC alone
  - Additional survival benefit observed in patients receiving two doses VCN-01
  - Greater improvements at later timepoints consistent with immune MOA
- Acceptable AE profile consistent with prior VCN-01 clinical trials
- Better hazard ratios for OS, PFS, DoR vs gemcitabine/nab-paclitaxel than reported in NALIRIFOX Phase 3 trial[1]

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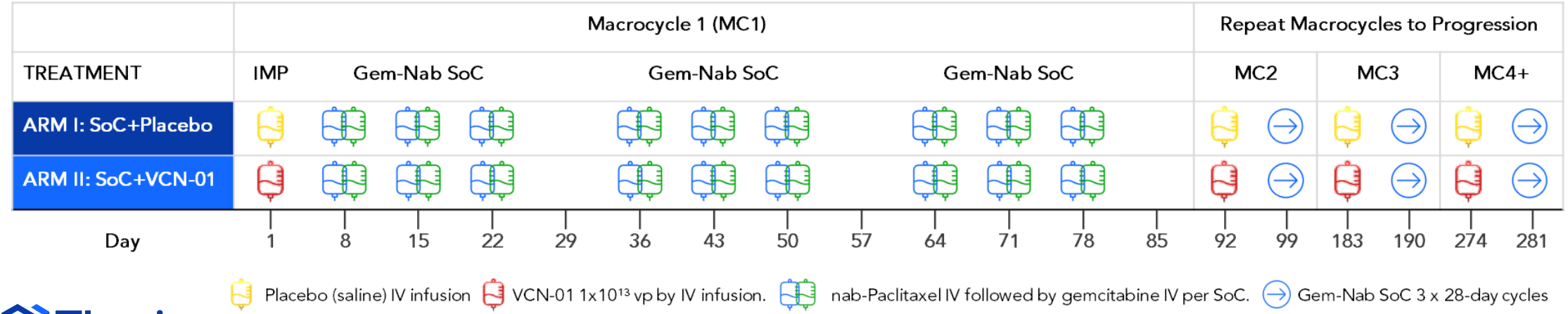
[1]Wainberg (2023) Lancet 402:1272. NALIRIFOX leucovorin+ 5-FU+liposomal irinotecan+oxaliplatin.

PROPOSED PHASE 3 TRIAL IN PANCREATIC CANCER

Repeated VCN-01 dosing intended to improve outcomes

- Patients with newly-diagnosed metastatic pancreatic ductal adenocarcinoma (first line)
- Multicenter, double-blinded, placebo-controlled, randomized (1:1), controlled trial
- Repeated "macrocycles" comprising 1 IV dose of VCN-01 ($1x10^{13}$ vp) or placebo administered 7-days prior to 3 x 28-day cycles of gemcitabine/nab-paclitaxel SoC
- Primary endpoint: overall survival
- Adaptive design with an initial sample size of ~450 patients



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REGULATORY ALIGNMENT ON PHASE 3 TRIAL DESIGN

FDA and EMA agreement on critical protocol elements

- Agreed on proposed inclusion/exclusion criteria, study arms, primary endpoint (OS) and secondary endpoints (including PFS, ORR)
- Agreed on proposed sample size and adaptive trial design with two interim analyses
- Agreed that a single study, if successful, could support a marketing authorization/BLA
- Recognized the survival benefit of the second VCN-01 dose in the VIRAGE trial
- Recommended removing the week off between macrocycles and considering more frequent dosing[1]

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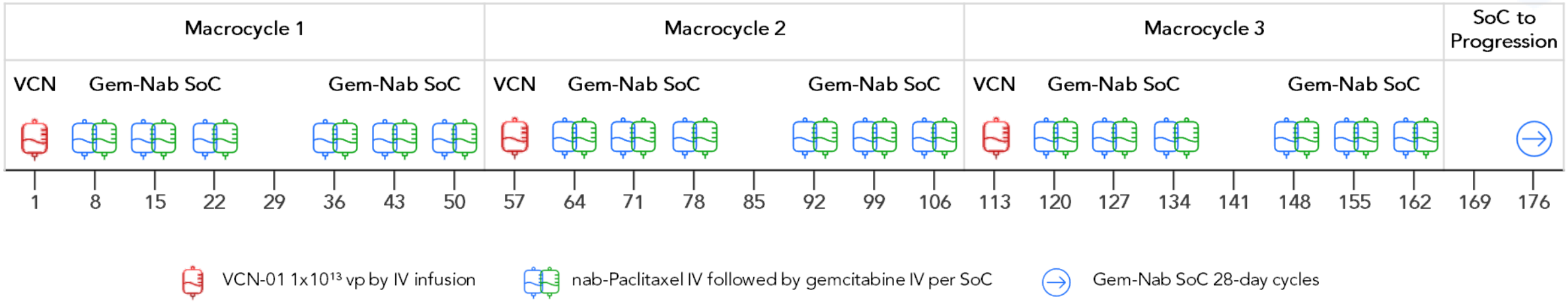
[1]EMA European Medicines Agency. ORR objective response rate. OS overall survival. PFS progression-free survival.

VCN-01 ADDITIONAL PDAC CLINICAL ACTIVITIES

- Phase 2a study to explore feasibility of more frequent VCN-01 dosing to potentially improve outcomes in a Phase 3 trial
  - Small (n=6 evaluable), single-arm, open-label study at a single center in Spain
  - VCN-01 administered every 2 months (up to 3 doses) in combination with SoC chemotherapy[1]
  - Primary endpoints safety/tolerability, VCN-01 pharmacokinetics
  - Secondary endpoints survival (OS, PFS), response (ORR, DoR), circulating anti-VCN-01 NAbs

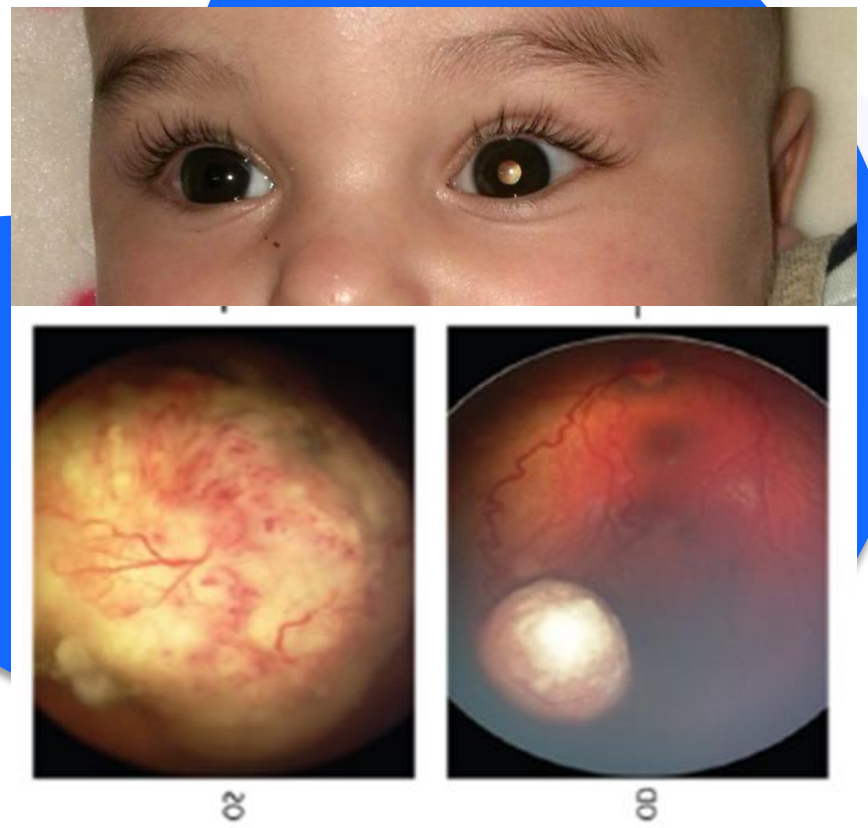


[1]Median progression free survival 4.6 months (140 days) in control arm of VIRAGE Phase 2b clinical trial, so patients in this study expected to receive at least 2 VCN-01 doses on the proposed schedule. DoR duration of response. Gem-Nab gemcitabine nab-paclitaxel. NAb neutralizing antibody. ORR objective response rate. OS overall survival. PFS progression free survival. SoC standard of care

RETINOBLASTOMA, A RARE PEDIATRIC MALIGNANCY

Potentially lower-cost pathway to market

- Retinoblastoma (Rb) is an ultrarare orphan indication that accounts for 2-3% of all childhood cancers[1]
  - 200-300 cases each year in the USA, EU
  - >1,000 cases each year in India, China[2-4]
- VCN-01 designed for intravitreal administration with chemotherapy
- VCN-01 positioned as 3rd line for patients who fail standard therapy
  - Prevent eye enucleation; ideally preserve vision
  - No approved standard-of-care



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[1]https://www.cancer.org/cancer/retinoblastoma/about/key-statistics.html. [2]Stacey (2021) Ophthalmology 128:1369. [3]One Retinoblastoma World Map https://map.1rbw.org/. [4]For additional details and references see Appendix. IMAGE: Courtesy of Hospital Sant Joan de Déu, Barcelona

VCN-01 DEVELOPMENT IN RETINOBLASTOMA

Leverage Rare Pediatric Disease Designation

- Phase 1 Investigator Sponsored Study Completed H1 2024
  - Data in last line/rescue patients demonstrated acceptable AE profile and 3 complete responses
- Finalizing a Phase 2-3 Protocol for Discussion with the FDA
  - Intravitreal VCN-01 plus intravitreal topotecan to treat refractory Rb patients with vitreous seeds
  - Expect a relatively small number of patients for potential pivotal trial
  - Data from VCN-01 compassionate use supports feasibility of proposed dosing regimen
- Key Value Proposition Lies in Potential Priority Review Voucher (PRV)
  - VCN-01 has US and EU Orphan Drug Designation and Rare Pediatric Disease Designation (RPDD)
  - PRV available to drugs with RPDD that are approved by 30 Sep 2029
  - PRV can be monetized (PRV sold for $200M in January 2026)[1]

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[1]FiercePharma 14Jan2026. "JPM26: Jazz's $200M voucher sale shows drumbeat of rising prices isn't stopping"

VCN-01 PHASE 1 ISS Last-Line/Rescue Therapy

Promising antitumor activity

- Nine children ages 2-7 with refractory RB facing imminent enucleation
  - Anticipated eye survival 37-43 days
- VCN-01 intravitreal administration on Days 1 and 15
  - Additional eye conservative therapy administered if evidence of potential benefit
- Safety Visit at Day 42
  - Potential response evaluated by RB-RECIST
- Eye survival follow-up to Day 180+

ID	Dose (vp/eye) x Day	Response Day 42	Follow-Up
1	2E09 x D1, 15	SD	Enucleation (D44)
2	2E10 x D1, 15	PR	Enucleation (D62)
4	2E10 x D1, 15, 64	PR[1]	CR (>5 years)
5	2E10 x D1, 15	SD	Enucleation (D56)
8	2E10 x D1, 15	PR[1]	Enucleation (D170)
9	2E10 x D1, 15	PD	Enucleation (D37)
11	2E10 x D1, 15	PR[1]	CR (>1 year)
12	2E10 x D1	PR[1]	CR (>1 year)
13	2E10 x D1, 15	SD[1]	Enucleation (D93)

[1]Administered additional eye conservative therapy. CR complete response. D day. PD progressive disease. PR partial response. SD stable disease. Primary VCN-01 related AE uveitis managed with immunosuppressants.

SAFETY DATA PHASE1 TRIAL OF VCN-01 in RB

Adverse reactions (events associated with VCN-01, monotherapy)

MedDRA System Organ Class (SOC)	Description/Nature of the event (MedDRA PT)	All Grades		Grade 3	
		n	%	n	%
Eye disorders	Uveitis	7	78%	4	44%
Eye disorders	Palpebral edema	1	11%	0	0%
Eye disorders	Conjunctival hyperemia	1	11%	0	0%
Eye disorders	Iridocyclitis (eye inflammation)	1	11%	0	0%

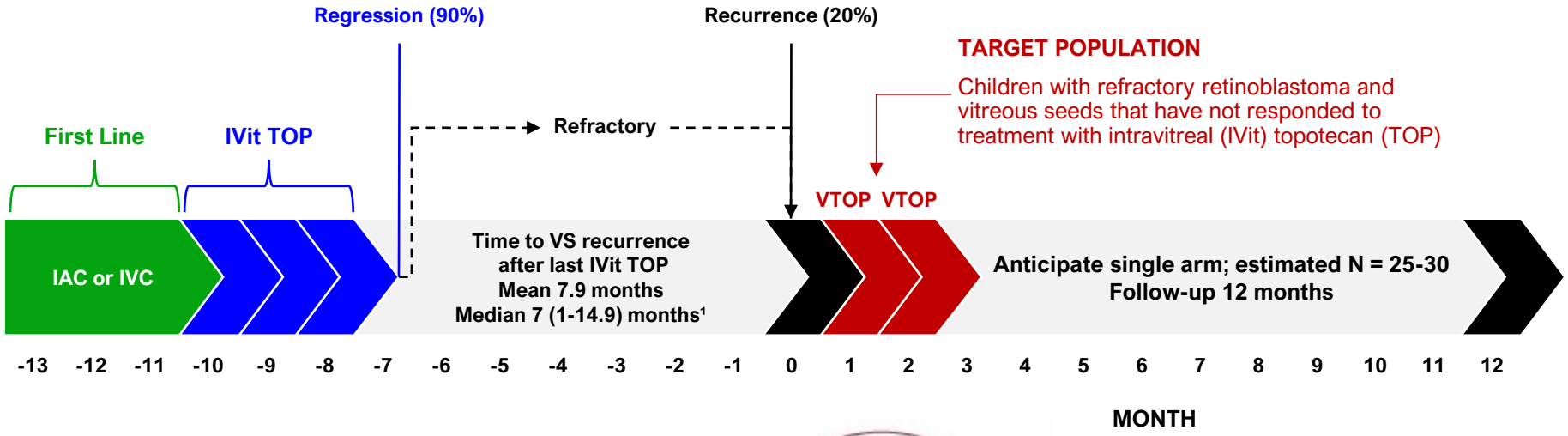
Serious Adverse Events

MedDRA System Organ Class (SOC)	Description/Nature of the event (MedDRA PT)	VCN-01 Relatedness	Number events
Eye disorders	Uveitis*	Related	3
Eye disorders	Retinal detachment	Non-related	1
Eye disorders	Hyphema	Non-related	1
Eye disorders	Eye excision (enucleation)	Non-related	1

*One patient with G3 uveitis did not receive the second dose due to medical decision and also experienced glaucoma requiring treatment.

VIRAGE-RB: PROPOSED PHASE 2/3 TRIAL DESIGN

Intravitreal (IVit) VCN-01 plus topotecan (VTOP) in refractory Rb



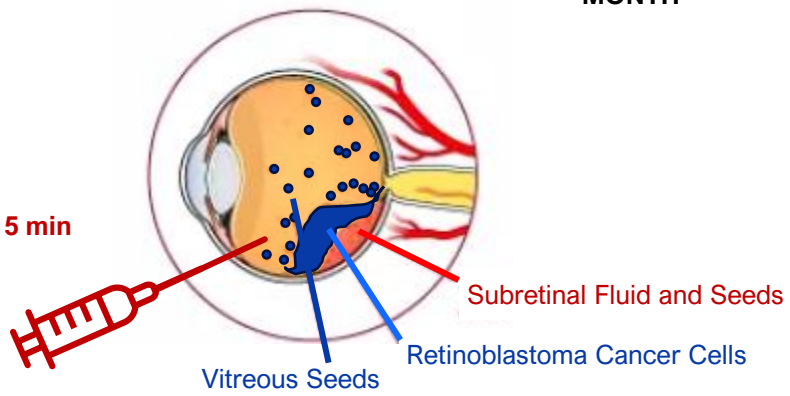
ENDPOINTS

1º Enucleation rate at 12 months
Safety/tolerability

2º Event free survival
Response rate
Visual acuity

Exploratory endpoints liquid biopsy[2]

VTOP: IVit VCN-01 (2E10 vp) followed 15 min later by IVit topotecan (100 µg)



[1]Illustrative mean event timing from Sen Ophthalmol 2024;131:1215 for mean 3.5 doses of 30 µg topotecan q4 weeks until regression (90% IVC first line).
[2]Berry Am J Ophthalmol 2025; 263:188-205. IAC intraarterial chemotherapy (melphalan + topotecan). IVC intravenous chemotherapy (carboplatin + etoposide + vincristine). IVit intravitreal. Eye image adapted from https://together.stjude.org/en-us/conditions/cancers/retinoblastoma.html

VIRAGE-RB PROPOSES PHASE 2/3 TRIAL TIMING

- Anticipate a single arm study with estimated N=25-30 patients[1]
  - Global patient recruitment with treatment at 3-4 reference sites (US, Spain, India)
  - Budget ~$12M (including manufacturing)
- Targeting potential approval before 30 Sep 2029
  - FDA, EMA submissions Q2-3 2026
  - First patient enrolment expected Dec 2026
  - Final data expected Q1 2029
  - Rolling BLA submission

Theriva BIOLOGICS

[1]Budget, sample size and timelines are all contingent on regulatory agreement with the proposed clinical trial and product manufacturing

THERIVA OV PIPELINE DISCOVERY AND DEVELOPMENT

Advancing founders' decades of world leading OV innovation

Common Features

Clinically-tested Adenovirus Expressing PH20 Hyaluronidase to Degrade Tumor Stroma

+

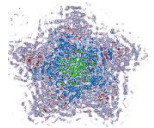
Additional Transgene Payloads to Enhance Anti-tumor Immune Response and Potentially Enable Single-Agent therapy

+ / -

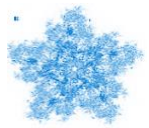
Albumin Shield™ To Prevent Neutralization by Anti-viral Antibodies and Facilitate IV Multidosing

Product Specific Features

VCN-01 Hyaluronidase alone



VCN-12 Hyaluronidase + Toxins



VCN-11 Hyaluronidase + Albumin Shield

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MILESTONE SUMMARY

VIRAGE AACR Poster
20Apr2026

VCN-01 PDAC Phase 2a
Initiate 3-dose PK PD

FDA Meetings, Rb & CMC

VCN-01 CMC Scale-up
Contingent on financing

VCN-01 Rb Phase 2-3
If regulatory agreement, financing

VCN-12 candidate
*Next generation OV**

SYN-004 in allo-HCT
Initiate final Phase1b/2a cohort‡

Partnering and Strategic Activities

Q2 2026	Q3 2026	Q4 2026	Q1 2027

Theriva BIOLOGICS

*VCN-12 is an armed derivative of VCN-01 designed to express an additional functional payload. Allo-HCT allogeneic hematopoietic cell transplant. ‡Contingent on investigator grant funding. AACR American Association for Cancer Research Annual Meeting 17-22Apr2026, San Diego CA. CMC chemistry, manufacturing and controls. Rb retinoblastoma.

APPENDIX

SEASONED LEADERSHIP TEAM

Steven Shallcross

Chief Executive Officer, Chief Financial Officer

Served as the Company's CEO since 2018 and CFO since joining the Company in 2015

Deep operational, financial and international biotech industry experience and proven track record of leading the financial development and strategy in the public sector

Senseonics · VANDA PHARMACEUTICALS INC. · Innocoll · nuo THERAPEUTICS

Manel Cascalló PhD

General Director, EU Subsidiary

Expertise in oncolytic adenovirus clinical development, received several patents for the use of adenovirus as antitumoral agents and authored many peer-reviewed scientific publications

Deep regulatory experience and serves as an independent expert for the European Medicines Agencies (EMA)

VCN BIOSCIENCES

Vince Wacher PhD

SVP Corporate & Product Development

Over 30 years leading corporate strategy, partnering, research, clinical development, and intellectual property programs for start-ups, small companies, and new business units within large companies

Advanced clinical development experience across oncology, infection, GI, metabolic diseases, transplantation, and drug delivery

EASTMAN · Verva Pharmaceuticals

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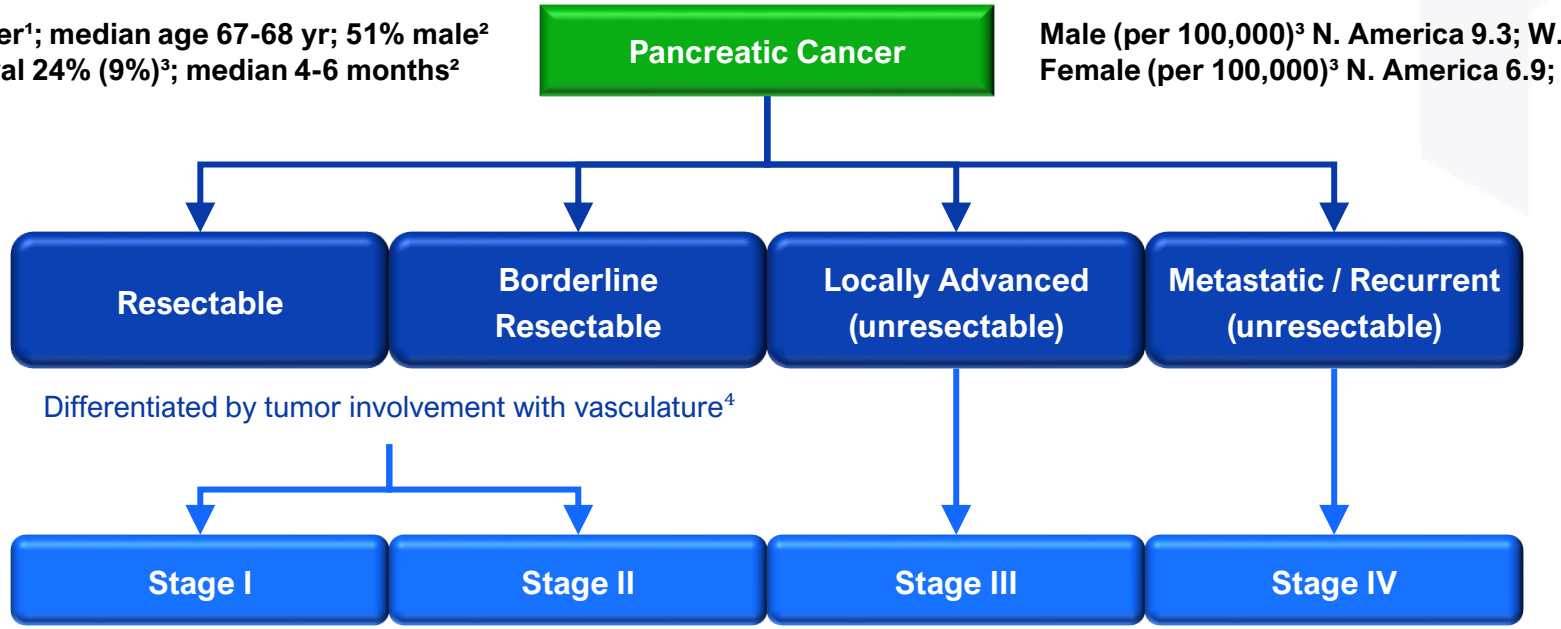
VCN-01 IN PANCREATIC CANCER

PANCREATIC CANCER STAGING

PDAC >90% pancreatic cancer[1]; median age 67-68 yr; 51% male[2]
1-year (5-year) overall survival 24% (9%)[3]; median 4-6 months[2]



Male (per 100,000)[3] N. America 9.3; W. Europe 9.9; E. Asia 7.0
Female (per 100,000)[3] N. America 6.9; W. Europe 7.4; E. Asia 4.8

AJCC Stage	**IA**	**IB**	**IIA**	**IIB**	**III**	**IV**
T-N-M[5]	T1 N0 M0	T2 N0 M0	T3 N0 M0	T1-3 N1 M0	T1-3 N2 M0 T4 NX-2 M0	TX-4 NX-2 M1
Median Age, yr (range)[6]	66 (30-88)	66 (31-89)	68 (31-93)	66 (30-95)	67 (31-94)	67 (30-95)
Male (Female), %[6]	51 (49)	48 (52)	50 (50)	51 (49)	50 (50)	54 (46)
Proportion of PDAC, %[2]	1.3%	4.4%	11.5%	16.3%	10.6%	**56.0%**
5-Year Survival, %[2]	31.7%	11.8%	9.0%	8.7%	1.9%	**0.5%**
Pancreas Head, %[6]	61%	58%	77%	85%	75%	55%

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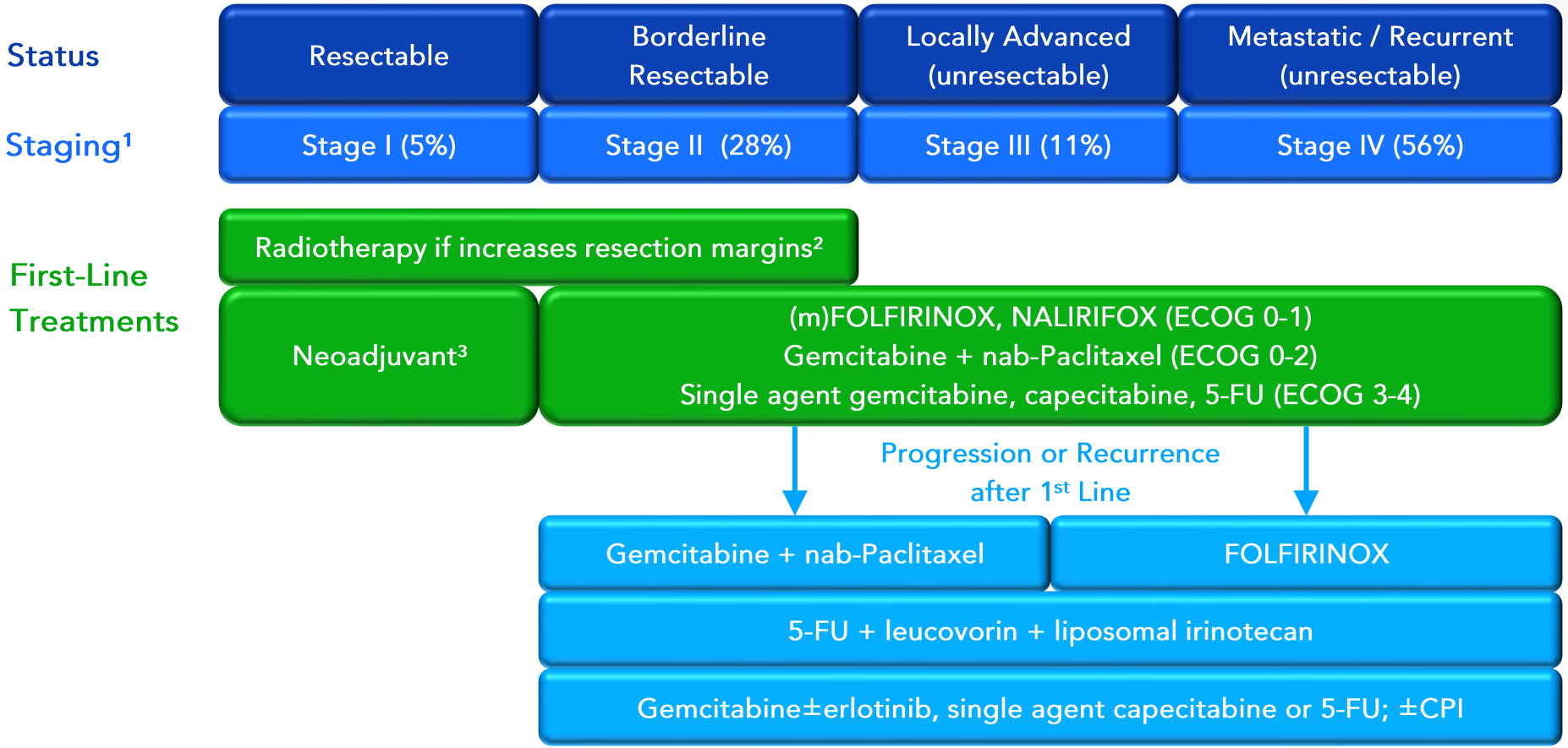
[1]**PDAC** pancreatic ductal adenocarcinoma. Cancers in the pancreas head (~70%) are diagnosed earlier than cancers in the body or tail (each ~15%), which have a worse prognosis, Sarantis (2020) *World J Gastrointest Oncol* **12:**173-181. [2]Bengtsson (2020) *Sci Rep* **10:**16425. [3]GLOBOCAN 2020 survey of persons 0-74 years. Ushio (2021) *Diagnostics* **11:**562. [4]Toesca (2018) *Int J Radiation Oncol Biol Phys* **100:**1155-1174. [5]American Joint Committee on Cancer **T**umor size, **N**odal involvement, **M**etastasis. [6]Yu (2015) *Gut* **64:**1783-9.

PANCREATIC CANCER CURRENT TREATMENTS

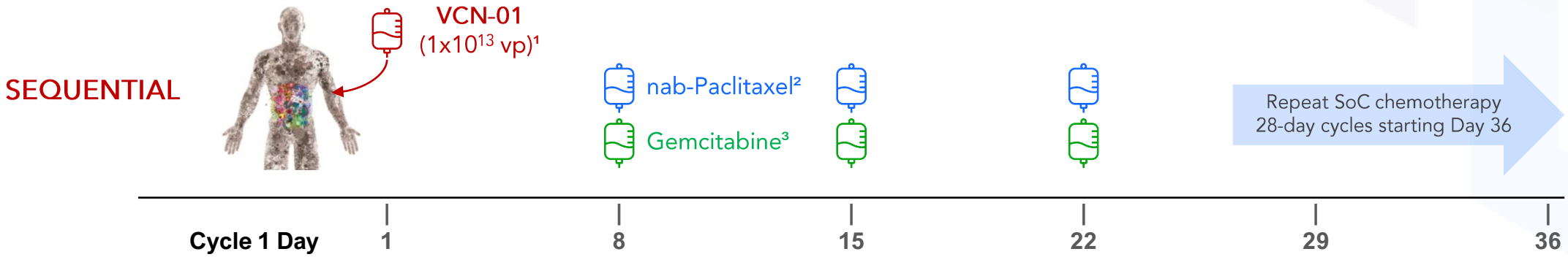


Additional treatments are available for small subsets of patients with gene mutations such as gBRCAm , NRG1 fusion

[1]Bengtsson (2020) *Sci Rep* **10:**16425. [2]Used in <20% of PDAC cases. [3]Identical to first-line chemotherapy. CPI checkpoint inhibitor for cancers with microsatellite instability or deficient mismatch repair. ECOG Eastern Cooperative Oncology Group Performance Status. (m)FOLFIRINOX (modified) leucovorin+5-FU+irinotecan+oxaliplatin. nab-Paclitaxel nanoparticle albumin-bound paclitaxel. NALIRIFOX leucovorin+ 5-FU+liposomal irinotecan+oxaliplatin. Adapted from Tempero (2021) *J Natl Compr Canc Netw* **19:**439.

PREFERRED VCN-01 DOSING REGIMEN ESTABLISHED IN PHASE 1

Dose escalation in patients with metastatic pancreatic cancer



Encouraging clinical profile

Primary AEs fever, flu-like illness, reversible increase in liver enzymes

Survival and response rates better than published results for gemcitabine/nab-paclitaxel SoC

Clinical evidence of proposed MOA

VCN-01 viral genomes and increased immune markers detected in tumor biopsies

VCN-01 tumor penetration and replication indicated by persistent systemic PH20

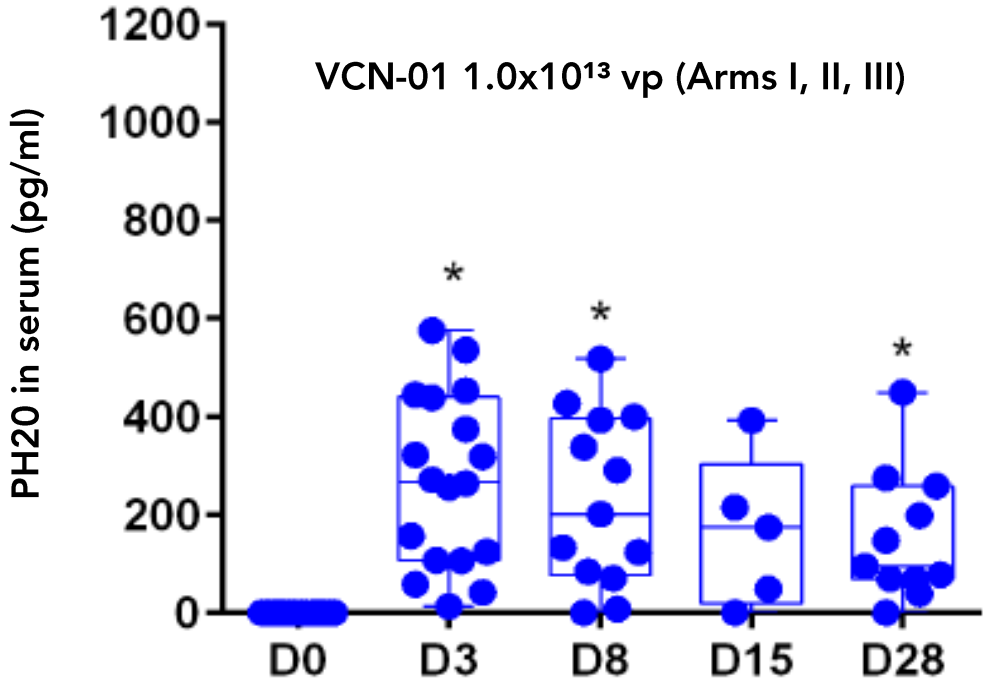
Theriva BIOLOGICS

[1]Single dose of VCN-01 administered by 10 min IV infusion. [2]nab-Paclitaxel (Abraxane®; 30 min infusion) administered at least 4 hours after VCN-01. [3]Gemcitabine (30 min infusion) administered immediately after Abraxane® infusion. Garcia-Carbonero (2022) J Immunother Cancer 10:e003255. [NCT02045602] SoC standard of care.

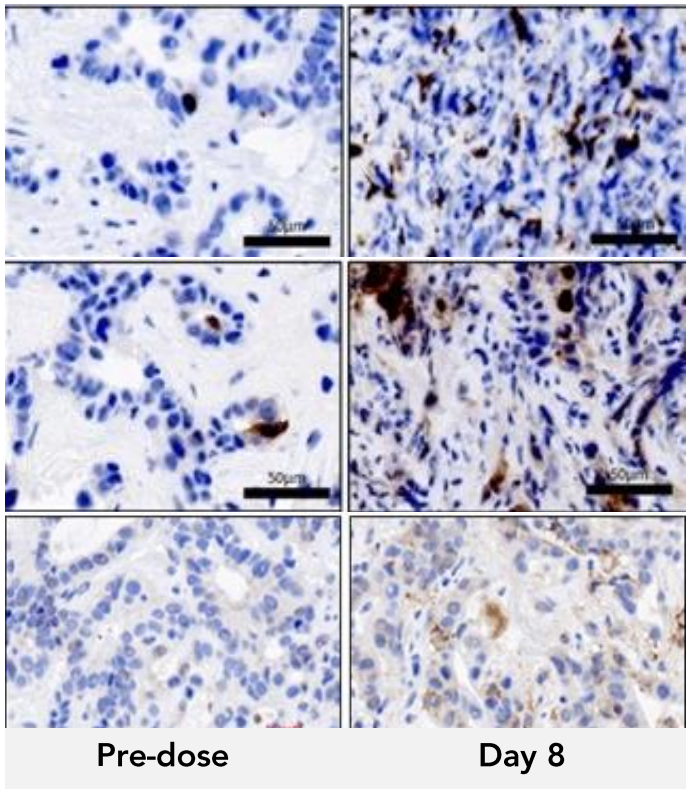
PHASE 1 DATA SUPPORT VCN-01 MODE-OF-ACTION

Overcomes Neutralizing Antibodies and remodels the tumor matrix and turns "cold" tumors "hot"

Persistent replication*: PH20 levels in patient sera indicate sustained VCN-01 activity in tumors



Immune markers upregulated in biopsies of hepatic metastases*



CD8⁺ lymphocytes

IDO upregulation

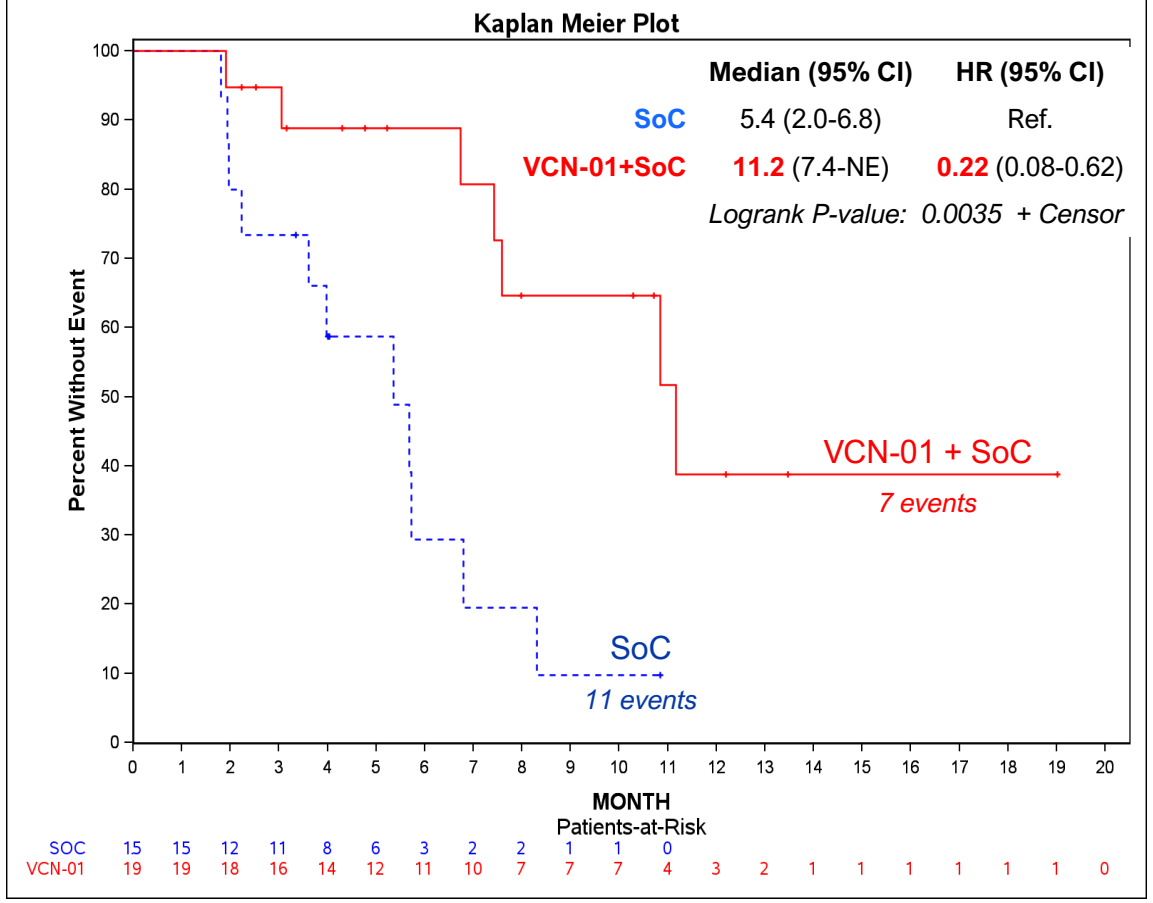
PD-L1 upregulation

*Data from VCN-01 Phase 1 Study, IDO indoleamine 2,3-dioxygenase, PD-L1 programmed death-ligand 1 and CD8⁺ lymphocyte infiltration measured by immunohistochemistry. PH20 (hyaluronidase) levels measured using an ELISA assay. Garcia-Carbonero (2022) J Immunother Cancer 10:e003255 [NCT02045602].

VIRAGE DATA SUPPORT IMMUNE MECHANISM-OF-ACTION

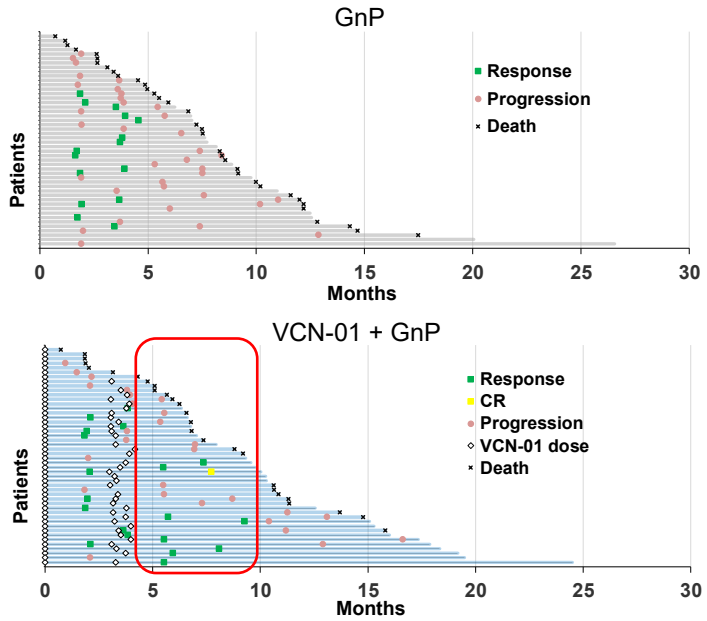
Long duration and late onset of responses

Patients who had a Partial or Complete Response[1]



Objective Response Rates (ORR)[1]

	Main Analysis (FAS)[1]		Subgroup (2 Doses VCN-01)[2]	
N (%)	SoC	VCN-01 + SoC	SoC C4+	2*VCN-01 + SoC
Patients	48	48	29	34
CR	0	1	0	1
PR	15	18	14	18
ORR	15 (31.3%)	19 (39.6)	14 (48.3%)	19 (55.9%)
		p=0.314		*p=0.533*



42% patients in VCN-01 + SoC exhibited late-emerging responses

[1]According to RECIST 1.1 using CT scan evaluations by sites. Data are for the Full Analysis Set (FAS) which comprises patients who received at least 1 dose of gemcitabine/nab-paclitaxel (SoC) chemotherapy in each arm. CR complete response, PR partial response.

VIRAGE ENROLLMENT

Parameter	Spain	USA	Total
Sites Open	10	7	**17**
Screened	131	40	**171**
Screen Failure	42 (32%)	17 (43%)	**59 (35%)**
Randomized	89	23	**112**
SoC	44	11	**55**
VCN-01 + SoC	45	12	**57**
Treated*			
SoC	41	7	**48**
VCN-01 + SoC	39	9	**48**

Theriva BIOLOGICS

*Patients received at least one dose of SoC in each arm and comprise the Full Analysis Set. Five (5) additional patients received one dose of VCN-01 but no doses of SoC and are included in the Safety Population. Standard of care (SoC) is gemcitabine / nab-paclitaxel chemotherapy in repeated 28-day cycles

VIRAGE SAFETY REVIEW BY INDEPENDENT DMC

- VIRAGE clinical data was reviewed on two occasions by an independent Data Monitoring Committee (DMC) who noted the following:
  - Intravenous VCN-01 was well tolerated in patients treated in this study
  - The most common VCN-01 related AEs (pyrexia, flu-like illness, vomiting, nausea, and elevated transaminases) were transient and reversible.
  - AEs were observed to be less frequent and of reduced CTCAE grade after the second VCN-01 dose compared to the first VCN-01 dose
  - The overall type and number of AEs in the VCN-01+SoC treatment group was as expected for the pancreatic cancer population, the duration of treatment, and the administration of an oncolytic virus

VIRAGE COMPARED TO NALIFIROX NAPOLI 3

	Statistics	VIRAGE		NAPOLI 3[1]	
Treatment Arm		VCN-01+Gem/Nab	Gem/Nab	NALIRIFOX	Gem/Nab
Age (years)	n	48	48	383	387
	Median (range)	66.0 (41-86)	68.5 (52-85)	64 (20-85)	65 (36-82)
Sex					
Female	n (%)	25 (52.1)	26 (54.2)	179 (46.7)	157 (40.6)
Male	n (%)	23 (47.9)	22 (45.8)	204 (53.3)	230 (59.4)
ECOG					
0	n (%)	19 (39.6)	17 (35.4)	160 (41.8)	168 (43.4)
1	n (%)	29 (60.4)	31 (64.6)	222 (57.9)	219 (56.6)
OS (months)	Median [95% CI]	10.8 [7.4-15.8]	8.6 [6.9-11.6]	11.1 [10.0-12.1]	9.2 [8.3-10.6]
	HR [95% CI], p-value	**0.57** [0.34-0.96], 0.0546	..	**0.83** [0.70-0.99], 0.036	..
PFS (months)	Median [95% CI]	7.0 [4.8-11.2]	4.6 [3.5-6.5]	7.4 [6.0-7.7]	5.6 [5.3-5.8]
	HR [95% CI], p-value	**0.55** [0.34-0.88], 0.0105	..	**0.69** [0.58-0.83], <0.0001	..
DoR (months)	Median [95% CI]	11.2 [7.4-NE]	5.4 [2.0-6.8]	7.3 [5.8-7.6]	5.0 [3.8-5.6]
	HR [95% CI], p-value	**0.22** [0.08-0.62], 0.0035	..	**0.67** [0.48-0.93], n/a	..

Theriva BIOLOGICS

DoR duration of response. Gem/Nab gemcitabine/nab-paclitaxel standard of care. OS overall survival. PFS progression free survival. [1]Wainberg (2023) Lancet 402:1272. NALIRIFOX leucovorin+ 5-FU+liposomal irinotecan+oxaliplatin

Theriva BIOLOGICS

VCN-01 IN RETINOBLASTOMA

Retinoblastoma Cases Per Year (One Retinoblastoma World Map)

PH1 TRIAL DESIGN VCN-01 IN RB (HSJD-2015-RB TRIAL)

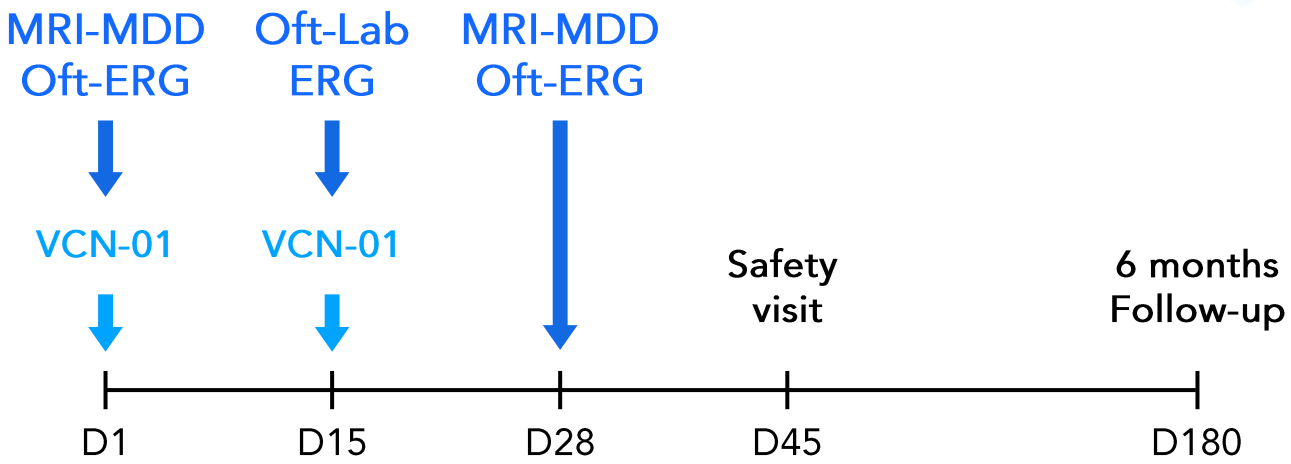
- Children (2-6 years)
- Intraocular retinoblastoma who failed conservative therapy and were facing imminent enucleation.
- Two intravitreal administrations 2 weeks apart
- Endpoints:
  - Safety profile
  - Antitumoral activity (delay of enucleation)

Sant Joan de Déu
HOSPITAL MATERNOINFANTIL
UNIVERSITAT DE BARCELONA

Investigator Sponsored Trial
PIs: Jaume Catalá, Guillermo Chantada

Dose escalation (monotherapy)

- 2E9 vp/eye 1 patient
- 2E10 vp/eye 8 patients



Theriva BIOLOGICS

PHASE 1 TRIAL OF INTRAVITREAL VCN-01

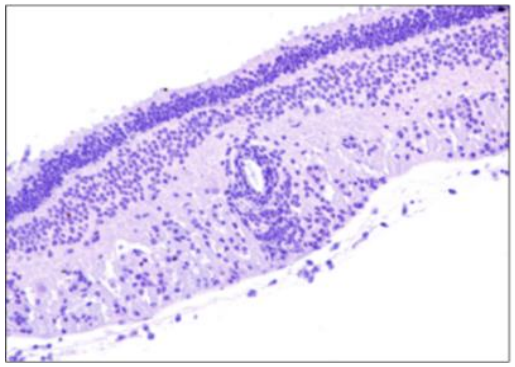
DEMOGRAPHICS		Low dose 2E+9 vp/eye *(n=1)*	High dose 2E+10 vp/eye *(n=8)*
Age, years	Median (Range)	2	3.2 (2-7)
Sex (Male / Female)		0/1	5/3
Weight, Kg	Median (Range)	12	16.35 (9.4-31.0)
Height, cm	Median	98	103.5 (87-126)
RB1 gene mutation, n	Somatic	1	3
	Germinal	N/A	5
If germinal	With active tumor in ONLY one eye, and the contralateral eye already enucleated	N/A	5
IIRC Classification[1]	A Group	0	0
	B Group	0	1
	C Group	0	2
	D Group	1	5
	E Group	0	0

[1]International Intraocular Retinoblastoma Classification

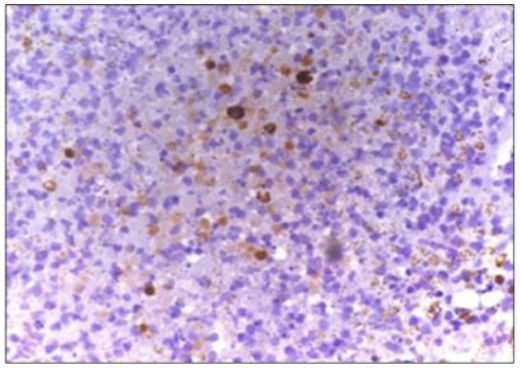
SAFETY DATA Ph1 TRIAL VCN-01 in RB:

Staining of VCN-01 viral proteins in healthy retina

Patient #1

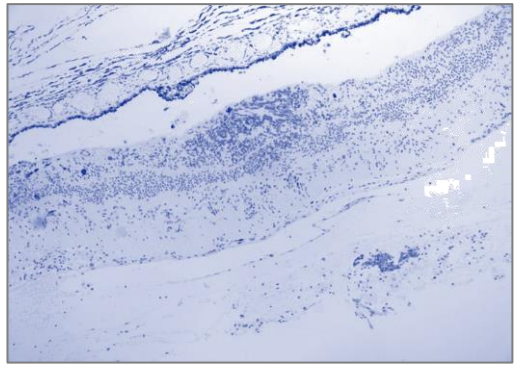


Conserved retina

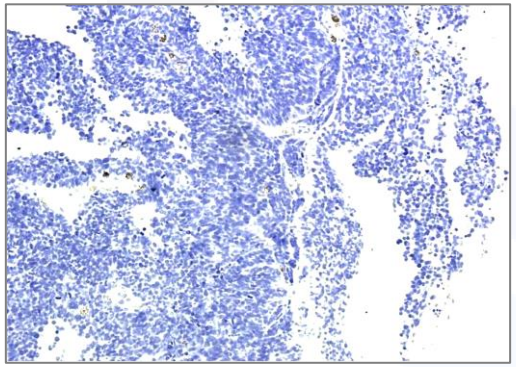


Calcified tumor area

Patient #8
(germline mutation)

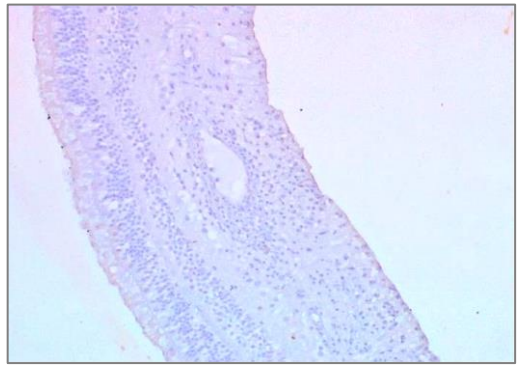


Conserved retina

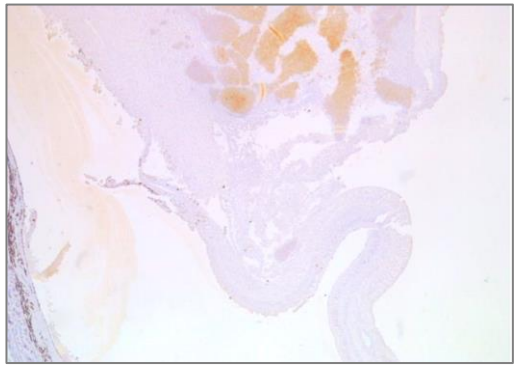


Tumor area

Patient #2
(germline mutation)

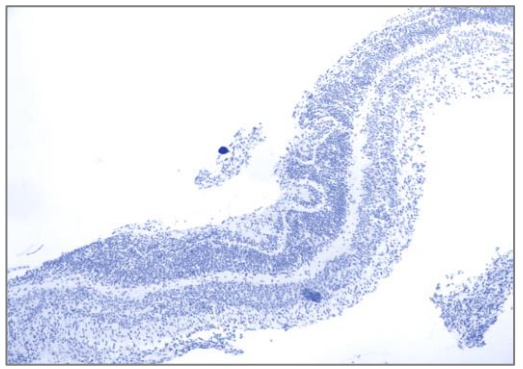


Conserved retina

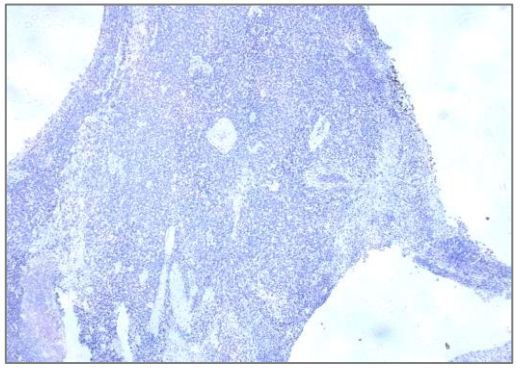


Calcified tumor area

Patient #9
(germline mutation)



Conserved retina



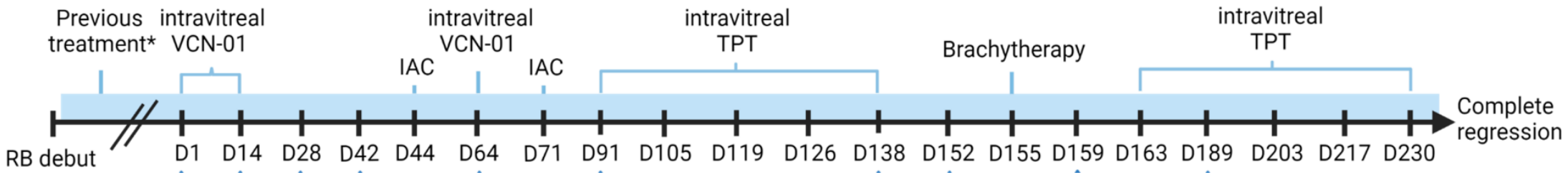
Tumor area

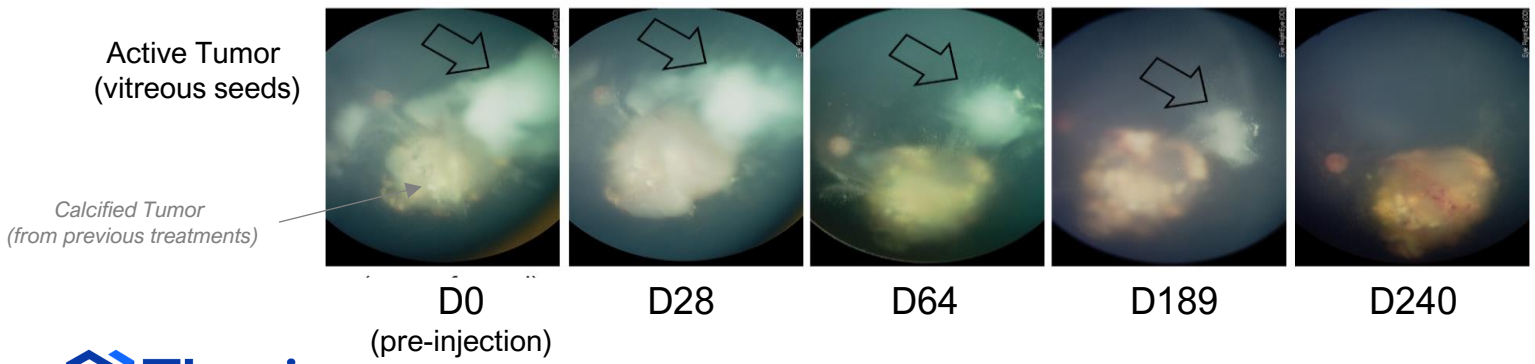
VCN-01 does not replicate in healthy retinal tissue of patients with either somatic or germline Rb mutation

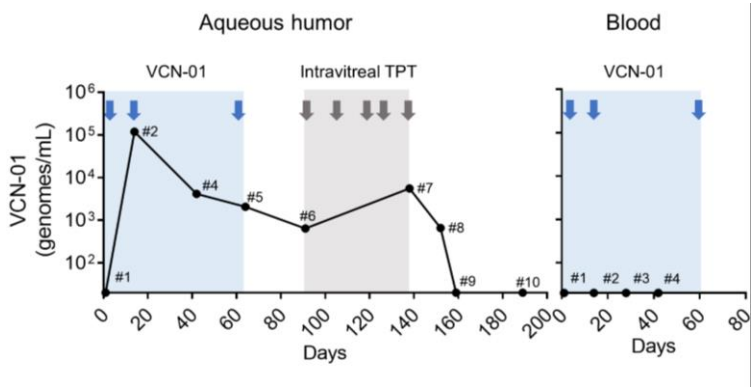
PRELIMINARY EVIDENCE OF ENHANCED ACTIVITY VCN-01 + TOPO-1 INH

Patient #3

- 3-years old ♂
- Bilateral retinoblastoma (with germline Rb1 mutation), with 1st eye already enucleated.
- Previous treatments:
  - Systemic chemotherapy CBP/VP-16/VCR (followed by intraarterial dosing of topotecan/melphalan).
  - Tumor relapse 9 months later → Intravitreous melphalan: NO RESPONSE.

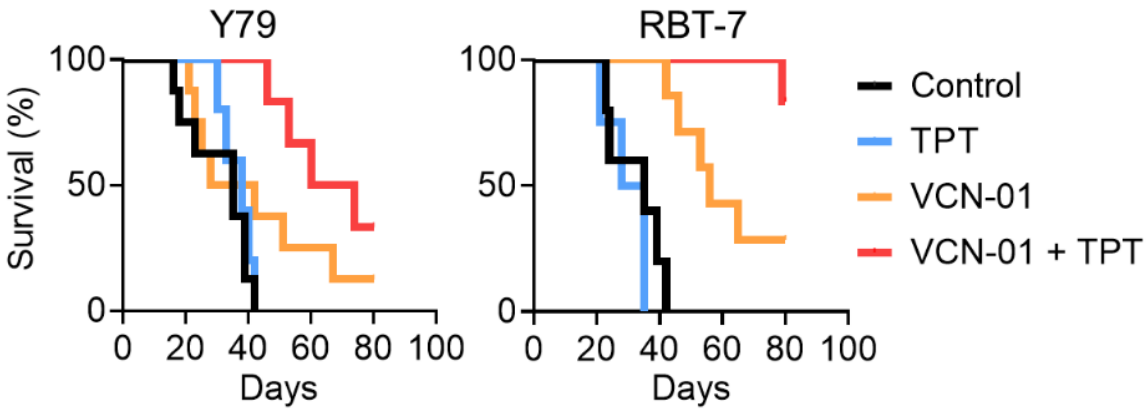




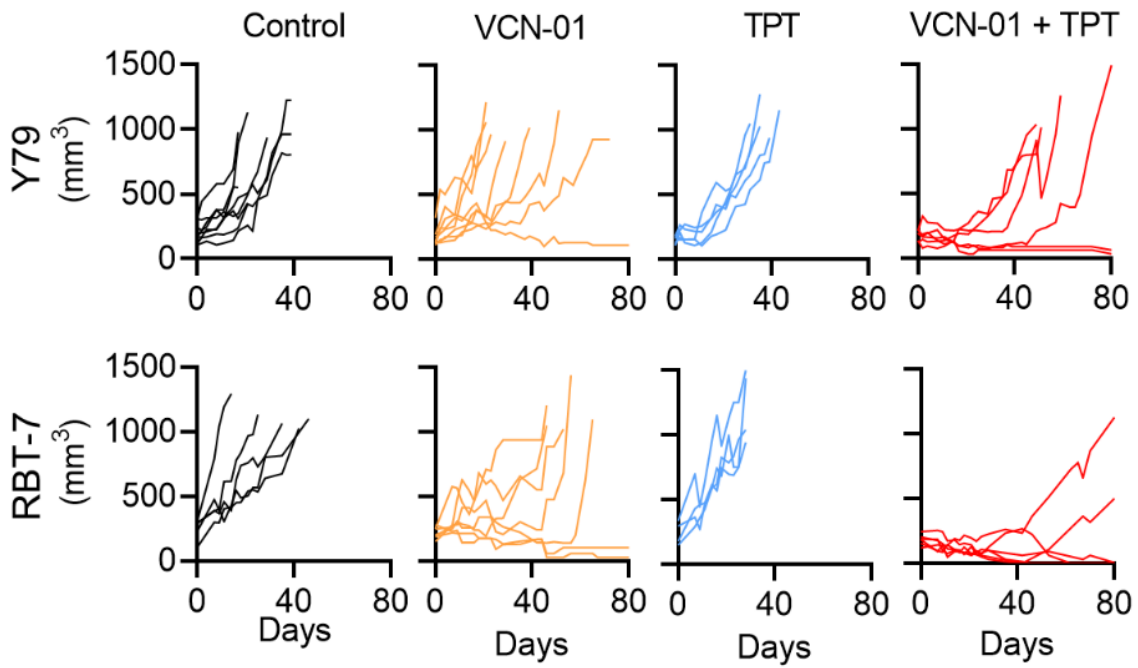


TOPO-1 INHIBITORS ENHANCE VCN-01 ANTITUMOR ACTIVITY

Improved ocular survival after intravitreal VCN-01 and Topotecan in intraocular RB



Ocular Survival	Y79 model	RBT-7 model
Control	35 days	35 days
VCN-01 + TPT	67 days	80 days
p-value	0.0009	0.0021



Two intratumoral (intravitreal) injections of VCN-01 in the left eye in s.c. xenografts, subsequent treatment with 6 cycles of systemic topotecan

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