One Mission, Inspired by Patients: Defeat Cancer.™

May 2023





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This presentation may contain forward-looking statements that are based on our current expectations, estimates and projections about our industry, our operations and financial performance, as well as management's beliefs and assumptions. Words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates," "may," "will," and variations of these words or similar expressions are intended to identify forward-looking statements. Such forwardlooking statements are subject to various risks and uncertainties, including important factors that could cause actual outcomes or results to differ materially from those indicated in these statements. These statements include, without limitation, the potential for our pre-clinical and/or clinical stage pipeline assets to be first-in-class and/or best-in-class treatments, plans to continue our geographic expansion of QINLOCK in Key European markets, our planned Phase 3 INSIGHT clinical study of QINLOCK versus sunitinib in second-line GIST patients with mutations in KIT exon 11 and 17/18, our expectations regarding the aggregate potential revenue opportunity for QINLOCK, our ability to expand the market opportunity for QINLOCK in second-line GIST in our INSIGHT Phase 3 study; the vimseltinib topline readout for the pivotal Phase 3 MOTION study and phase 1/2 study of vimseltinib, each in TGCT patients; plans to initiate one or more combination cohorts in the Phase 1/2 study of DCC-3116, plans to initiate new combination studies with ripretinib in patients with GIST and encorafenib and cetuximab in patients with colorectal cancer, plans to present additional preclinical data for DCC-3116, the potential for our autophagy program to be a multibillion dollar opportunity; submitting an IND for DCC-3084, submitting an IND for DCC-3009 in the second half of 2024; clinical studies including status, progress and results, timing for clinical data readouts, planning efforts for future clinical studies, NDA/MAA (and equivalent) filings and potential additional approvals, research and discovery efforts including the potential of our drug candidates, IND filings, regulatory designations and programs, timing and likelihood of success, plans and objectives of management for future operations, estimated patient populations, the market opportunity for our drug and drug candidates and business guidance, including discovery, clinical and regulatory milestones, cash guidance, expectation regarding our financial performance and business strategy, and the potential impact of the Inflation Reduction Act (the IRA), speak only at the time this presentation was prepared. Such statements are based upon the information available to us now and

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aggregate potential revenue opportunity for QINLOCK, our ability to complete, and the costs and timing of completing, the development and commercialization of our drug and drug candidates, our success in enrolling patients in clinical trials, including in our clinical trials of vimseltinib or DCC-3116, the potential for serious adverse events or unacceptable side effects to be identified during the development of our drug or drug candidates, our ability to obtain or, if granted, retain orphan drug exclusivity for our drug or drug candidates; our incurrence of significant operating losses since our inception and our expectation that we will incur continued losses for the foreseeable future and may never achieve or maintain profitability, our ability to raise capital when needed, our reliance on third parties to conduct our clinical trials and preclinical studies, our reliance on third parties for the manufacture of our drug candidates for preclinical testing and clinical trials, and for the manufacture of QINLOCK for commercialization and clinical trials, and our ability to enforce our intellectual property rights throughout the world. New risk factors and uncertainties may emerge from time to time, and it is not possible to predict all risk factors and uncertainties. There can be no assurance that the opportunity will meet your investment objectives, that you will receive a return of all or part of such investment. Investment results may vary significantly over any given time period. The appropriateness of a particular investment or strategy will depend on an investor's individual circumstances and objectives. Investors should independently evaluate specific investments. For further information regarding these risks, uncertainties and other factors, you should read the "Risk Factors" section of Deciphera's Annual Report on Form 10-Q for the guarter ended March 31, 2023 filed with the Securities and Exchange Commission (the "SEC"), and Deciphera's other SEC filings.

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#### ONE MISSION, INSPIRED BY PATIENTS: DEFEAT CANCER™

Executing on our mission to discover, develop, and commercialize important new medicines to **improve the lives of people with cancer.** 



**Over \$1 Billion** 

**Peak Worldwide Sales** Potential for QINLOCK® (ripretinib) and Vimseltinib

Two Phase 3
Programs

MOTION Top-line Data and INSIGHT Initiation Planned for 2023

Potential First-in-Class Autophagy Program

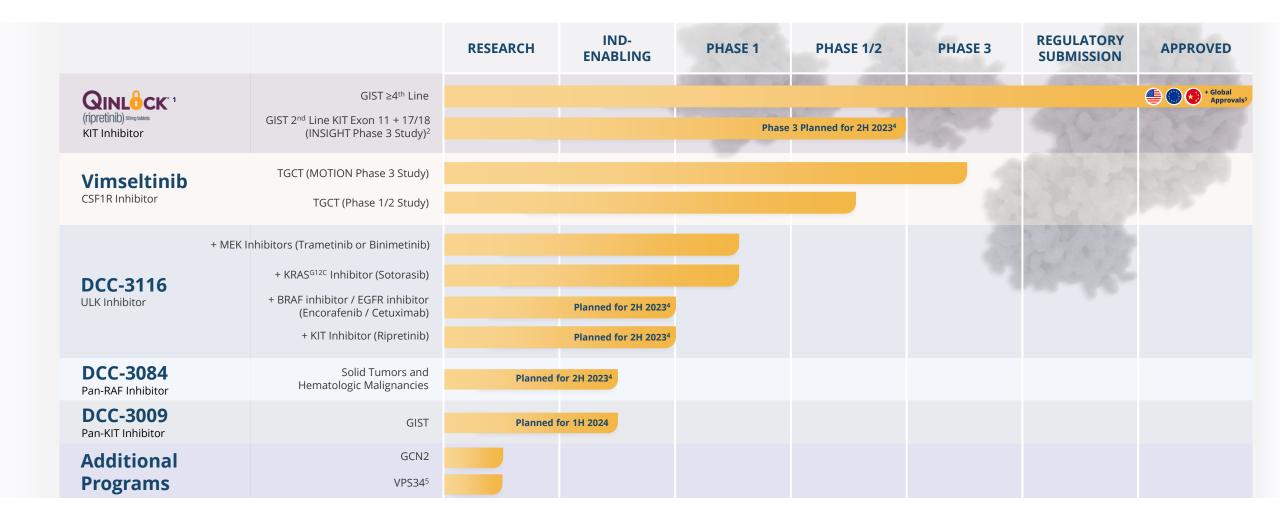
**Multi-billion Dollar Opportunity**Targeting Autophagy

Proven Discovery Engine

**High-Value Research Pipeline** of Switch-Control Kinase Inhibitors



#### ROBUST PIPELINE OF SWITCH-CONTROL KINASE INHIBITORS





Notes: BRAF=proto-oncogene b-RAF; CSF1R=colony-stimulating factor 1 receptor; EGFR=epidermal growth factor receptor; GCN2=general control nonderepressible 2; GIST=gastrointestinal stromal tumor; KIT=KIT proto-oncogene receptor tyrosine kinase; MAPK=mitogen-activated protein kinase; RAF=rapidly accelerated fibrosarcoma; RAS=rat sarcoma gene; TGCT=tenosynovial giant cell tumor; ULK=unc-51-like autophagy-activating kinase; (1) Exclusive development and commercialization license with Zai Lab in Greater China for QINLOCK; (2) The patient population for the planned INSIGHT study consists of second-line GIST patients with mutations in KIT exon 11 and 17 and/or 18 and the absence of mutations in KIT exon 9, 13, and/or 14 (also referred to as KIT exon 11 + 17/18 patients); (3) QINLOCK is approved for 4th line GIST in the United States, Australia, Canada, China, the European Union, Hong Kong, Israel, Macau, New Zealand, Switzerland, Taiwan, and the United Kingdom; (4) 2023 Corporate Goal; (5) Agreement with Sprint Bioscience for exclusive in-license worldwide rights to a research-stage program targeting VPS34.

#### STRATEGIC PRIORITIES FOR 2023



#### QINLOCK\* (ripretinib)

- Initiate INSIGHT Phase 3 study in 2L KIT exon 11+17/18 GIST patients
- Drive continued 4L adoption in US and expansion in key European markets

#### Vimseltinib

- Announce top-line results from the MOTION Phase 3 study
- Present longer-term follow up from Phase 1/2 study

#### **DCC-3116**

- Initiate one or more MEK/G12C expansion cohorts in the Phase 1/2 study
- Initiate new combination study with encorafenib/cetuximab and with ripretinib

#### **DCC-3084**

Submit IND to FDA

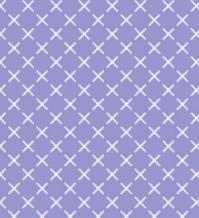
#### **Proprietary Drug Discovery Platform**

Nominate development candidate for pan-KIT inhibitor (DCC-3009)



**Notes:** 2L=second-line; 4L=fourth-line; FDA=U.S. Food and Drug Administration; G12C=single point mutation with a glycine-to-cysteine substitution at codon 12; GIST=gastrointestinal stromal tumor; IND=Investigational New Drug Application; KIT=KIT proto-oncogene receptor tyrosine kinase; MEK=mitogen-activated extracellular signal-regulated kinase.





# QINLOCK® (ripretinib)



### QINLOCK' FIRST APPROVED TKI DESIGNED SPECIFICALLY FOR GIST



HIGHLY SUCCESSFUL U.S. LAUNCH

Clear standard-of-care in the U.S. for 4L setting across all mutational profiles

CONTINUED GEOGRAPHIC EXPANSION IN KEY EUROPEAN MARKETS

Strong momentum driven by launch in Germany and the post-approval paid-access program in France

NEW PIVOTAL PHASE 3
INSIGHT STUDY PLANNED

Study supported by compelling activity seen in ctDNA analysis in 2L GIST patients with mutations in KIT exon 11+17/18



**Notes:** Full prescribing information is available at <u>www.QINLOCK.com</u>; 2L=second-line; 4L=fourth-line; ctDNA=circulating tumor deoxyribonucleic acid; GIST=gastrointestinal stromal tumor; KIT=KIT proto-oncogene receptor tyrosine kinase: TKI=Tyrosine kinase inhibitor:

### QINLOCK' SIGNIFICANT UNMET MEDICAL NEED POST-IMATINIB REMAINS

#### Estimated U.S. Incidence of GIST: 4,000-6,000<sup>1</sup>



1L therapy Imatinib<sup>2</sup>

18.9 months mPFS\*

**51.4%** ORR

**49.0** months mOS\*

\*Results for imatinib 400 mg. This study compared imatinib 400 mg to imatinib 800 mg.<sup>3</sup> 2L therapy **Sunitinib**<sup>4,5</sup>

**5.6** months mPFS HR=0.33

**6.8%** ORR

17.0 months mOS HR=0.87

~2,000

U.S. incident patients eligible for treatment<sup>6</sup>

3L therapy **Regorafenib**<sup>7</sup>

4.8 months mPFS HR=0.27

**4.5%** ORR

**17.4** months mOS HR=0.91

~1,400–1,600 U.S. incident patients eligible for treatment<sup>6</sup>

4L therapy8

QINLOCK®

(ripretinib) 50 mg tablets

months mPFS HR=0.16<sup>9</sup>

11.8% ORR9

18.2 months mOS HR=0.41<sup>9</sup>

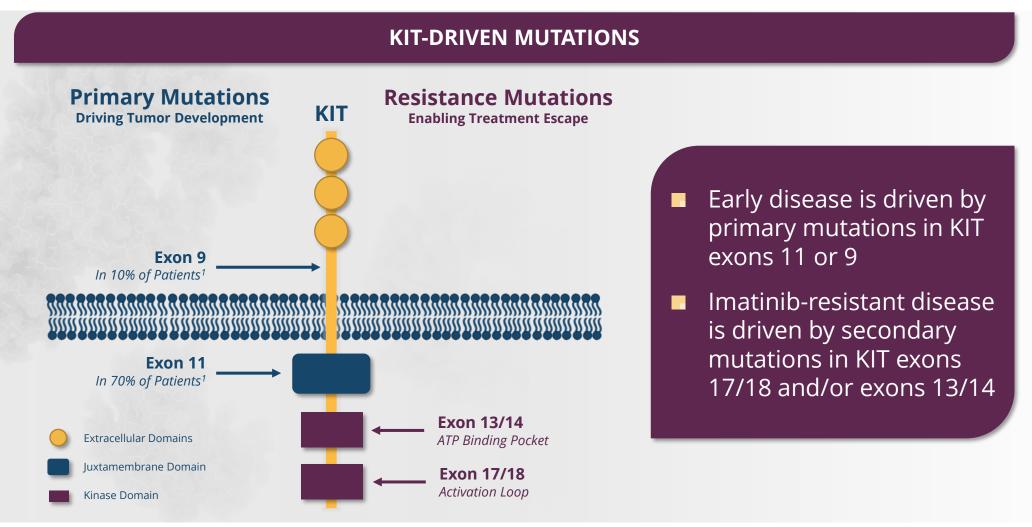
~1,000–1,300 U.S. incident patients eligible for treatment<sup>6</sup>

Avapritinib is approved in the U.S. for GIST patients with PDGFRA exon 18 mutations only, which are harbored by  $\sim$ 6% of patients with newly diagnosed GIST. <sup>10,11</sup>



Notes: 1L=first-line; 2L=second-line; 3L=third-line; 4L=fourth-line; GIST=gastrointestinal stromal tumor; HR=hazard ratio; mOS=median overall survival; mPFS=median progression-free survival; ORR=objective response rate; PDGFRA=platelet-derived growth factor receptor 0; (1) American Cancer Society, Key Statistics for Gastrointestinal Stromal Tumors, Accessed December 18, 2020; (2) Gleevec [package insert]. East Hanover, NJ; Novartis Pharmaceuticals Corp; 2020; (3) Gastrointestinal Stromal Tumor Meta-Analysis Group (MetaGIST). J Clin Oncol. 2010; 28:1247-1253; (4) Sutent [package insert]. New York, NY; Pfizer; 2020, mPFS and mOS converted from weeks to months; (5) Garrett CR, et al. Poster presented at: Connective Tissue Oncology Society: November 13-15, 2008; London, UK. Abstract 35049; (6) Internal Deciphera estimates of annual new treatment-eligible patients are based on analyses of U.S. claims data; eligible patients for 37d and 4th lines exclude the estimated proportion of patients across lines that die, discontinue oncology treatment, or enter clinical trial and, therefore, are not eligible for treatment. Estimates are inherently uncertain; (7) Stivarga [package insert]. Germany: Bayer Healthcare; 2020; (8) QINLOCK [package insert]. Waltham, MA: Deciphera Pharmaceuticals; 2022; (9) Updated data on the INVICTUS Study presented at the ESMO Congress 2021; (10) Ayvakit [package insert]. Cambridge, MA: Blueprint Medicines Corp; 2021; (11) Lopes LF, Bacchi CE. J Cell Mol Med. 2010; 14:42-50.

# QINLOCK\* | GASTROINTESTINAL STROMAL TUMOR (GIST) PROGRESSION DRIVEN BY SECONDARY RESISTANCE MUTATIONS IN KIT





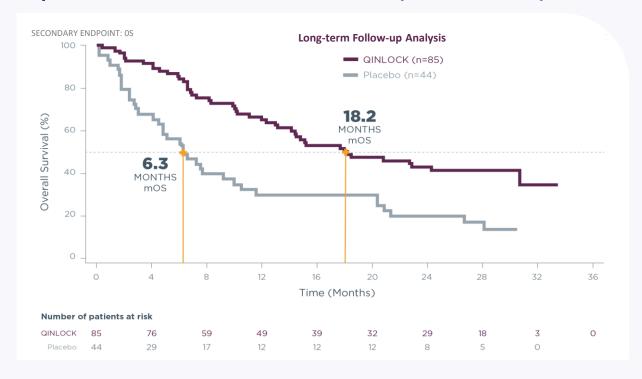
Notes: ATP=Adenosine Triphosphate; KIT=KIT proto-oncogene receptor tyrosine kinase; (1) Oppelt et al. J Gastrointest Oncol 2017;8(3):466-473.

# QINLOCK' | 4L GASTROINTESTINAL STROMAL TUMOR (GIST) INVICTUS (4L+): QINLOCK SHOWED BENEFIT IN ALL MUTATION SUBGROUPS

#### Progression-Free Survival (INVICTUS 4L+)<sup>3</sup>

O		•		•	
Mutation Subgroup	QINLOCK 150 mg QD (N)	Placebo (N)	Hazard Ratio (95% Cl)		
All Patients	85	44	0.16 (0.10-0.27)	ŀ⊕l	
Any KIT exon 11	52	34	0.13 (0.06-0.24)	⊢●⊣	
Any KIT exon 9	16	7	0.16 (0.05-0.51)	<b>⊢●</b>	
Any KIT exon 13	27	16	0.14 (0.06-0.34)	<b>⊢←</b> · · · · · · · · · · · · · · · · · · ·	
Any KIT exon 17	44	27	0.14 (0.07-0.29)	·	
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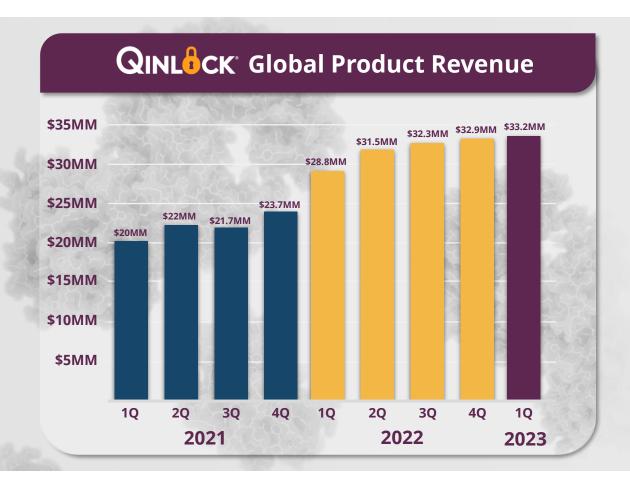
#### Kaplan-Meier Plots of Overall Survival (INVICTUS 4L+)<sup>1,2</sup>





Notes: 4L = fourth-line; CI = confidence interval; HR=hazard ratio; mOS=median overall survival; OS=overall survival; QD=daily; (1) Updated data on the INVICTUS Study presented at the ESMO Congress 2021, the long-term follow-up analysis was conducted approximately 19 months from the data cutoff date in the primary analysis and was not powered to show statistical significance; (2) QINLOCK OS in the primary analysis was 15.1 months vs 6.6 months (HR = 0.36 [95% CI, 0.21 – 0.62], nominal p value 0.0004); (3) Bauer et al. Clin Cancer Res. 2021;27(23):6333-6342.

# QINLOCK SUCCESSFUL LAUNCH OF QINLOCK AROUND THE WORLD



#### **1Q 2023 Summary**

- Total revenue of \$33.4MM including:
  - QINLOCK product revenue: \$33.2MM
    - U.S. net product sales of \$24.6MM
    - International net product sales of \$8.6MM
  - Collaboration revenue: \$0.2MM

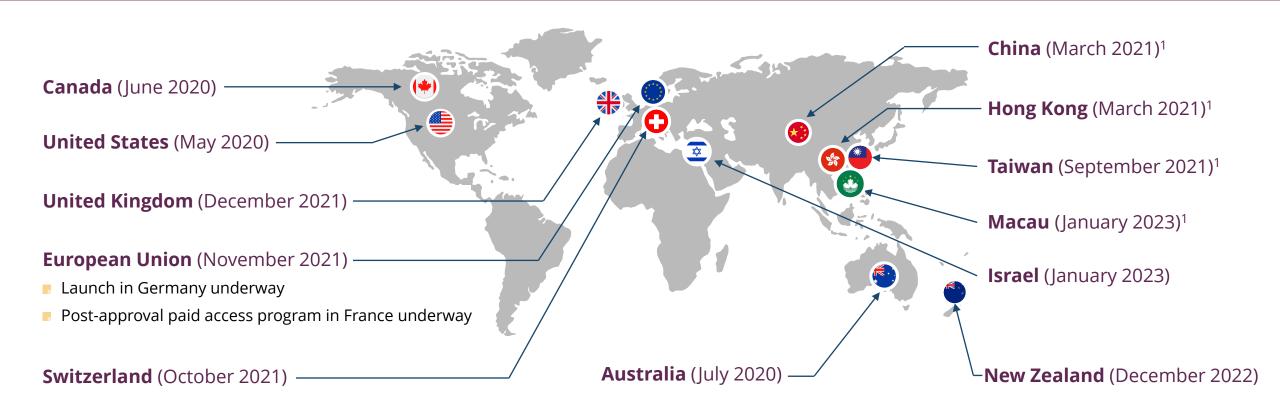
#### **Potential Key 2023 Growth Drivers**

- U.S. demand volume driven by expected gradual growth of average duration of therapy
- Continued geographic expansion in key European markets following pricing and reimbursement negotiations



Notes: Full prescribing information is available at www.QINLOCK.com

#### Significant progress expanding QINLOCK access to 4th line GIST patients globally





# QINLOCK | 4<sup>TH</sup> LINE GASTROINTESTINAL STROMAL TUMOR (GIST) SUSTAINED MOMENTUM IN EUROPE DELIVERING A TOTAL OF **\$8.6MM**IN 1Q 2023 INTERNATIONAL NET PRODUCT REVENUE



Strong Outcome from Germany Price Negotiations; Received "Major Additional Benefit" Rating



Planned Launch of QINLOCK in Italy in the Coming Months



Received Unanimous ASMR III
Rating in France



Advancing Access Discussions with Other Health Authorities Across Europe



Notes: ASMR=amélioration du service médical rendu; GIST=gastrointestinal stromal tumor.



### QINLOCK\* | 2L GASTROINTESTINAL STROMAL TUMOR (GIST) INTRIGUE STUDY TESTED SUPERIORITY IN 2L GIST POPULATION<sup>1</sup>

#### **INCLUSION CRITERIA**

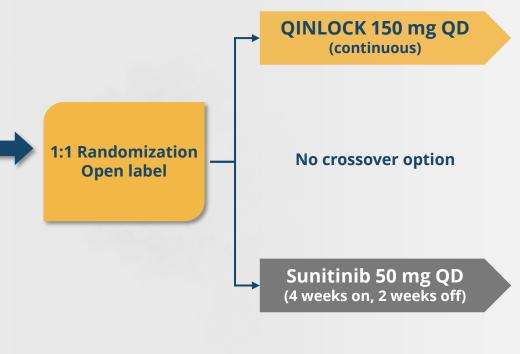
#### **INTRIGUE PHASE 3 CLINICAL STUDY**

Patients ≥18 years old with a confirmed diagnosis of GIST who progressed on or had documented intolerance to imatinib

Patients were enrolled from 122 sites across North America, South America, Europe, Australia, and Asia

#### Stratified by

- Mutational status:
  - *KIT* exon 11
  - KIT exon 9
  - KIT/PDGFRA Wild Type
  - Other KIT/PDGFRA
- Intolerance to imatinib



#### **Primary endpoint**

PFS by IRR (using mRECIST v 1.1) in the KIT exon 11 ITT and AP ITT populations

#### Planned exploratory analysis

 Subgroup analysis for efficacy based on ctDNA mutation status



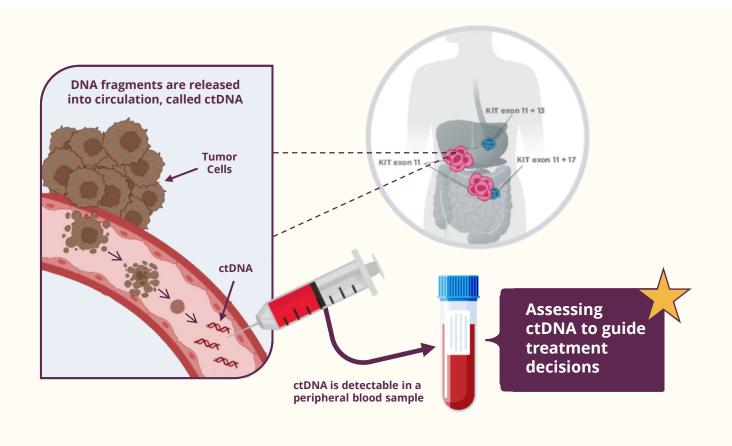
Notes: 2L=second-line; AP=all-patient; ctDNA=circulating tumor deoxyribonucleic acid; GIST=gastrointestinal stromal tumor; IRR=individual research result; ITT=intention-to-treat; KIT=KIT proto-oncogene receptor tyrosine kinase; mRECIST=modified Response Evaluation Criteria in Solid Tumors; PDGFRA=platelet-derived growth factor receptor alpha; PFS=progression-free survival; QD=once daily; (1) Bauer et al. / Clin Onc. 2022. 40:3918-3928.

# QINLOCK" | 2L GASTROINTESTINAL STROMAL TUMOR (GIST) INTRIGUE STUDY TUMOR TISSUE BIOPSY ANALYSIS BY PRIMARY MUTATION<sup>1</sup>

	QINLOCK n (events)	Sunitinib n (events)	mPFS QINLOCK (months)	mPFS Sunitinib (months)	Hazard Ratio (95% Cl)
Overall	226 (146)	227 (130)	8.0	8.3	1.05 (0.82, 1.33)
MUTATION TYPE					
KIT exon 11	163 (100)	164 (98)	8.3	7.0	0.88 (0.67, 1.17)
KIT exon 9	31 (27)	29 (14)	5.5	13.8	2.85 (1.48, 5.48)
KIT / PDGFRA Wild Type	15 (9)	18 (10)	7.0	4.1	0.90 (0.36, 2.23)
Other KIT / PDGFRA	17 (10)	16 (8)	6.8	8.4	0.90 (0.35, 2.28)



# QINLOCK' | GASTROINTESTINAL STROMAL TUMOR (GIST) PRACTICE CHANGING POTENTIAL WITH ctDNA IN GIST

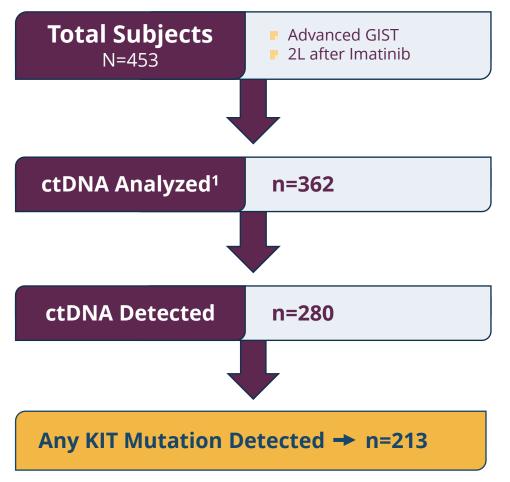


- ctDNA is rapidly being adopted in oncology to identify patients harboring sensitive mutations and to treat patients with precision medicines
- Tissue biopsies may not capture the full clonal heterogeneity of GIST
- ctDNA was collected at baseline in the INTRIGUE study as an exploratory analysis



Notes: ctDNA=circulating tumor deoxyribonucleic acid; DNA=deoxyribonucleic acid; GIST=gastrointestinal stromal tumor; KIT=KIT proto-oncogene receptor tyrosine kinase.

# QINLOCK\* | EXPLORATORY ANALYSIS OF INTRIGUE STUDY IN 2L GIST DETECTION OF BASELINE KIT/PDGFRA MUTATIONS



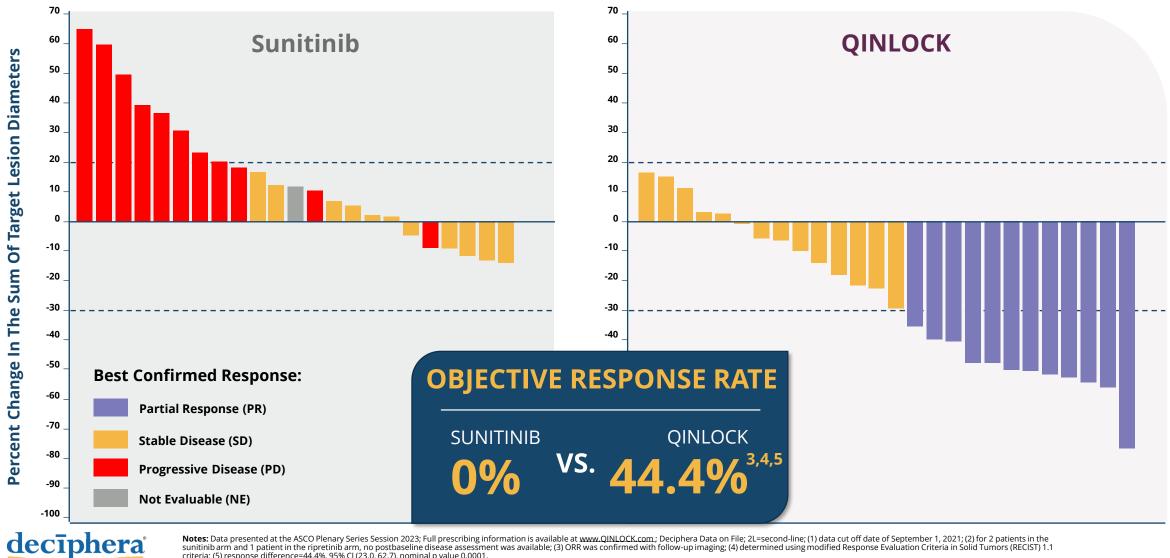
KIT Mutation Detected	213 / 362 (59%)
Any Exon 11	157 / 362 (43%)
Any Exon 9	36 / 362 (10%)
Any Exon 17/18 (Activation Loop)	89 / 362 (25%)
Any Exon 13/14 (ATP Binding Pocket)	81 / 362 (22%)

# Exon 11+17/18 **Only** (Activation Loop) 52 / 362 (14%) Exon 11+13/14 **Only** (ATP Binding Pocket) 41 / 362 (11%) Exon 11+13/14 **And** 17/18 22 / 362 (6%)



Notes: Data presented at the ASCO Plenary Series Session 2023; Full prescribing information is available at www.QINLOCK.com; Deciphera Data on File; 2L=second-line; ATP=Adenosine Triphosphate; ctDNA=circulating tumor deoxyribonucleic acid; GIST=gastrointestinal stromal tumor; KIT=KIT proto-oncogene receptor tyrosine kinase; (1) of the 453 patients in the overall intent-to-treat population, baseline ctDNA was analyzed in 362 patients for whom evaluable samples were available.

# QINLOCK\* | EXPLORATORY ANALYSIS OF INTRIGUE STUDY IN 2L GIST IMPRESSIVE ORR FOR QINLOCK IN KIT EXON 11+17/18 PATIENTS<sup>1,2</sup>

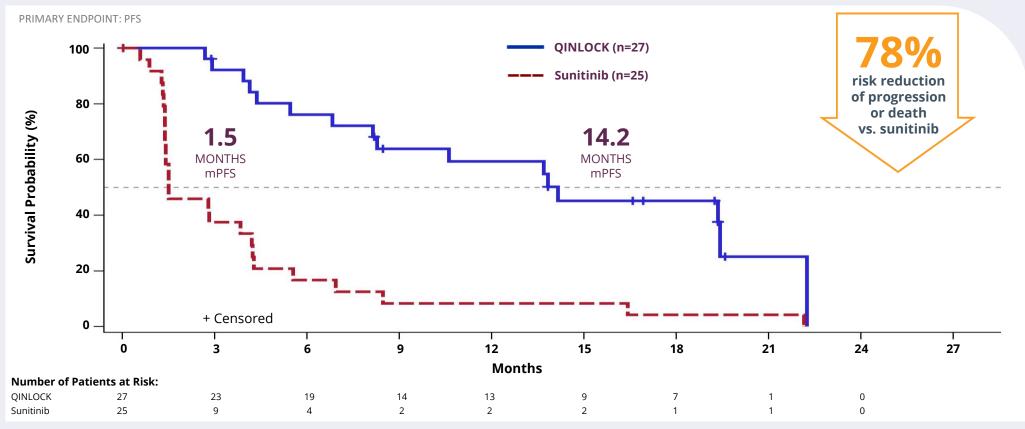


**Notes:** Data presented at the ASCO Plenary Series Session 2023; Full prescribing information is available at <a href="https://www.QINLOCK.com">www.QINLOCK.com</a>; Deciphera Data on File; 2L=second-line; (1) data cut off date of September 1, 2021; (2) for 2 patients in the sunitinib arm and 1 patient in the ripretinib arm, no postbaseline disease assessment was available; (3) ORR was confirmed with follow-up imaging; (4) determined using modified Response Evaluation Criteria in Solid Tumors (RECIST) 1.1 criteria; (5) response difference=44.4%, 95% CI (23.0, 62.7), nominal p value 0.0001

# QINLOCK | EXPLORATORY ANALYSIS OF INTRIGUE STUDY IN 2L GIST PFS STRONGLY FAVORS QINLOCK IN KIT EXON 11+17/18 PATIENTS<sup>1</sup>

#### **Progression-Free Survival**

KIT exon 11+17/18



(median PFS of 14.2 months vs. 1.5 months; HR=0.22, 95% CI [0.11-0.44], nominal p value <0.0001)

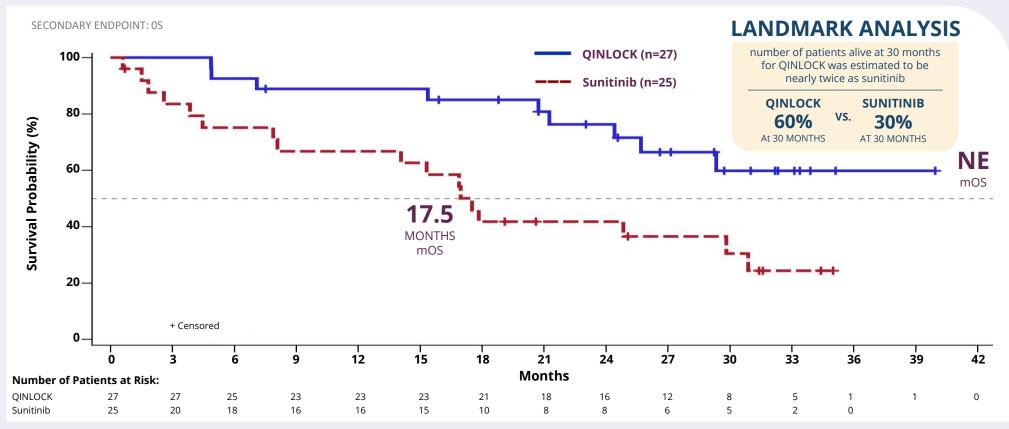


**Notes:** Data presented at the ASCO Plenary Series Session 2023; Full prescribing information is available at www.QINLOCK.com; Deciphera Data on File; 2L=second-line; HR=hazard ratio; KIT=KIT proto-oncogene receptor tyrosine kinase; mPFS=median progression-free survival; (1) data cut off date of September 1, 2021.

# QINLOCK | EXPLORATORY ANALYSIS OF INTRIGUE STUDY IN 2L GIST SUBSTANTIAL OS FOR QINLOCK IN KIT EXON 11+17/18 PATIENTS<sup>1</sup>

#### **Overall Survival Analysis**

KIT exon 11+17/18



(median OS of NE months vs. 17.5 months; HR=0.34, 95% CI [0.15-0.76], nominal p value 0.0061)



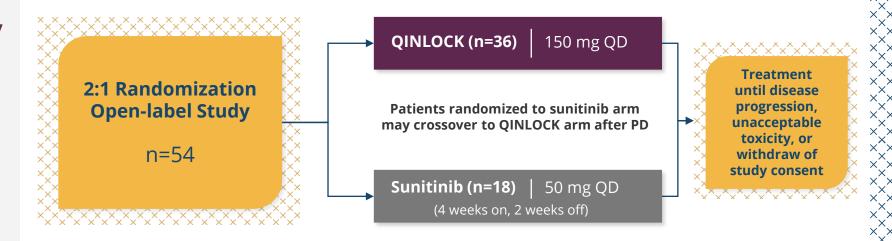
**Notes:** Data presented at the ASCO Plenary Series Session 2023; Full prescribing information is available at www.QINLOCK.com; Deciphera Data on File; 2L=second-line; HR=hazard ratio; KIT=KIT proto-oncogene receptor tyrosine kinase; NE=not estimable; OS=overall survival; (1) the data cut off date for the second interim analysis for overall survival was September 1, 2022.

#### **INCLUSION CRITERIA**

### Patients with GIST previously treated with imatinib

- 1 prior line of imatinib
- KIT exon 11 + (17 and/or 18) via ctDNA at prescreening
  - KIT exon 9, 13, and/or 14 are excluded
  - Other co-mutations are allowed
- Measurable disease per mRECIST
- ECOG performance status ≤ 2

#### PLANNED PHASE 3, RANDOMIZED, MULTICENTER, OPEN-LABEL STUDY



#### **Primary Endpoint**

■ PFS by IRR using mRECIST

**Key Secondary Endpoints** 

- ORR by IRR using mRECIST
- OS



Notes: 2L=second-line; ctDNA=circulating tumor deoxyribonucleic acid; ECOG=Eastern Cooperative Oncology Group; GIST=gastrointestinal stromal tumor; IRR= individual research result; KIT=KIT proto-oncogene receptor tyrosine kinase; mRECIST=modified Response Evaluation Criteria in Solid Tumors; ORR=objective response rate; OS=overall survival; PD=progressive disease; PFS=progression-free survival; QD=daily.

# QINLOCK\* | 2L GASTROINTESTINAL STROMAL TUMOR (GIST) KEY SUCCESS FACTORS FOR INSIGHT PIVOTAL PHASE 3 STUDY

#### Strong Scientific Rationale and Compelling Efficacy Results for QINLOCK from ctDNA analysis

- Validates preclinical evidence and KOL's expectations of differential activity of each drug
- Dramatic and consistent clinical benefit of QINLOCK shown across all efficacy endpoints
- Conviction about results reinforced by PFS hazard ratio, confidence intervals, and nominal p-value

#### **Consistency between INTRIGUE and INSIGHT Trial Designs**

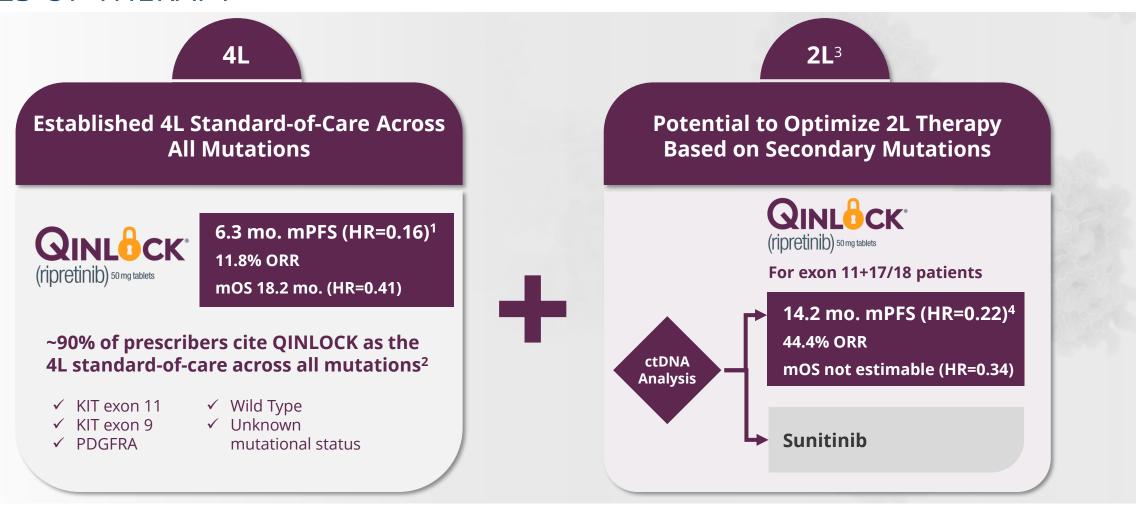
- Assumptions based on contemporary data from INTRIGUE
- INSIGHT patient population is the same size as the INTRIGUE ctDNA subgroup
- Dosing regimens, outcome measures and other material features are identical in INSIGHT and INTRIGUE

#### **Confidence in Study Execution**

- Significant investigator interest in using precision medicine to improve outcomes in 2L GIST
- Patient focused design with 2:1 randomization to QINLOCK and crossover to QINLOCK
- Design based on feedback from KOLs and FDA
- Deciphera is the most experienced company at running global GIST trials (over 750+ GIST patients)



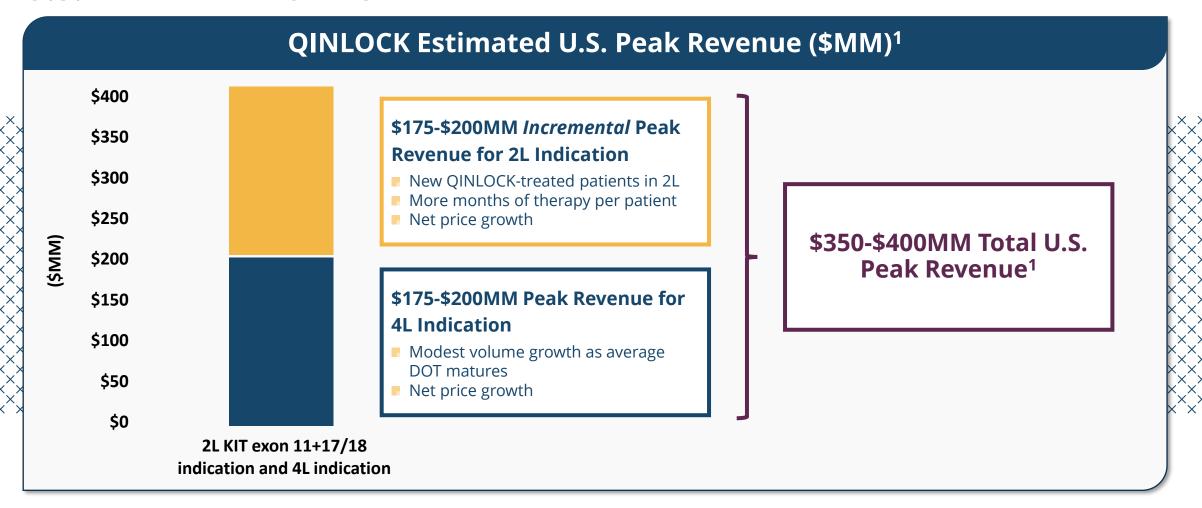
# QINLOCK | GASTROINTESTINAL STROMAL TUMOR (GIST) OPPORTUNITY TO ADVANCE THE STANDARD OF CARE ACROSS MULTIPLE LINES OF THERAPY





Notes: 2L=second-line; 4L=fourth-line; HR=hazard ratio; mOS=median overall survival; mPFS=median progression-free survival; (1) Updated data on the INVICTUS Study presented at the ESMO Congress 2021; Full prescribing information is available at <a href="https://www.QINLOCK.com">www.QINLOCK.com</a>; Overall survival data includes all time periods, including dose escalation. Placebo arm includes patients taking placebo who, following progression, were crossed-over to QINLOCK treatment; The long-term follow-up analysis was conducted approximately 19 months from the data cutoff date in the primary analysis and was not powered to show statistical significance; (2) Deciphera ATU survey, 1Q 2022; approximate % of GIST Treaters agreeing to strongly agreeing that QINLOCK is the standard of care for 4L+ advGIST patients; % of GIST treaters stating their likelihood to prescribe QINLOCK across GIST mutational types; (3) Use of QINLOCK in the 2<sup>nd</sup> line setting for patients with GIST with exon 11 + 17/18 mutations is subject to positive INSIGHT phase 3 study and approval by regulatory authorities; (4) Deciphera Data on File. Data cut off date of September 1, 2021.

# QINLOCK' | GASTROINTESTINAL STROMAL TUMOR (GIST) A 2L KIT EXON 11+17/18 INDICATION ESTIMATED TO DOUBLE QINLOCK U.S. PEAK REVENUE POTENTIAL<sup>1</sup>





Notes: Full prescribing information is available at <a href="www.QINLOCK.com">www.QINLOCK.com</a>; 2L=Second-Line; 4L=Fourth-Line; DOT=Duration of Therapy; (1) These estimates are based on management's current expectations and assumptions, including, without limitation, estimates of net price growth over time, adoption of ctDNA testing for GIST patients, estimates of on-label adoption, the potential for unpromoted off-label usage and reasonable expectations of the potential impact of the Inflation Reduction Act (the full impact of which is still under review) and an assumption of a second-line approval in GIST patients with mutations in KIT exon 11 + 17/18; estimates are inherently uncertain and are subject to a wide variety of assumptions, risks and uncertainties that can cause actual results to differ materially.

# QINLOCK | EXPLORATORY ANALYSIS OF INTRIGUE STUDY IN 2L GIST COMPELLING EFFICACY RESULTS IN KIT EXON 11+17/18 PATIENTS

OBJECTIVE RESPONSE RATE<sup>1</sup>

QINLOCK SUNITINIB 44.4%<sup>2</sup> vs. 0% MEDIAN PROGRESSION-FREE SURVIVAL<sup>1,3</sup>

QINLOCK SUNITINIB

MONTHS M

MONTHS

MEDIAN OVERALL SURVIVAL<sup>4</sup>

QINLOCK SUNITINIB

Not vs. 17.5

Estimable MONTHS

**INSIGHT PIVOTAL PHASE 3 STUDY EXPECTED TO INITIATE IN 2H 2023** 

QINLOCK PEAK U.S. REVENUE POTENTIAL ESTIMATED TO DOUBLE WITH 2L KIT EXON 11+17/18 INDICATION<sup>5</sup>



Notes: Data presented at the ASCO Plenary Series Session 2023; Full prescribing information is available at <a href="https://www.QINLOCK.com">www.QINLOCK.com</a>; Deciphera Data on File; 2L=second-line; KIT=KIT proto-oncogene receptor tyrosine kinase; ORR=objective response rate; OS=overall survival; PFS=progression-free survival; (1) data cut off date of September 1, 2021; (2) ORR was confirmed with follow-up imaging; (3) determined using modified Response Evaluation Criteria in Solid Trumfors (RECIST) 1.1 criteria; (4) the data cut off date for the second interim analysis for overall survival was September 1, 2022; (5) These estimates are based on management's current expectations and assumptions, including, without initiation, estimates of net price growth over time, adoption of ctDNA testing for GIST patients, estimates of on-label adoption, the potential for unpromoted off-label usage and reasonable expectations of the potential impact of the Inflation Reduction Act (the full impact of which is still under review) and an assumption of a second-line approval in GIST patients with mutations in KIT exon 11 + 17/18; estimates are inherently uncertain and are subject to a wide variety of assumptions, risks and uncertainties that can cause actual results to differ materially.

# VIMSELTINIB



decīphera

#### TOP-LINE RESULTS FROM MOTION PHASE 3 STUDY EXPECTED IN 4Q 2023

- Vimseltinib is an oral, switchcontrol TKI specifically designed to selectively and potently inhibit CSF1R
- Positive Phase 1/2 data in TCGT strongly supports ongoing MOTION Phase 3 study<sup>1</sup>
- +\$850MM TGCT market in U.S. with 90% of prescribers already targeted with GIST franchise<sup>2</sup>

#### **Expected 2023 Milestones<sup>3</sup>**

Completed (1Q 2023)

Complete enrollment in the MOTION Phase 3 study

4Q 2023

Announce top-line results from MOTION Phase 3 study

2H 2023

Present updated Phase 1/2 data in TGCT patients



#### AN INTERNATIONAL, MULTICENTER, OPEN-LABEL PHASE 1/2 STUDY

#### PHASE 1 (DOSE ESCALATION)

- A pharmacologically guided 3 + 3 design, to determine the recommended Phase 2 dose (RP2D) and the maximum tolerated dose
- Enrollment in Phase 1 dose escalation is complete

#### COHORT 5 (n=8)

**Loading Dose** 30 mg QD x 5 days

**Dose**30 mg twice weekly

#### **COHORT 8** (n=12)

Loading Dose 30 mg QD x 3 days

**Dose** 10 mg QD

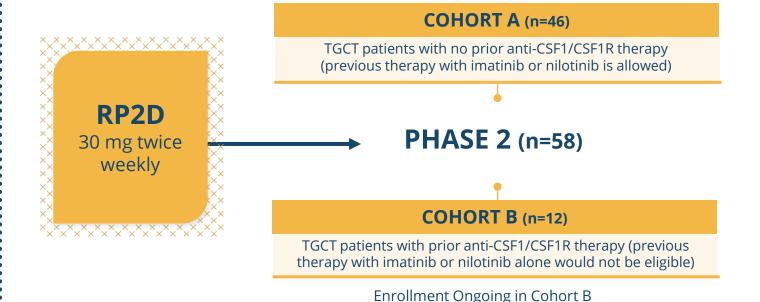
#### **COHORT 9** (n=12)

**Loading Dose** 20 mg QD x 3 days

**Dose** 6 mg QD

#### PHASE 2 (EXPANSION)

- Study to evaluate the safety, tolerability, and preliminary efficacy in two TGCT expansion cohorts
- Recommended Phase 2 dose of 30 mg twice weekly with no loading dose

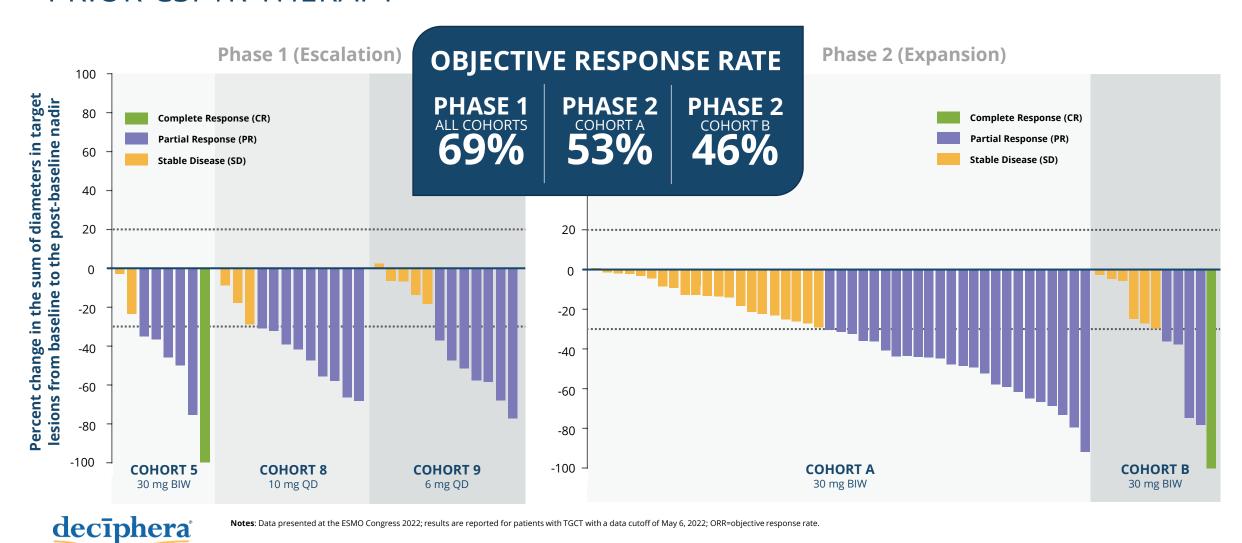




Notes: Data presented at the ESMO Congress 2022; CSF1=colony-stimulating factor 1; CSF1R=colony-stimulating factor 1 receptor; QD=once daily; RP2D=recommended Phase 2 dose; TGCT=tenosynovial giant cell tumor.

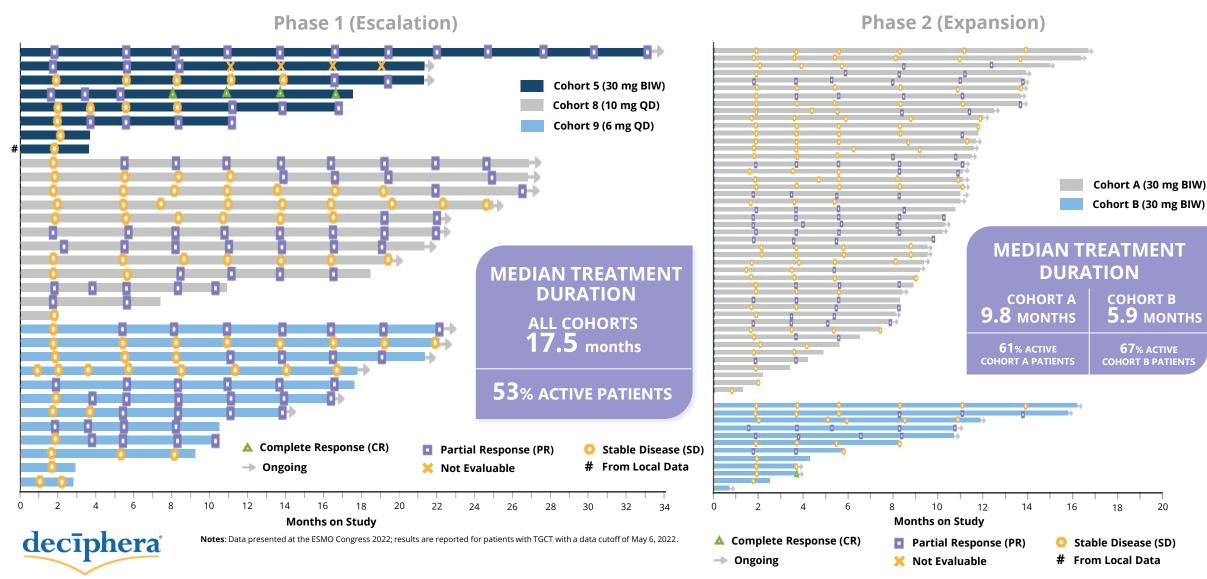
#### VIMSELTINIB | ONGOING PHASE 1/2 STUDY OF PATIENTS WITH TGCT

# ENCOURAGING ANTI-TUMOR ACTIVITY REGARDLESS OF PRIOR CSF1R THERAPY



#### VIMSELTINIB | ONGOING PHASE 1/2 STUDY OF PATIENTS WITH TGCT | PHASE 2 EXPANSION DATA

#### INCREASING DURATION OF THERAPY AND DURABLE RESPONSES



#### VIMSELTINIB | ONGOING PHASE 1/2 STUDY OF PATIENTS WITH TGCT

#### WELL-TOLERATED IN TGCT PATIENTS

#### **TEAEs in ≥15% of Patients Receiving Vimseltinib**

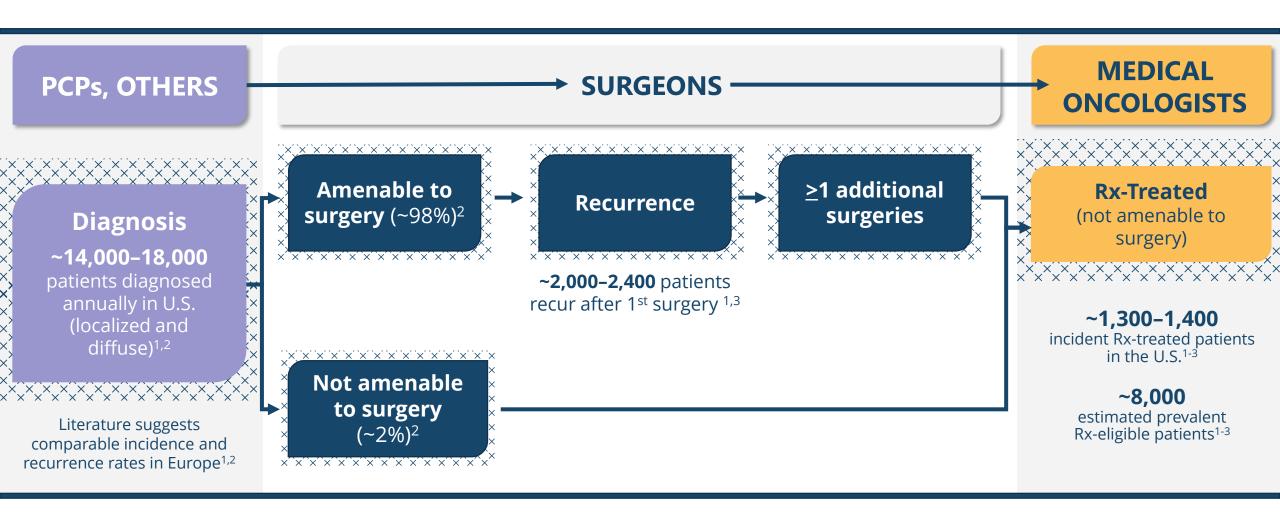
	Pha	se 1	_Pha	ise 2	Phase 1/2 (	Combined
Preferred term	All Patients <sup>1</sup> (n = 32)		All Patients <sup>1</sup> (n = 58)		All Patients (n = 90)	
	All grades	Grade 3/4	All grades	Grade 3/4	All grades	Grade 3/4
Blood CPK increased	20 (63%)	10 (31%)	34 (59%)	22 (38%)	54 (60%)	32 (36%)
Periorbital edema	17 (53%)	0	22 (38%)	0	39 (43%)	0
Fatigue	16 (50%)	0	16 (28%)	0	32 (36%)	0
AST increased	11 (34%)	4 (13%)	10 (17%)	0	21 (17%)	4 (4%)
Arthralgia	10 (31%)	1 (3%)	13 (22%)	1 (2%)	23 (26%)	2 (2%)
Face oedema	9 (28%)	0	10 (17%)	0	19 (21%)	0
Myalgia	9 (28%)	1 (3%)	15 (26%)	0	24 (27%)	1 (1%)
Oedema peripheral	9 (28%)	0	9 (16%)	0	18 (20%)	0
Pruritus	9 (28%)	0	0	0	9 (10%)	0
Headache	8 (25%)	0	27 (47%)	0	35 (39%)	0
ALT increased	7 (22%)	1 (3%)	0	0	7 (8%)	1 (1%)
Diarrhea	7 (22%)	1 (3%)	9 (16%)	0	16 (18%)	1 (1%)
Lipase increased	7 (22%)	3 (9%)	0	0	7 (7%)	3 (3%)
Generalized oedema	7 (22%)	0	0	0	7 (7%)	0
Hypertension	6 (19%)	2 (6%)	0	0	6 (7%)	2 (2%)
Nausea	6 (19%)	0	19 (33%)	0	25 (28%)	0
Rash	6 (19%)	0	0	0	6 (7%)	0
Amylase increased	5 (16%)	2 (6%)	0	0	5 (6%)	2 (2%)
Constipation	5 (16%)	0	0	0	5 (6%)	0
Dry skin	5 (16%)	0	0	0	5 (6%)	0
Paresthesia	5 (16%)	0	0	0	5 (6%)	0
Rash maculopapular	5 (16%)	0	13 (22%)	1 (2%)	18 (20%)	1 (1%)
Asthenia	0	0	15 (26%)	1 (2%)	15 (17%)	1 (1%)



Notes: Data presented at the ESMO Congress 2022; results are reported for patients with TGCT with a data cutoff of May 6, 2022; Data are presented as n (%) unless otherwise noted; percentages are rounded; ALT=alanine aminotransferase; AST=aspartate aminotransferase; CPK=creatine phosphokinase; TEAE=treatment-emergent adverse event; (1) TEAE cutoff of ≥15% based on all grades for total Phase 1 and Phase 2.

#### VIMSELTINIB | TENOSYNOVIAL GIANT CELL TUMOR (TGCT)

#### PATIENT JOURNEY OF TGCT PATIENTS NOT AMENABLE TO SURGERY

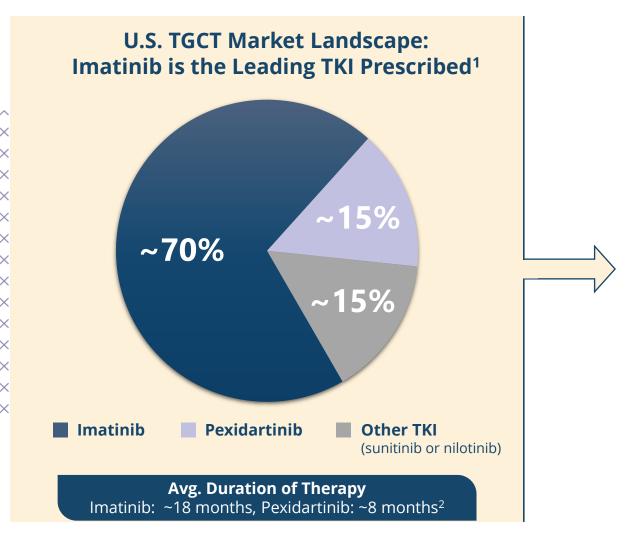




**Notes:** PCP=primary care physician; TGCT=tenosynovial giant cell tumor; (1) Mastboom et al. Acta Orthopaedica. 2017;88(6):688-694; (2) Internal Deciphera estimates based on market research and secondary data; estimates are inherently uncertain; (3) Ehrenstein. J Rheumatol. 2017;44(10):1476-1483.

#### VIMSELTINIB | TENOSYNOVIAL GIANT CELL TUMOR (TGCT)

#### TGCT MARKET LANDSCAPE OVERVIEW



#### **Existing Product Profiles and Unmet Need**

#### **Imatinib**

- Not FDA or EMA approved for TGCT
- Weak CSF1R inhibitor
- Guideline listed based on retrospective data showing 19% ORR<sup>3,4</sup>

#### **Pexidartinib**

- The only FDA approved agent for TGCT, not approved by EMA
- Inhibitor of CSF1R, KIT, FLT3, and PDGFRA/B
- Boxed warning for hepatoxicity, REMS, intensive liver monitoring

#### **High Unmet Need**

- Lifelong condition with significant morbidity
- HCPs and patients cite desire for effective therapy without having to sacrifice safety and tolerability<sup>5</sup>

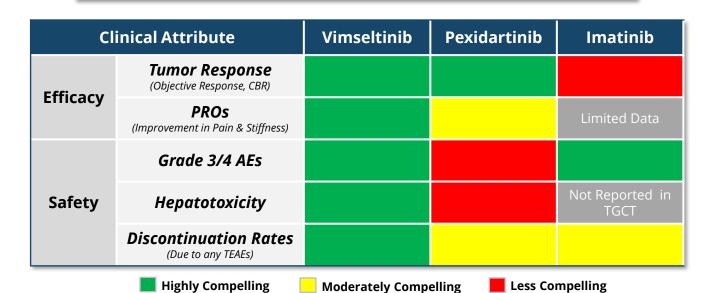


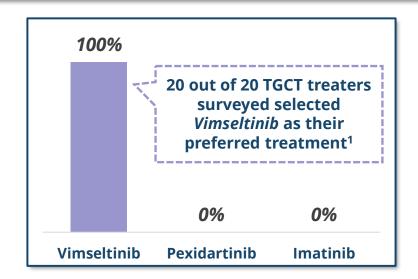
Notes: TGCT=tenosynovial giant cell tumor; TKI = Tyrosine Kinase Inhibitor. (1) Symphony Health IDV Claims; Analysis Period: 7/1/2020 – 6/11/2021; (2) Symphony Health IDV Claims; Analysis Period: 1/1/2008 – 2/1/2021; Patient Qualification: 1/1/2016 – 12/31/2020, Symphony Health IDV Claims; Analysis Period: Q3 2019 – Q32022 and Symphony Health Metys database (estimates calculated from pexidartinib data 2019 – 2022); (3) NCCN Guidelines Version 2.2022 Soft Tissue Sarcoma; (4) Cassier et al Cancer 2012:119:1649-1655; (5) Internal Deciphera market research.

# MARKET RESEARCH HIGHLIGHTS THE POTENTIAL FOR VIMSELTINIB TO DELIVER A BEST-IN-CLASS PROFILE AND ESTABLISH A NEW STANDARD OF CARE IN TGCT

#### **Relative Scoring of Key Product Attributes**

#### **Preferred Systemic Treatment For TGCT**





Clinical Profile: "This is very impressive data. Well over half the patients responded to the medication with excellent outcomes. Pain measurements and mobility scores are quite remarkable compared to anything currently available" – Onc

**Efficacy:** "It's great to see that the best overall response numbers improve over long-term. In fact, this would probably lead me to keep some patients on it longer than I usually would." – Onc

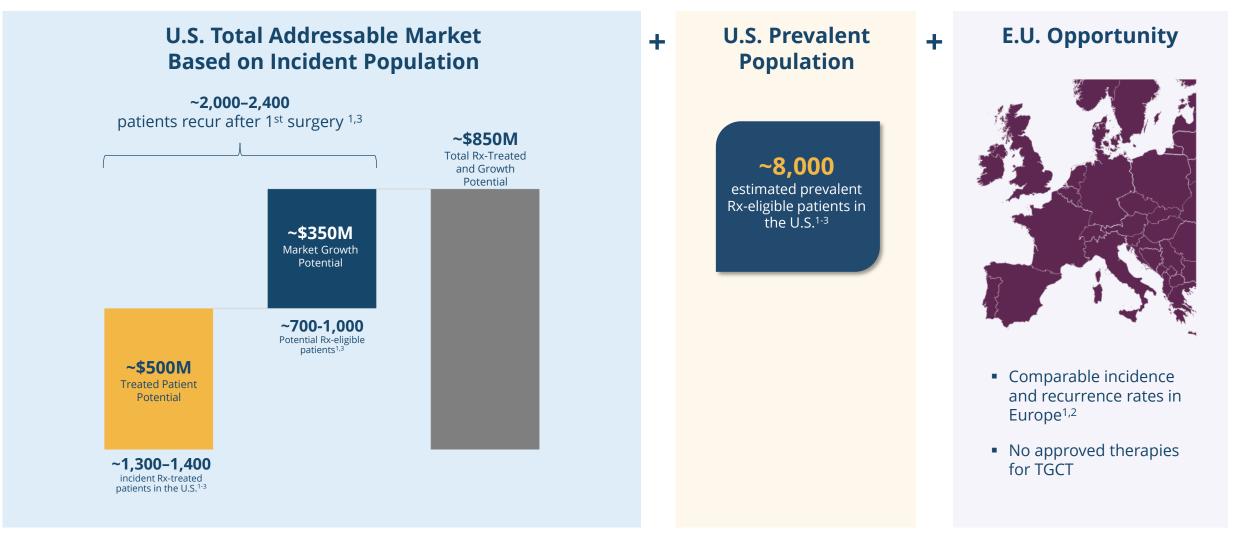
**Treatment Choice:** "I would give [vimseltinib] to all my future TGCT patients" - Onc

#### TGCT Treater Sentiments on Vimseltinib Profile



Notes: Qualitative market research conducted by Deciphera in Aug 2022 comparing target product profiles of vimseltinib (blinded), pexidartinib, and imatinib based on USPIs and published/presented literature for each product's efficacy and safety in TGCT diagnosed patients (n=20 HCPs). Hepatotoxicity as defined by increased AST/ALT rates. No head-to-head/comparative studies have been conducted. CBR = Clinical Benefit Rate, PROs = Patient Reported Outcomes, AEs = Adverse Events, TEAEs = Treatment-Emergent Adverse Events. (1) HCP asked to select their preferred (only 1) product to systemically treat TGCT patients based on current clinical profiles.

#### SIGNIFICANT OPPORTUNITY TO BENEFIT PATIENTS WITH TGCT GLOBALLY





**Notes:** TGCT=tenosynovial giant cell tumor; (1) Mastboom et al. Acta Orthopaedica. 2017;88(6):688-694; (2) Internal Deciphera estimates based on market research and secondary data; estimates are inherently uncertain; (3) Ehrenstein. J Rheumatol. 2017;44(10):1476-1483. Total Addressable Market calculated by estimated patient incidence x 18 months duration x current pexidartinib WAC price and assumes opportunity at steady state.

#### A MULTICENTER, RANDOMIZED, PLACEBO-CONTROLLED, DOUBLE-BLIND STUDY

#### **Top-line Results Expected in 4Q 2023**

**DOUBLE-BLIND PERIOD OPEN-LABEL PERIOD Part 1:** Eligible study participants will be Part 2: A long-term treatment assigned to receive either vimseltinib or phase in which all participants matching placebo for 24 weeks. receive open-label vimseltinib. <,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x Vimseltinib (n = 80) 30 mg BIW (24 weeks) **Open-Label** International Study Study with 2:1 Randomization ~40 Sites Patients have the **Enrollment Complete** option to continue (n=120)or cross over to vimseltinib 30 mg BIW **Placebo** (n = 40) (24 weeks)

#### **MOTION Phase 3 Study**

will assess the efficacy and safety of vimseltinib for the treatment of patients with TGCT not amenable to surgery

#### **Primary Endpoint**

Objective response rate (ORR) at week 25

#### **Key Secondary Endpoints**

- ORR per tumor volume score
- Range of motion (ROM)
- Patient-reported outcomes



Notes: BIW=twice weekly; TGCT=tenosynovial giant cell tumor.

# DCC-3116



### HIGHLY SELECTIVE SWITCH-CONTROL INHIBITOR OF THE ULK KINASE

- DCC-3116 is a potential first-inclass small molecule designed to inhibit cancer autophagy by targeting the ULK kinase
- The combination dose-escalation portion of the DCC-3116 Phase 1 study is underway
- Pfizer supply agreement to support a new combination study evaluating DCC-3116 + encorafenib/cetuximab in CRC

### Expected 2023 Milestones<sup>1</sup>

Present preclinical data on new combinations

Completed (2Q 2023)

Initiate escalation cohort for encorafenib/cetuximab

2H 2023

Present updated Phase 1 single agent and initial combination dose escalation data

2H 2023

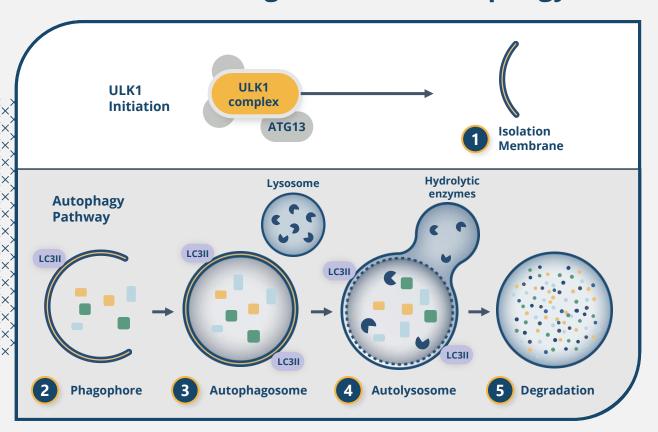
Initiate MEK/G12C expansion cohort(s)

2H 2023



### AUTOPHAGY: A BROAD RESISTANCE MECHANISM IN CANCER

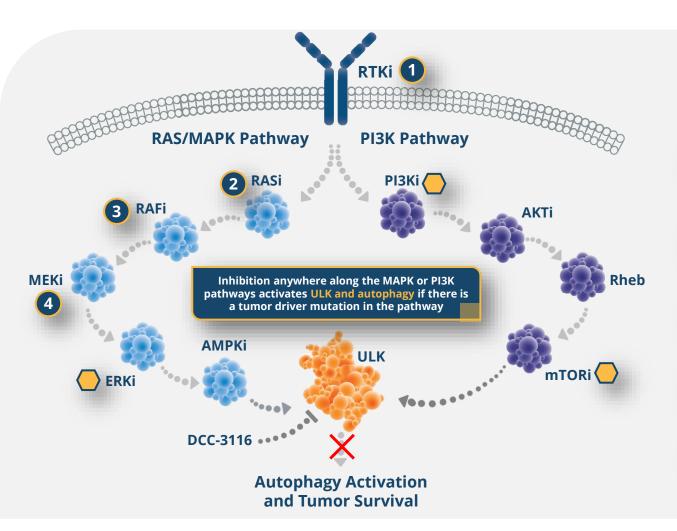
### **ULK: Initiating Factor for Autophagy**



- Autophagy is a catabolic process in which cells recycle components to generate energy
- RTK-, RAS-, and RAF-mutant cancer cells activate autophagy in order to survive stresses or damage due to anti-cancer therapeutic intervention with MAPK and PI3K pathway inhibitors
- The ULK kinase initiates the autophagy pathway and provides a potential targeted approach to selectively inhibit autophagy in these cancers



### CENTRAL ROLE FOR AUTOPHAGY IN THE RAS/MAPK AND PI3K PATHWAYS



## GROWING PRECLINICAL VALIDATION FOR ROLE OF AUTOPHAGY IN CANCER

- DCC-3116 In Combination with RTK Inhibition
  - DCC-3116 exhibits synergy with ripretinib, osimertinib, and afatinib, resulting in tumor regression in EGFR-mutant NSCLC and GIST *in vivo*
- DCC-3116 In Combination with KRAS<sup>G12C</sup> Inhibition
  - DCC-3116 exhibits synergy with sotorasib and adagrasib resulting in tumor regression in KRAS<sup>G12C</sup>-mutant NSCLC *in vivo*
- DCC-3116 In Combination with RAF Inhibition
  - DCC-3116 exhibits synergy in combination with encorafenib in BRAFm CRC in vivo
- DCC-3116 In Combination with MEK Inhibition
  - DCC-3116 exhibits synergy in combination with trametinib and inhibited pancreatic, lung, and melanoma xenograft tumor growth
- Other targets where therapeutic intervention activates ULK and autophagy

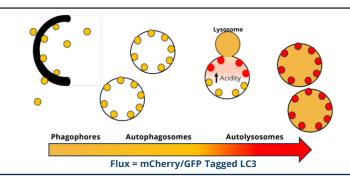


**Notes:** AKT=protein kinase B; AMPK=AMP-activated protein kinase; EGFR=epidermal growth factor receptor; ERK=extracellular signal-regulated kinase; G12C=single point mutation with a glycine-to-cysteine substitution at codon 12; GIST=gastrointestinal stromal tumor; KRAS=Kirsten rat sarcoma virus; LKB1=liver kinase B1; MAPK=mitogen-activated protein kinase; MEK=mitogen-activated extracellular signal-regulated kinase; mTOR=mammalian target of rapamycin; NSCLC=non-small-cell lung cancer; PI3K=phosphatidylinositol-3 kinase; RAF=rapidly accelerated fibrosarcoma; RAS=rat sarcoma gene; Rheb=ras homolog enriched in brain; RTK=receptor tyrosine kinase; ULK=unc-51-like kinase.

#### DCC-3116 | PRECLINICAL DATA

## DCC-3116 OBSERVED PRECLINICALLY TO DURABLY AND POTENTLY INHIBIT AUTOPHAGY INDUCED BY MULTIPLE PATHWAY INHIBITORS

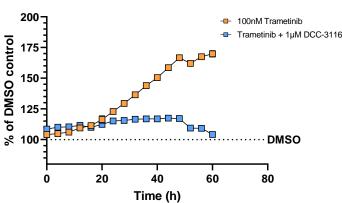
## AUTOPHAGIC FLUX MATURATION



- RTK/RAS/MAPK induces significant autophagy flux
- DCC-3116 can sustainably inhibit this induction

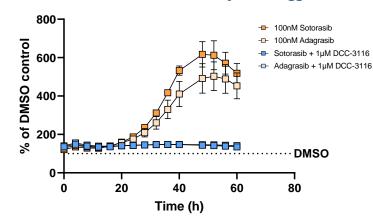
#### DCC-3116 + Trametinib

#### PDAC: Trametinib-induced Autophagy Induction Over Time (mCherry/GFP Tagged LC3)<sup>1</sup>



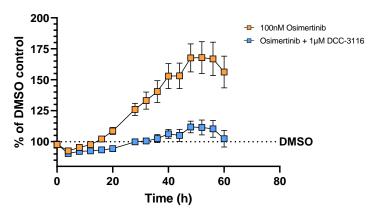
#### DCC-3116 + KRAS<sup>G12C</sup> Inhibitor

### NSCLC: Sotorasib vs. Adagrasib-induced Autophagy Induction Over Time (mCherry/GFP Tagged LC3)<sup>2</sup>



#### DCC-3116 + EGFR Inhibitor

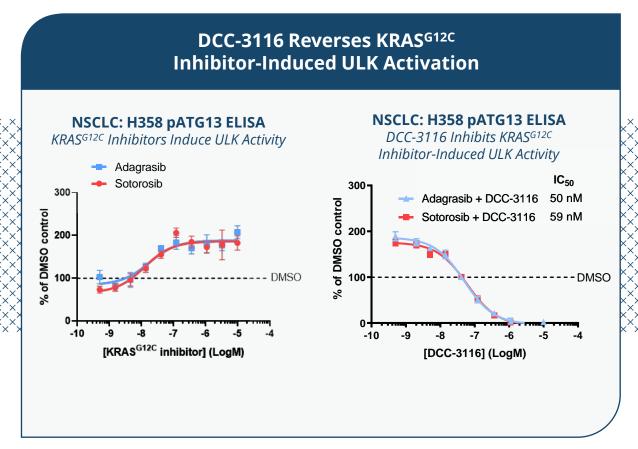
#### NSCLC: Osimertinib-induced Autophagy Induction Over Time (mCherry/GFP Tagged LC3)<sup>1</sup>

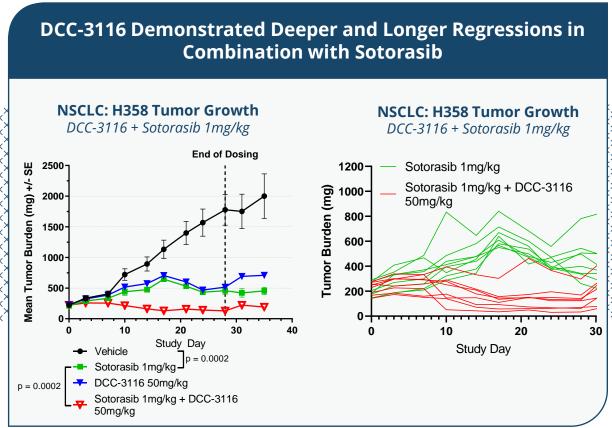




**Notes**: EGFR=epidermal growth factor receptor; G12C=single point mutation with a glycine-to-cysteine substitution at codon 12; KRAS=Kirsten rat sarcoma virus; MAPK=mitogen-activated protein kinase; NSCLC=non-small-cell lung cancer; PDAC=pancreatic ductal adenocarcinoma; RAS=rat sarcoma gene; RTK=receptor tyrosine kinase; (1) data published in Deciphera's Annual Report on Form 10-K for the year ended December 31, 2021; (2) data presented at the AACR Meeting 2022.

### DCC-3116 INHIBITS RAS PATHWAY INHIBITOR-INDUCED ULK ACTIVITY





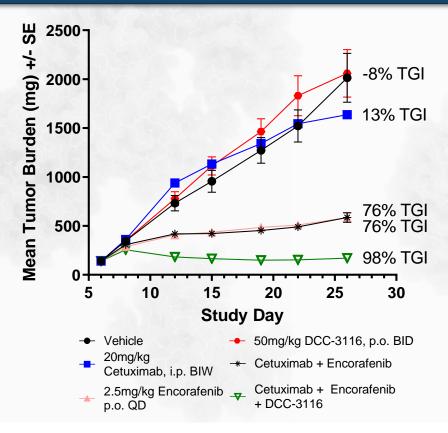


**Notes**: Data presented at AACR 2022; ATG13= Autophagy Related 13; ATG14=Autophagy Related 14: BID=twice daily; MEK=MAPK/ERK kinase; pATG13=phospho-ATG13; pATG14=phospho-ATG14; PBMCs=peripheral blood mononuclear cells; PD=pharmacodynamics; PK=pharmacokinetics; ULK=unc-51-like autophagy-activating kinase.

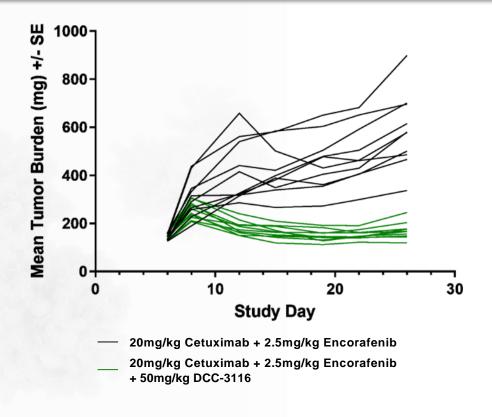
#### DCC-3116 | PRECLINICAL DATA

## DCC-3116 INDUCES TUMOR REGRESSIONS IN COMBINATION WITH ENCORAFENIB AND CETUXIMAB *IN VIVO*

### **Colo-205:** BRAF<sup>V600E</sup> Colorectal Cancer Model



### **Colo-205:** BRAF<sup>V600E</sup> Colorectal Cancer Model



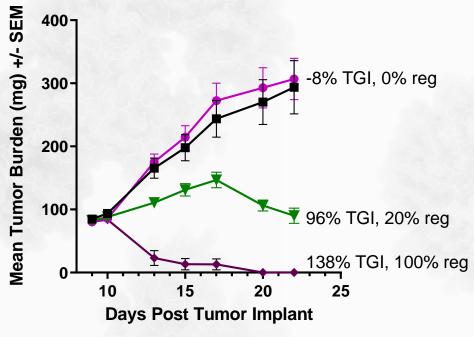


**Notes**: Data presented at the AACR Annual Meeting 2023; % reg is the percent of mice that had regressions. %TGI and %Reg were calculated at the last day of dosing; BID=twice daily; BIW=2 times a week; BRAF=proto-oncogene b-RAF; PO=orally; QD=once daily; Reg=regression; TGI=tumor growth inhibition

### DCC-3116 | PRECLINICAL DATA

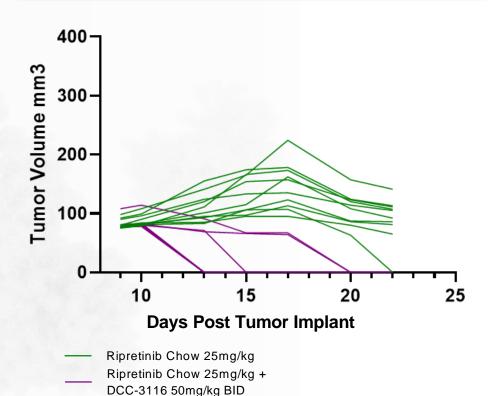
## DCC-3116 SHOWS 100% TUMOR REGRESSIONS IN COMBINATION WITH RIPRETINIB IN KIT EXON 11 MUTATED GIST XENOGRAFT MODEL





- Vehicle Control
- → Ripretinib Chow 25mg/kg
- → DCC-3116 50mg/kg BID
- → Ripretinib 25mg/kg Chow + DCC-3116 50mg/kg

### **GIST-T1:** Tumor Volume





**Notes**: Data presented at the AACR Annual Meeting 2023; % reg is the percent of mice that had regressions; %TGI and %Reg were calculated at the last day of dosing; BID=twice daily; GIST=gastrointestinal stromal tumor; GIST-T1=Exon 11 del; KIT=KIT proto-oncogene receptor tyrosine kinase; Reg.=regression; TGI=tumor growth inhibition.

### SUMMARY OF INITIAL SINGLE AGENT PHASE 1 STUDY RESULTS

- DCC-3116 was well tolerated at doses from 50 to 300 mg BID, which achieved exposure and ULK1/2 inhibition associated with anticancer efficacy with MEK inhibitors in preclinical studies
- Treatment-related TEAEs were mainly Grade 1/2, except for related asymptomatic and reversible Grade 3 ALT increases

DCC-3116 EXPOSURE APPEARED TO INCREASE DOSE PROPORTIONALLY ACROSS 50 – 300 mg BID

NO DLTs OR TREATMENT-RELATED SAES OBSERVED All DOSES ACHIEVED EXPOSURE AND ULK1/2 INHIBITION ASSOCIATED WITH EFFICACY IN PRECLINICAL STUDIES

MONOTHERAPY RESULTS
DEMONSTRATED STABLE
DISEASE AS BEST
OVERALL RESPONSE

NOV '22 UPDATE

MAXIMUM TOLERATED DOSE NOT REACHED 50 mg BID SELECTED AS STARTING DOSE FOR COMBINATION DOSE ESCALATION

IN COMBINATION DOSE ESCALATION



**Notes:** Data presented at the ESMO Congress 2022; data cutoff: June 9, 2022; ALT=alanine aminotransferase; BID=twice daily; DLTs=dose-limiting toxicities; MEK=MAPK/ERK kinase; PD=pharmacodynamics; PK=pharmacokinetics; SAE=serious adverse event; TEAE=treatment-emergent adverse event; ULK=unc-51-like autophagy-activating kinase.

#### DCC-3116 | PHASE 1 STUDY

### TEAEs REGARDLESS OF RELATEDNESS (≥15% OF PARTICIPANTS)

		DCC-3116 Monotherapy Cohorts								
Preferred term	Cohort 1 50 mg BID (n = 3)		<b>Cohort 2</b> 100 mg BID <b>(n = 4)</b>		<b>Cohort 3</b> 200 mg BID (n = 7)		<b>Cohort 4</b> 300 mg BID (n = 4)		n (%) N = 18	
	Grade 1/2	Grade 3	Grade 1/2	Grade 3	Grade 1/2	Grade 3	Grade 1/2	Grade 3	All grades	
Fatigue	2	0	1	0	3	0	1	0	7 (39%)	
Dehydration	0	0	0	0	2	0	2	0	4 (22%)	
ALT increased	0	0	0	0	0	1	1	1	3 (17%)	
Anaemia	0	2	0	1	0	0	0	0	3 (17%)	
AST increased	0	0	0	0	2	0	1	0	3 (17%)	
Decreased appetite	1	0	1	0	0	0	1	0	3 (17%)	
Hyponatraemia	1	0	0	0	1	0	1	0	3 (17%)	
Nausea	0	0	1	0	0	0	2	0	3 (17%)	
Vomiting	1	0	1	0	1	0	0	0	3 (17%)	

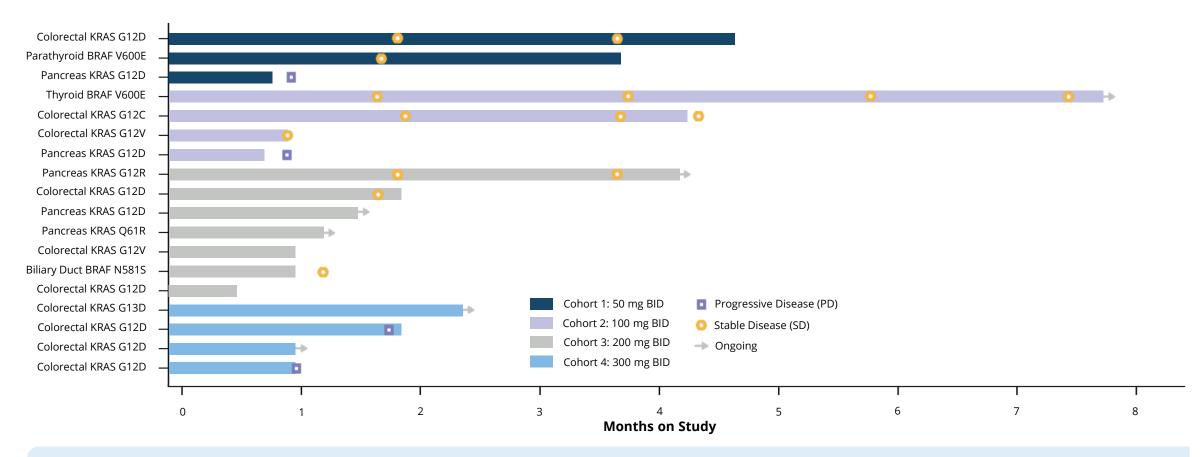
- No DLTs or treatment-related serious TEAEs were observed
- Most treatment-related TEAEs were Grade 1/2; no treatment-related Grade 4 TEAEs
- Two related asymptomatic, reversible Grade 3 ALT increased TEAEs led to dose interruption and reduction



Notes: Data presented at the ESMO Congress 2022; data cutoff: June 9, 2022; ALT=alanine aminotransferase; AST=aspartate aminotransferase; BID=twice daily; DLTs=dose-limiting toxicities; TEAE=treatment-emergent adverse event.

#### DCC-3116 | PHASE 1 STUDY

### TREATMENT DURATION AND RECIST v1.1 RESPONSE ASSESSMENTS



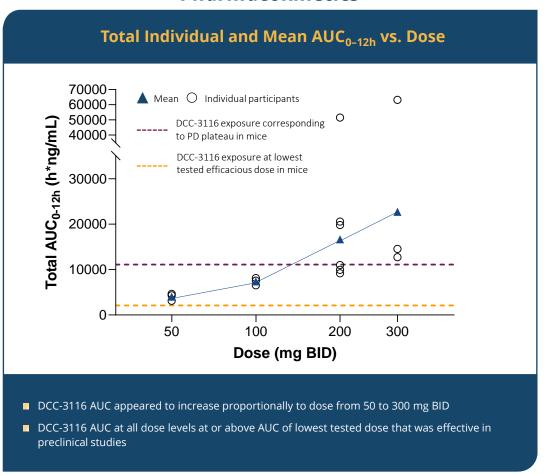
- Best overall response was stable disease
- Disease control rate at week 16 was 29% (4 of 14 response-evaluable participants)



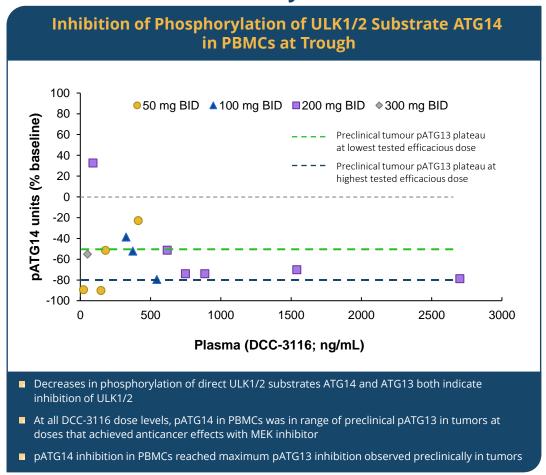
Notes: Data presented at the ESMO Congress 2022; data cutoff: June 9, 2022; BID=twice daily; BRAF=proto-oncogene b-RAF; KRAS=Kirsten rat sarcoma virus.

## INITIAL PK/PD DATA AT ALL DOSE LEVELS IS CONSISTENT WITH PREDICTED ACTIVITY BASED ON PRECLINICAL STUDIES

### **Pharmacokinetics**



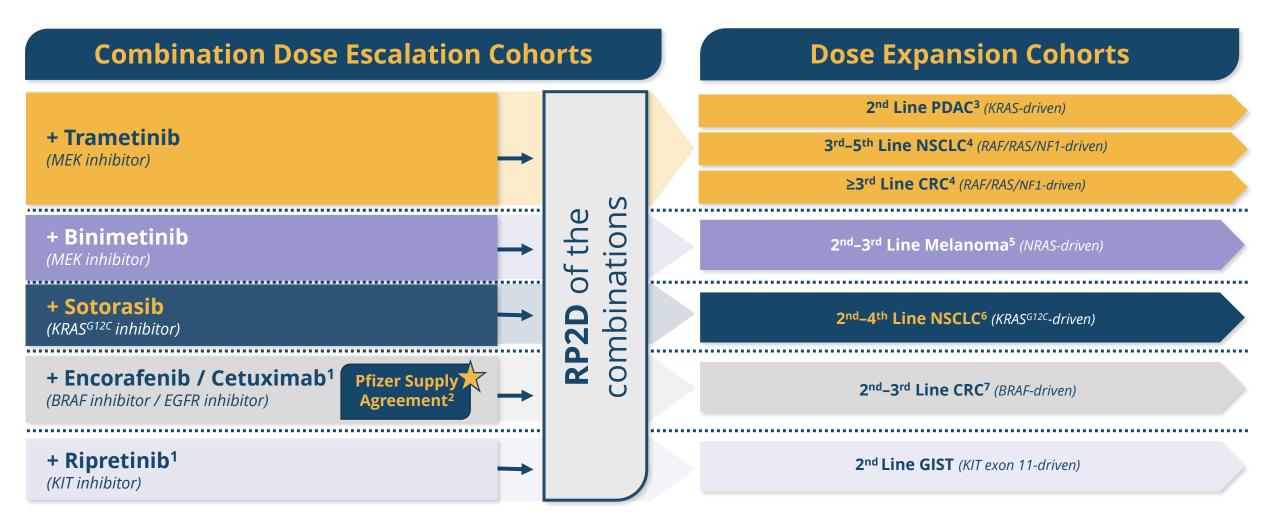
### **Pharmacodynamics**





**Notes**: Data presented at the ESMO Congress 2022; data cutoff: June 9, 2022; ATG13= Autophagy Related 13; ATG14=Autophagy Related 14: BID=twice daily; MEK=MAPK/ERK kinase; pATG13=phospho-ATG13; pATG14=phospho-ATG14; PBMCs=peripheral blood mononuclear cells; PD=pharmacodynamics; PK=pharmacodynamics; ULK=unc-51-like autophagy-activating kinase.

### PHASE 1 COMBINATION COHORTS EVALUATING MULTIPLE COMBINATIONS





Notes: CRC=colorectal cancer; G12C=single point mutation with a glycine-to-cysteine substitution at codon 12; KRAS=Kirsten rat sarcoma virus; MEK=MAPK/ERK kinase; MTD=maximum tolerated dose; NRAS=neuroblastoma RAS viral oncogene homolog; NSCLC=non-small-cell lung cancer; PDAC=pancreatic ductal adenocarcinoma; RAF=rapidly accelerated fibrosarcoma serine/threonine protein kinase; RAS=rat sarcoma gene; RP2D=recommended Phase 2 dose; (1) Corporate goal planned for 2H 2023; (2) Under the terms of the clinical trial collaboration and supply agreement with Pfizer, Inc., Deciphera will supply encorporate goal planned for 1 protein kinase; RAS=rat sarcoma gene; RP2D=recommended Phase 2 dose; (1) Corporate goal planned for 2H 2023; (2) Under the terms of the clinical trial collaboration and NRAS; (4) with a documented mutation in KRAS, NRAS, NR

# PROPRIETARY DRUG DISCOVERY PLATFORM





### DECIPHERA'S PROPRIETARY DRUG DISCOVERY PLATFORM

### DRIVING INNOVATION THROUGH OUR PROVEN DISCOVERY ENGINE



Fueled by our **proprietary drug discovery platform**, we intend to advance new drug candidates into clinical development to continue to fulfill our mission to defeat cancer

### **Expected 2023 Milestones**

Nominate development candidate for pan-KIT Inhibitor

**Completed (1Q 2023)** 

Present new preclinical data from research programs

Completed (1Q 2023)

Present data on the preclinical profile of DCC-3084

Completed (1Q 2023)

**Submit IND to FDA for DCC-3084** 

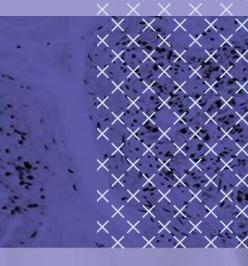
2H 2023



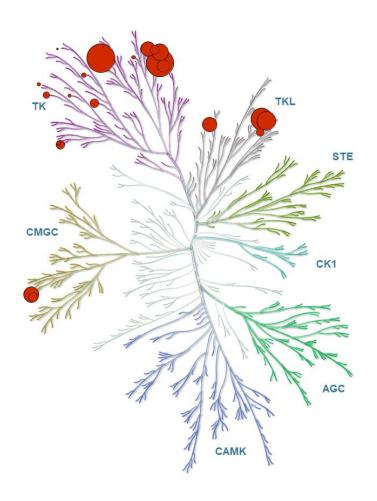
Notes: FDA=U.S. Food and Drug Administration; IND=Investigational New Drug Application; KIT=KIT proto-oncogene receptor tyrosine kinase

# DCC-3084





### DCC-3084 IS A POTENT AND SELECTIVE PAN-RAF INHIBITOR



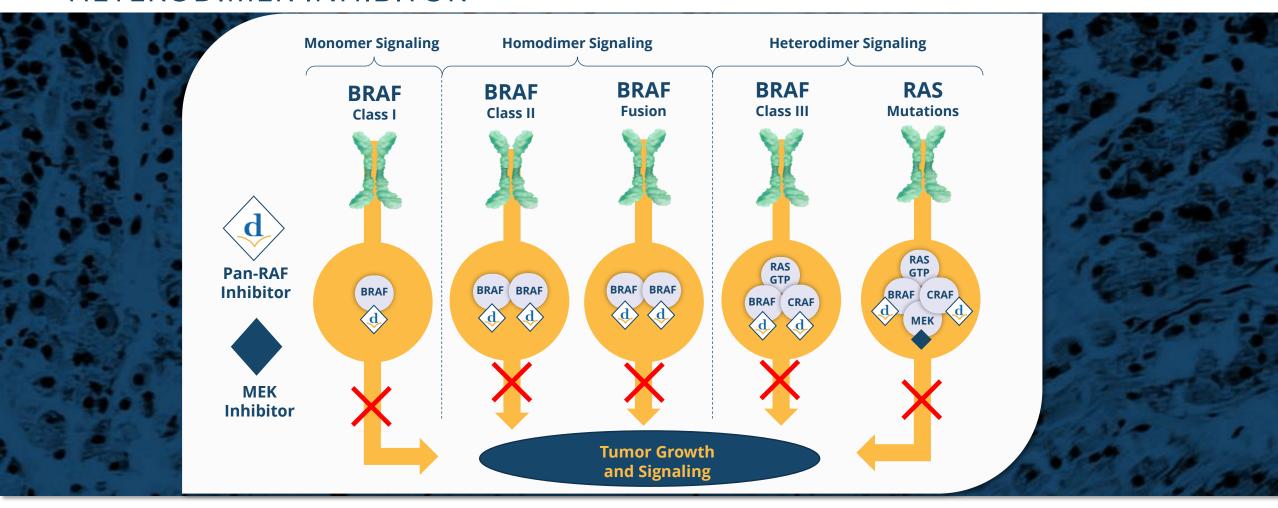
- DCC-3084 is a **potential best-in-class pan-RAF inhibitor** engineered using Deciphera's proprietary switch-control platform
- Potent and selective inhibitor of BRAF and CRAF kinases, shown preclinically to target all relevant aberrant signaling mechanisms (monomers, homodimers, heterodimers)
- **High permeability, CNS penetrance**, and **solubility** at gastric pH to facilitate tumor access
- Long residency time, low efflux, and transporter inhibition to enable durable efficacy
- **Strong pre-clinical data** supports single agent use in RAF and RAS mutant cancers, and deeper responses in combination with MEK inhibitors



Notes: BRAF=proto-oncogene b-RAF; CNS=central nervous system; CRAF=proto-oncogene c-RAF; MEK=mitogen-activated extracellular signal-regulated kinase; RAF=rapidly accelerated fibrosarcoma serine/threonine protein kinase; RAS=rat sarcoma gene.

### DCC-3084 | OVERVIEW

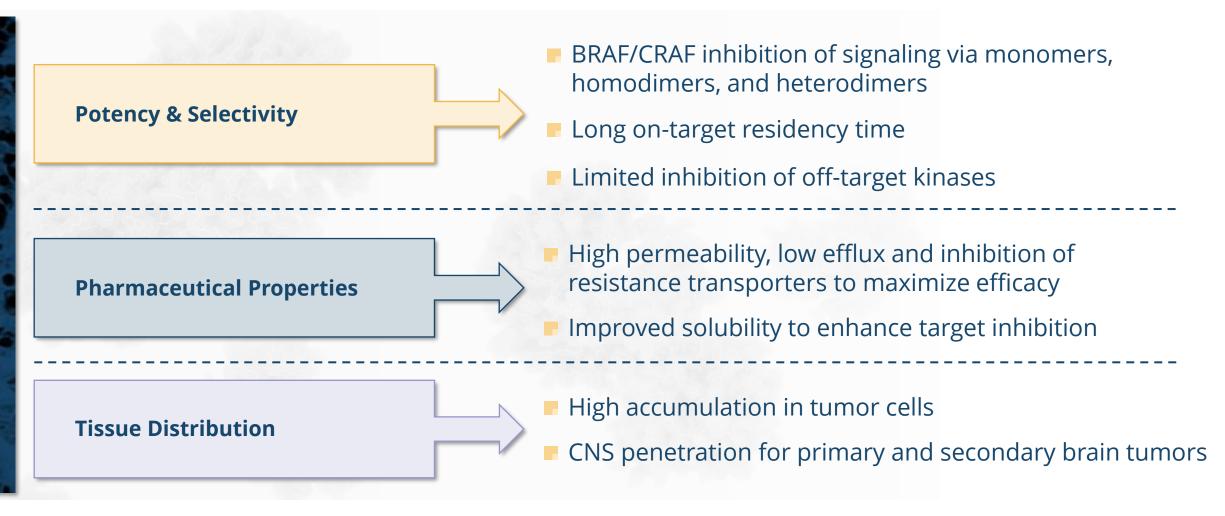
## POTENTIAL BEST-IN-CLASS BRAF/BRAF HOMODIMER AND BRAF/CRAF HETERODIMER INHIBITOR





 $\textbf{Notes:} \ BRAF=proto-oncogene \ b-RAF; CRAF=proto-oncogene \ c-RAF; GTP=guanosine \ triphosphate; MEK=mitogen-activated \ extracellular \ signal-regulated \ kinase; RAS=rat \ sarcoma \ gene.$ 

### KEY PROPERTIES FOR A BEST-IN-CLASS PAN-RAF INHIBITOR





Notes: BRAF=proto-oncogene b-RAF; CNS=central nervous system; CRAF=proto-oncogene c-RAF; RAF=rapidly accelerated fibrosarcoma serine/threonine protein kinase.

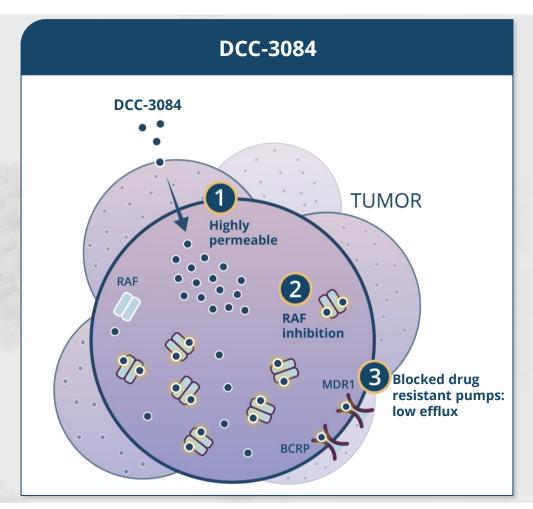
## DCC-3084 EXHIBITS OVERALL BEST-IN-CLASS INHIBITION OF CLASS I, II, AND III BRAF-MUTANTS AND RAF FUSION CELL LINES

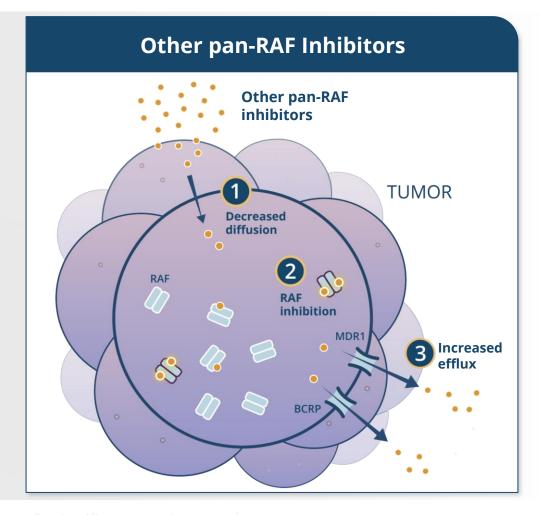
	Cla	ss I	Clas	ss II	Fusion	Class III + NRAS	
Inhibitor	A375	HT-29	BxPC-3	H2405	WM3928	WM3629	IC <sub>50</sub> (nM)
DCC-3084	54	13	61	74	42	3	
tovorafenib	3,000	5,270	1,100	603	669	305	
naporafenib	438	228	19	465	90	3	
belvarafenib	144	128	59	149	14	2	
exarafenib	170	101	254	549	98	17	
JZP815	141	47	200	47	133	2	



Notes: Data presented at the AACR Annual Meeting 2023; BRAF=proto-oncogene b-RAF; NRAS=neuroblastoma RAS viral oncogene homolog; RAF=rapidly accelerated fibrosarcoma serine/threonine protein kinase.

## DCC-3084 HAS EXCELLENT PERMEABILITY, LOW EFFLUX, AND IS A STRONG INHIBITOR OF THE MDR1 AND BCRP DRUG RESISTANCE TRANSPORTERS

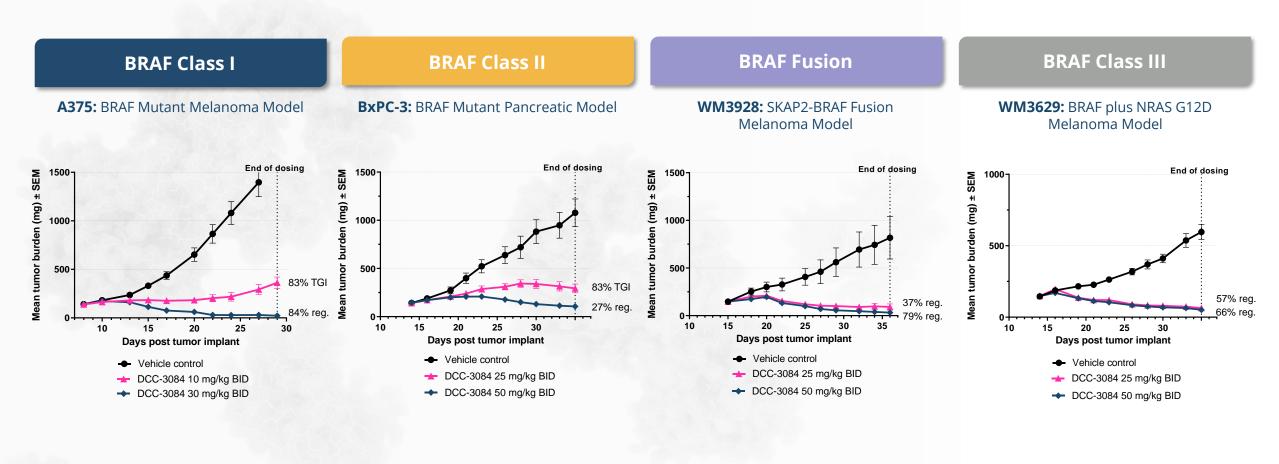






Notes: BCRP=breast cancer resistance protein transporter; MDR1=multidrug resistance mutation transporter; RAF=rapidly accelerated fibrosarcoma serine/threonine protein kinase.

## DCC-3084 PRODUCES TUMOR REGRESSIONS IN BRAF MUTANT CANCER MODELS AS A SINGLE AGENT

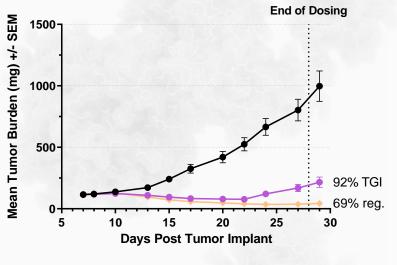




Notes: Data presented at the AACR Annual Meeting 2023; BID=twice daily; BRAF=proto-oncogene b-RAF; NRAS=neuroblastoma RAS viral oncogene homolog.

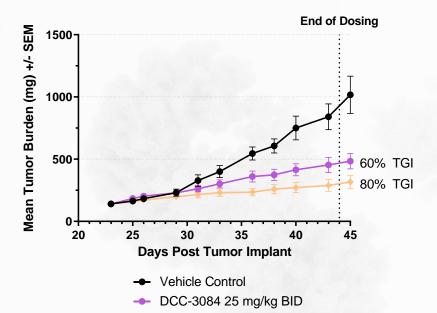
## DCC-3084 PRODUCES SINGLE AGENT TUMOR REGRESSION OR TUMOR GROWTH INHIBITION IN MUTANT RAS MODELS DRIVEN BY BRAF/CRAF

### Calu-6: KRAS Q61K Lung Cancer



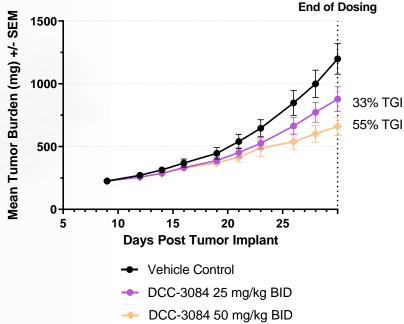
- Vehicle Control
- DCC-3084 25 mg/kg BID
- DCC-3084 50 mg/kg BID

### H358: KRAS G12C Lung Cancer



DCC-3084 50 mg/kg BID

### **HPAF-II:** KRAS G12D Pancreatic Cancer

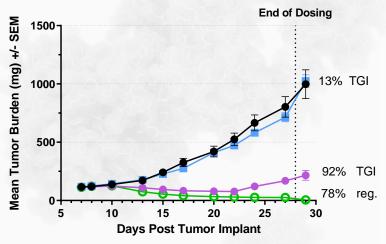




Notes: Data presented at the AACR Annual Meeting 2023; BID=twice daily; BRAF=proto-oncogene b-RAF; CRAF=proto-oncogene c-RAF; KRAS=Kirsten rat sarcoma virus; RAS=rat sarcoma gene; Reg.=regression; TGI=tumor growth inhibition.

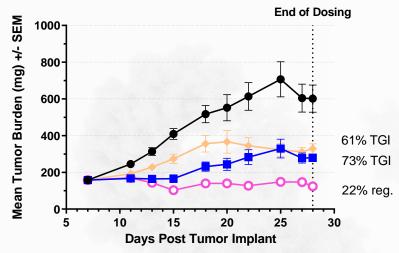
## DCC-3084 PRODUCES DEEPER TUMOR REGRESSION IN KRAS MUTANT CANCER MODELS IN COMBINATION WITH MEK INHIBITORS

### Calu-6: KRAS Q61K Lung Cancer



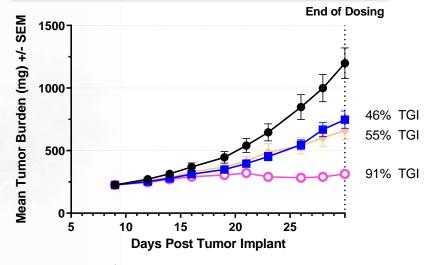
- Vehicle Control
- cobimetinib 1 mg/kg QD
- DCC-3084 25 mg/kg BID
- OCC-3084 25 mg/kg BID + cobimetinib 1 mg/mg/kg QD

### H358: KRAS G12C Lung Cancer



- Vehicle Control
- binimetinib 5 mg/kg QD
- DCC-3084 50 mg/kg BID
- DCC-3084 50 mg/kg BID + binimetinib 5 mg/kg QD

### **HPAF-II:** KRAS G12D Pancreatic Cancer



- Vehicle Control
- binimetinib 5 mg/kg QD
- → DCC-3084 50 mg/kg BID
- DCC-3084 50 mg/kg BID + binimetinib 5 mg/kg QD

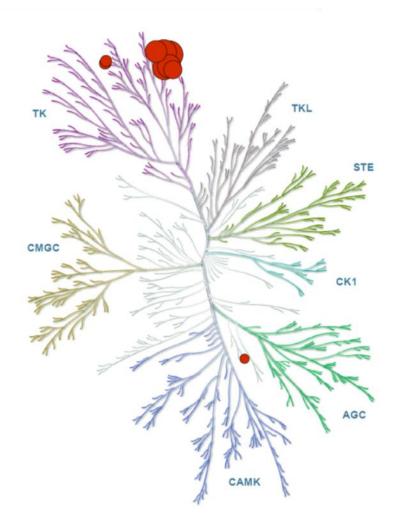


Notes: Data presented at the AACR Annual Meeting 2023; BID=twice daily; KRAS=Kirsten rat sarcoma virus; MEK=mitogen-activated extracellular signal-regulated kinase; QD=once daily; Reg.=regression; TGI=tumor growth inhibition.

# DCC-3009



### DCC-3009 IS A POTENT AND SELECTIVE NEXT-GEN KIT INHIBITOR

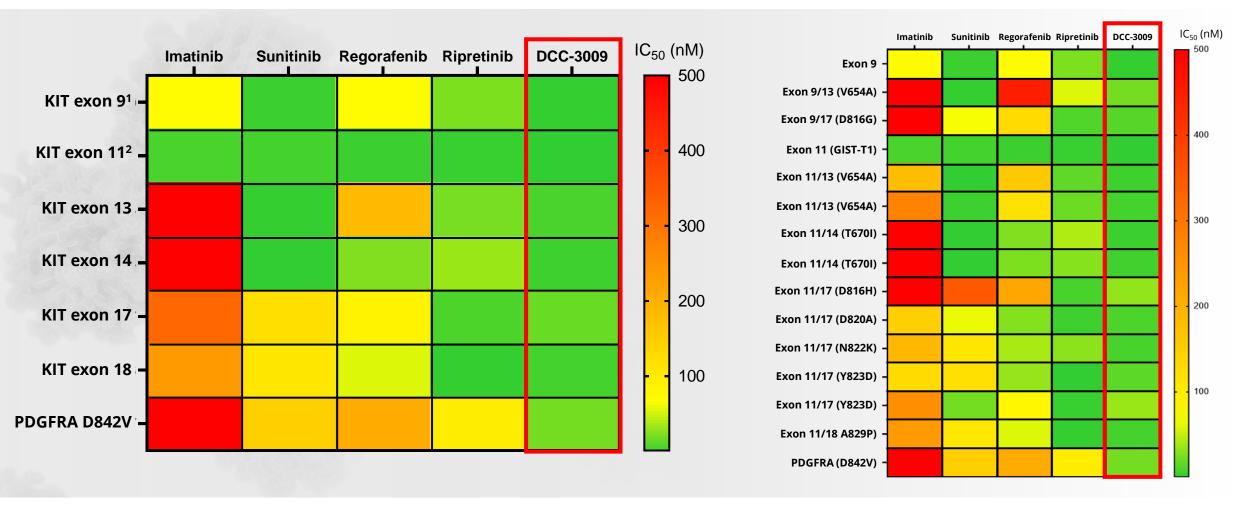


- DCC-3009 is a **potential best-in-class pan-KIT inhibitor** engineered using Deciphera's proprietary switch-control platform
- Unmet medical need remains for a pan-KIT inhibitor that can broadly and potently inhibit the spectrum of KIT mutations that drive GIST
- Potent inhibitor of primary KIT mutations in exons 9 and 11 and secondary mutations across exons 13, 14, 17, and 18
- Highly selective for KIT with optimized pharmaceutical and ADME properties
- Strong pre-clinical efficacy data in xenograft models driven by drug resistant KIT mutations



Notes: ADME=absorption, distribution, metabolism, and excretion; GIST=gastrointestinal stromal tumor; KIT=KIT proto-oncogene receptor tyrosine kinase.

## DCC-3009 POTENTLY INHIBITS THE SPECTRUM OF KNOWN PRIMARY AND SECONDARY DRUG-RESISTANT MUTATIONS IN GIST

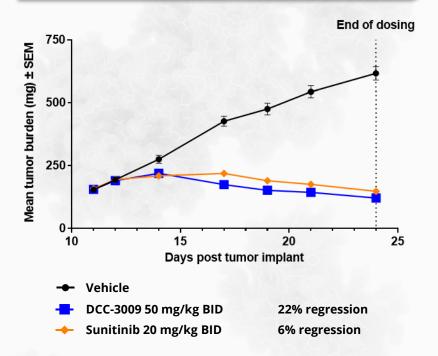




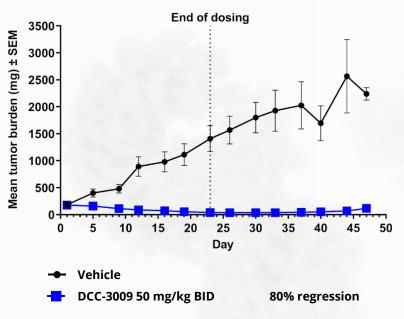
Notes: GIST=gastrointestinal stromal tumor; GIST-T1=exon 11 del; (1) exon 9 primary is A502/Y503 duplication; (2) exon 11 primary mutations include deletions or the V560D point mutation.

## DCC-3009 RESULTED IN TUMOR REGRESSIONS IN GIST XENOGRAFT MODELS, INCLUDING KIT EXONS 9, 11, 13 AND 17 MUTATIONS

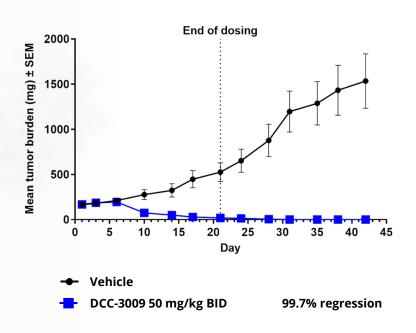
### V654A: BaF3 KIT Exon 9 AY dup / Exon 13



### V654A: GIST PDX KIT Exon 11 delWK / Exon 13



## **Y823D:** GIST PDX KIT Exon 11 delWK / Exon 17



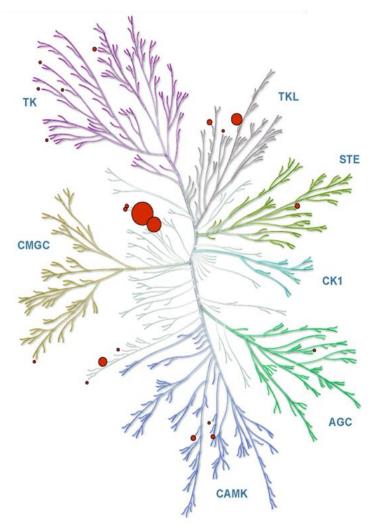


Notes: Data presented at the AACR Annual Meeting 2023; BID=twice daily; GIST=gastrointestinal stromal tumor; KIT=KIT proto-oncogene receptor tyrosine kinase; PDX=patient-derived xenograft.

# DP-9149 (GCN2 ACTIVATOR)



### DP-9149 IS A POTENT AND SELECTIVE ACTIVATOR OF THE GCN2 KINASE



### **Compelling Preclinical Data**

- Potent and selective activator of GCN2 kinase
- Strong single agent activity in solid tumor models *in vivo*
- Tumor regressions in combination with standard of care agents *in vivo*

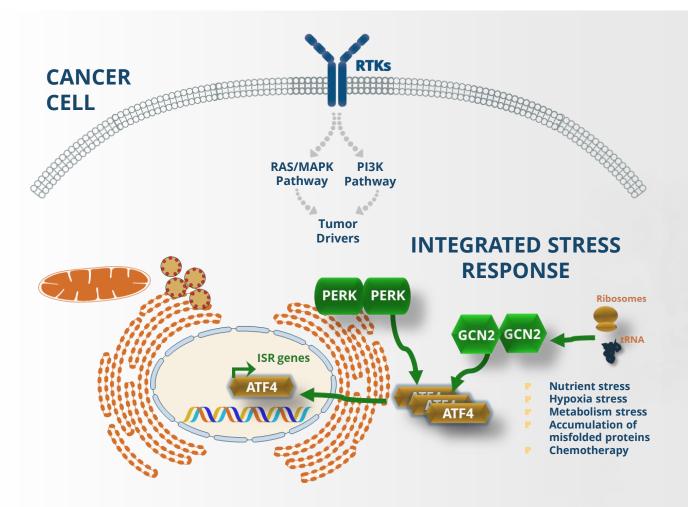
### **Novel Mechanism of Action**

- Leveraging the cytotoxic arm of the Integrated Stress Response pathway enables the engagement of cancer cell death pathways
- GCN2 overexpression in solid tumors provides a favorable therapeutic window as evident by tolerability in preclinical models
- Synergizes with other stress-inducing therapies (antiangiogenics/tumor driver-targeting agents) and effective in RAS/MAPK driven cancers



Notes: GCN2=general control nonderepressible 2; MAPK=mitogen-activated protein kinase; RAS=rat sarcoma gene

### THE INTEGRATED STRESS RESPONSE PATHWAY & GCN2 ACTIVATION



- The Integrated Stress Response (ISR) is a major adaptive stress response pathway in cancer and plays an important role in cell fate determination
- Oncogene addicted solid tumors are under high stress levels and are dependent on a well-balanced ISR pathway for accelerated growth
- Inhibition or stimulation of GCN2 in solid tumors can be pharmacologically leveraged to induce anti-tumoral effects
- Deciphera's GCN2 activator (DP-9149) has shown anti-tumoral effects in solid tumors in vitro and in vivo

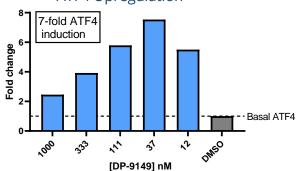


**Notes:** ATF4=activating transcription factor 4; GCN2=general control nonderepressible 2; ISR=Integrated Stress Response; MAPK=mitogen-activated protein kinase; PERK=protein kinase R-like endoplasmic reticulum kinas; PI3K=phosphatidylinositol-3 kinase; RAS=rat sarcoma gene; RTK=receptor tyrosine kinase.

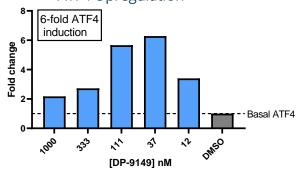
### DP-9149 SELECTIVELY AND POTENTLY ACTIVATES GCN2 AND HAS AN OPTIMIZED PHARMACEUTICAL AND SELECTIVITY PROFILE

### **DP-9149 Upregulates the ISR Pathway and Potently Inhibits Cell Growth as a Single Agent**

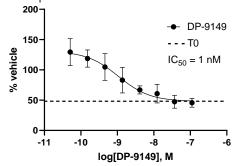




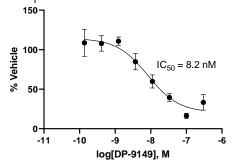
LoVo: KRAS G13D Colorectal ATF4 Upregulation



#### 786-O: Renal Cell Carcinoma Spheroid Growth Inhibition



LoVo: KRAS G13D Colorectal Spheroid Growth Inhibition



### **DP-9149 was Designed** as a Potent and Selective Activator of GCN2

	Assay	DP-9149	
Enzymatic Assays	GCN2 recombinant enzyme activation versus control	2.5-fold activation	
Callular Assaus	ATF4 stimulation versus control 786-O (Renal; VHL-mut)	7-fold activation	
	ATF4 Stimulation versus control LoVo (Colorectal; KRAS G13D)	6-fold activation	
Cellular Assays	Spheroid growth inhibition 786-O (Renal; VHL-mut)	IC <sub>50</sub> = 1 nM	
	Spheroid growth inhibition LoVo (Colorectal; KRAS G13D)	IC <sub>50</sub> = 8.2 nM	
Off-Target Profile	Kinome selectivity and safety (Cerep)	High selectivity	
In Vivo	PK/PD	Target engagement achieved	

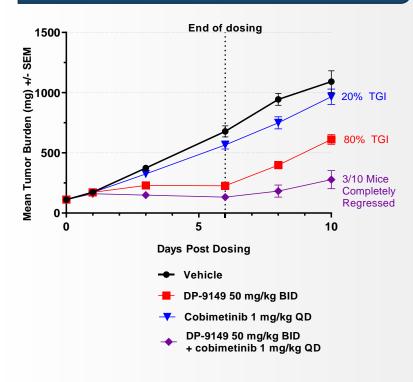


Notes: Data presented at the AACR Annual Meeting 2023; ATF4=activating transcription factor; DMSO=dimethyl sulfoxide; GCN2=general control nonderepressible 2; ISR=Integrated Stress Response; KRAS=Kirsten rat sarcoma virus PD=pharmacodynamic: PK=pharmacokinetic: VHL=Von Hippel-Lindau.

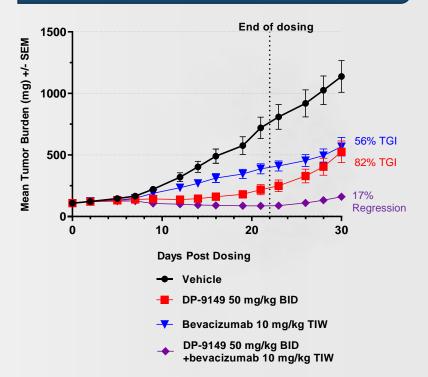
### GCN2 KINASE ACTIVATOR | PRECLINICAL DATA

## DP-9149 RESULTS IN TUMOR GROWTH INHIBITION AS A SINGLE AGENT AND TUMOR REGRESSIONS IN COMBINATION *IN VIVO*

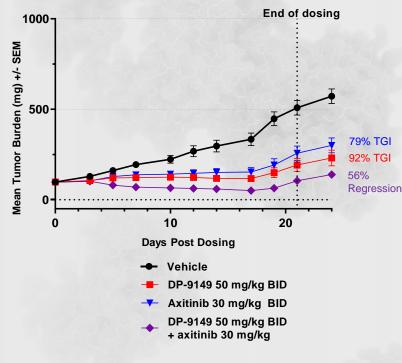
## **HT-1080:** NRAS Fibrosarcoma Model DP-9149 + Cobimetinib



## **LoVo:** KRAS G13D CRC Model DP-9149 + Bevacizumab



## **786-O:** VHL Mutant RCC Model DP-9149 + Axitinib





Notes: Data presented at the AACR Annual Meeting 2023; HT-1080 TGI was calculated on Day 6; LoVo TGI was calculated on Day 21; 786-8 TGI was calculated on Day 19; BID=twice daily; CRC=colorectal cancer; GCN2=general control nonderepressible 2; QD=once a day; BID= twice a day; RCC=renal cell carcinoma; TGI=tumor growth inhibition; TIW=3 times a week.

#### **DECIPHERA**

### **EXPECTED 2023 MILESTONES**

## QINL6CK

- ✓ Present additional data from Phase 3 INTRIGUE ctDNA analysis at an ASCO Plenary Session
- Initiate INSIGHT Phase 3 study in 2L KIT exon 11+17/18 GIST patients (2H 2023)
- Continue geographic expansion with launches in key European markets (2023)

### **VIMSELTINIB**

- ✓ Complete enrollment in the Phase 3 MOTION study
- Announce top-line results from MOTION study (4Q 2023)
- Present updated Phase 1/2 data in TGCT patients (2H 2023)

### **DCC-3116**

- ✓ Present preclinical data on new combinations
- Present updated Phase 1 single agent and initial combination dose escalation data (2H 2023)
- Initiate MEK/G12C expansion cohort(s); initiate escalation cohort for encorafenib/cetuximab (2H 2023)

### DCC-3084

- ✓ Present data on preclinical profile
- Submit IND to FDA (2H 2023)

### PROPRIETARY DRUG DISCOVERY PLATFORM

- Nominate development candidate for pan-KIT inhibitor (DCC-3009 pan-KIT inhibitor)
- ✓ Present new preclinical data from research programs



Notes: 2L=second-line; ASCO=American Society of Clinical Oncology; ctDNA=circulating tumor deoxyribonucleic acid; FDA=U.S. Food and Drug Administration; G12C=single point mutation with a glycine-to-cysteine substitution at codon 12; GIST=gastrointestinal stromal tumor; IND=Investigational New Drug Application; KIT=KIT proto-oncogene receptor tyrosine kinase; MEK=mitogen-activated extracellular signal-regulated kinase; TGCT=tenosynovial giant cell tumor.



## FINANCIAL HIGHLIGHTS

As of March 31, 2023

Weighted-Average Shares Outstanding<sup>1</sup>

82.7MM

Weighted average shares includes outstanding common stock and common stock issuable upon exercise of prefunded warrants

**Cash, Cash Equivalents & Marketable Securities** 

\$426.3MM

Operating Expenses and CapEx into 2026<sup>2</sup>



# THANK YOU

