

# DEFEATING CANCER: The Challenge. Our Mission.

December 2020



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clinical and non-clinical studies, our reliance on

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### **Executing on Our Mission**

At Deciphera,
we are focused
on discovering,
developing, and
bringing important
new medicines to
patients for the
treatment of cancer.



Successfully **launch** QINLOCK® (ripretinib) in the U.S.



Drive the development of QINLOCK in **2**<sup>nd</sup> line GIST (INTRIGUE)



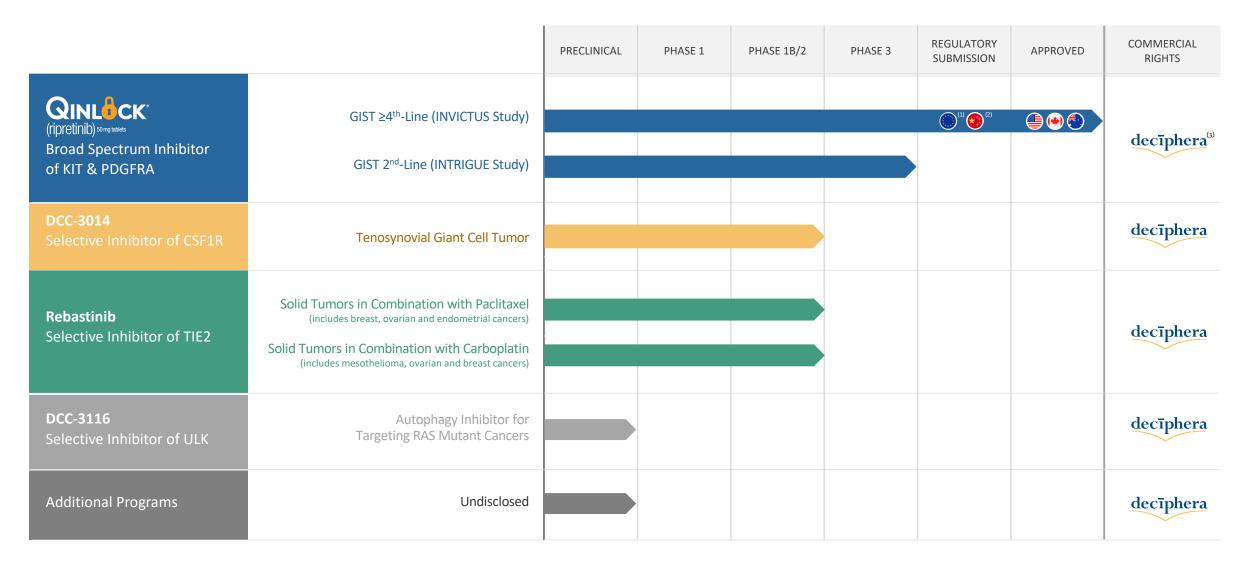
Rapidly advancing wholly-owned clinical-stage portfolio(1)



Novel switch control kinase inhibitor discovery platform fuels the pipeline



### Robust Pipeline of Novel Switch-Control Kinase Inhibitors





Notes: CSF1R=colony stimulating factor 1 receptor; GIST=gastrointestinal stromal tumor; KIT=KIT proto-oncogene receptor tyrosine kinase; PDGFR $\alpha$ =platelet-derived growth factor receptor  $\alpha$ ; RAS=rat sarcoma gene; TIE2=TEK tyrosine kinase; ULK=unc-51-like kinase.

1) Submitted and received validation of a Marketing Authorisation Application for QINLOCK in fourth-line GIST by the European Medicines Agency; 2) China National Medical Products Administration has accepted a New Drug Application for ripretinib for the treatment of adult patients with fourth-line GIST; 3) Development and commercialization exclusive license with Zai Lab in Greater China.



2020

#### **Expected Milestones for the Year Ahead**



- ✓ FDA approval and U.S. commercial launch in 4<sup>th</sup> line GIST
- Present Phase 1 study expansion data
- ✓ Submit EU Marketing Authorisation Application to EMA
- ✓ Complete enrollment in the INTRIGUE Phase 3 study in 2<sup>nd</sup> line GIST

**DCC-3014** 

✓ Select Phase 2 dose for tenosynovial giant cell tumor (TGCT) and initiate the expansion portion of study

✓ Update Phase 1 data in TGCT patients

Rebastinib

- ✓ Select Phase 2 dose and activate Part 2 of Phase 1b/2 study in combination with carboplatin
- ✓ Present Phase 1b/2 data in combination with paclitaxel
- ✓ Present Phase 1b/2 data in combination with carboplatin

Submit IND application to FDA

**DCC-3116** 

### QINLOCK®: Now Approved in the United States



#### **U.S. FDA Approval & Commercial Launch**

- Approved by U.S. FDA in 4<sup>th</sup> line GIST on May 15, 2020
- Net sales in first full quarter of \$14.7MM (3Q20); \$19.5MM (launch to 3Q20)

#### **Multiple Global Regulatory Filings and Approvals**

- Approved by Health Canada (June 2020) and Australian TGA (July 2020)
- Accepted NDA to China National Medical Products Administration (July 2020)<sup>1</sup>
- Submitted MAA to European Medicines Agency (Validated 4Q20)

#### Ongoing Global Phase 3 Study in 2<sup>nd</sup> Line GIST (INTRIGUE)

- Completed target enrollment of 426 patients
- Top-line data expected in 2H21

QINLOCK is the first approved TKI designed specifically for GIST regardless of patients' mutational status



# QINLOCK: 4 Strategic Objectives For Launch

1	Educate and raise awareness	<ul> <li>Extensive mutational heterogeneity drives resistance to established therapies</li> </ul>
2	Differentiate QINLOCK®	<ul> <li>Novel switch control mechanism of action</li> <li>Potent inhibition of broad spectrum of mutations in vitro</li> <li>Potentially practice-changing efficacy</li> <li>Favorable tolerability with low dose modifications due to AEs</li> </ul>
3	Reach and impact GIST prescribers	<ul> <li>Academic centers of excellence</li> <li>Community practices</li> </ul>
4	Optimize patient access	<ul> <li>Deciphera AccessPoint™</li> <li>Comprehensive patient support programs and resources</li> </ul>



### QINLOCK® U.S. Launch Success in 3Q20

Net Sales First Full Quarter

(3Q20)

\$14.7 MILLION **Unique Prescribers** 

(Launch-to-Date)

250+

**Unique Institutions** 

(Launch-to-Date)

200+

#### **Initial Launch Details**

- Continued strong demand, new prescriber growth, and broad access
- New prescribers more than doubled during the quarter
- Strong awareness, product perceptions, and intent to prescribe among GIST treaters with 4th line patients

Community Accounts





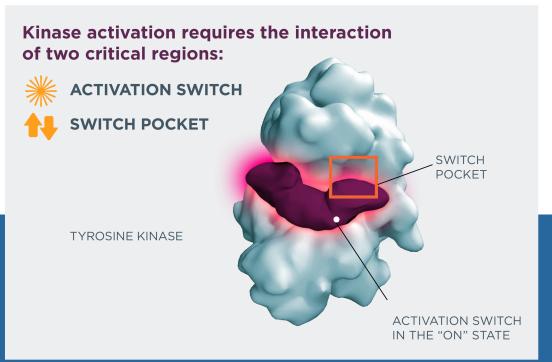
Prescribers

**Patients** 

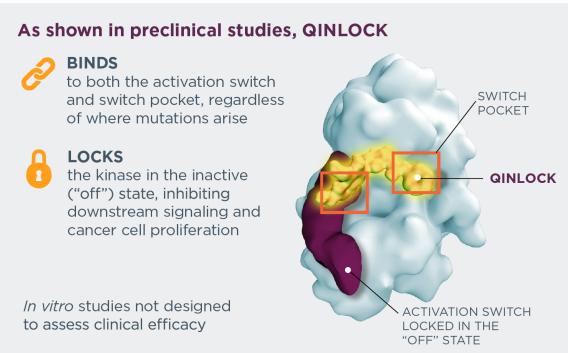


# QINLOCK®: A Novel Switch-Control Kinase Inhibitor Engineered to Block the Drivers of Resistance in Advanced GIST

Switched on: Kinase active

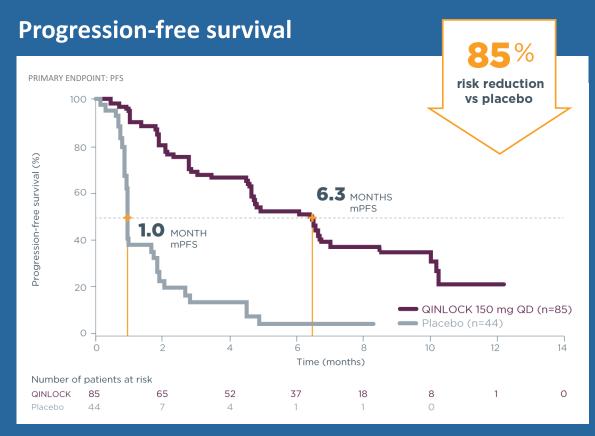


**Switched off:** Kinase inactive

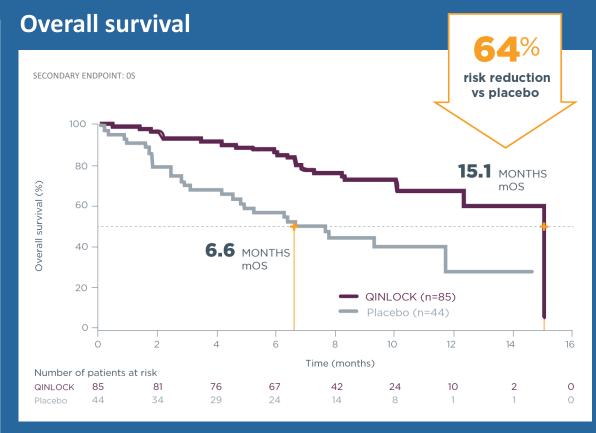


The dual MOA of QINLOCK provided broad-spectrum inhibition of KIT and PDGFR $\alpha$  kinase signaling *in vitro*, including multiple primary and secondary mutations and wild type GIST

### QINLOCK®: A Potential Best-In-Class Treatment for Advanced GIST



(median PFS of 6.3 months vs. 1.0 month; HR=0.15, 95% CI [0.09-0.25], P<0.0001)



(median OS of 15.1 months vs. 6.6 months; HR=0.36, 95% CI [0.21-0.62])

Key secondary endpoint of objective response rate was 9.4% compared with 0% for placebo (P=0.0504)



# QINLOCK®: Safety Highlights from the Prescribing Information

#### **Most Common Adverse Reactions (≥20%; Any Grade)**

 Alopecia, fatigue, nausea, abdominal pain, constipation, myalgia, diarrhea, decreased appetite, palmar-plantar erythrodysesthesia syndrome, and vomiting

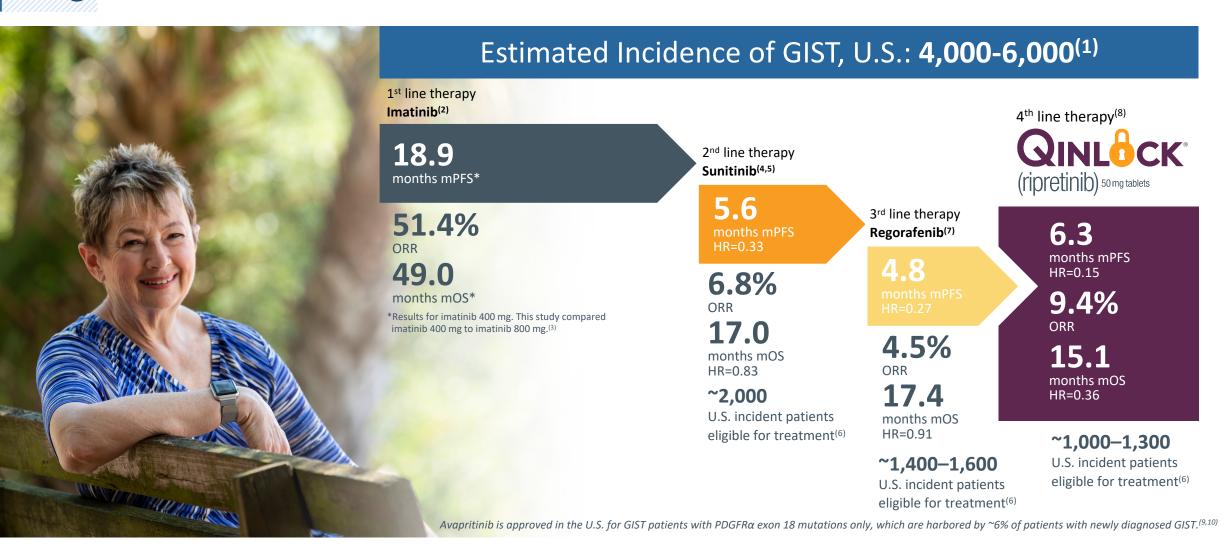
#### **Warnings and Precautions**

- Palmar-plantar erythrodysesthesia syndrome
- New primary cutaneous malignancies
- Hypertension
- Cardiac dysfunction
- Risk of impaired wound healing
- Embryo-fetal toxicity

Dose Modifications from INVICTUS Phase 3 Study <sup>(1)</sup>					
Any adverse reaction leading to	RIPRETINIB (n=85)	<b>PLACEBO</b> (n=43) <sup>(2)</sup>			
Treatment discontinuation	7 (8%)	5 (12%)			
Dose interruption	20 (24%)	9 (21%)			
Dose reduction	6 (7%)	1 (2%)			



### Significant Unmet Medical Need Post-Imatinib



Notes: HR=hazard ratio; mOS=median overall survival; mPFS=median progression free survival; ORR=objective response rate.



(1) American Cancer Society, Key Statistics for Gastrointestinal Stromal Tumors, Accessed December 13, 2019; (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 3<sup>rd</sup> and 4<sup>th</sup> 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; 2020; (9) Ayvakit [package insert]. Cambridge, MA: Blueprint Medicines Corp; 2020; (10) Lopes LF, Bacchi CE. *J Cell Mol Med*. 2010;14:42-50.

# QINLOCK®: Phase 1 GIST Cohorts Positive Updated Results Across All Lines of Treatment

Line of Therapy <sup>(1)</sup>	2 <sup>nd</sup> Line (n=31)	3 <sup>rd</sup> Line (n=28)	≥4 <sup>th</sup> Line (n=83)
Median Progression Free Survival	10.7 months	8.3 months	5.5 months
Objective Response Rate	19.4%	14.3%	7.2%
Median Duration of Response	18.4 months	NE	17.5 months
Mean Treatment Duration <sup>(2,3)</sup>	13.2 months	13.4 months	10.5 months

#### Ripretinib 150 mg QD (n=142)



# intrigue

# Ongoing Global Pivotal Phase 3 Study in 2<sup>nd</sup> Line GIST



Prior Imatinib Therapy



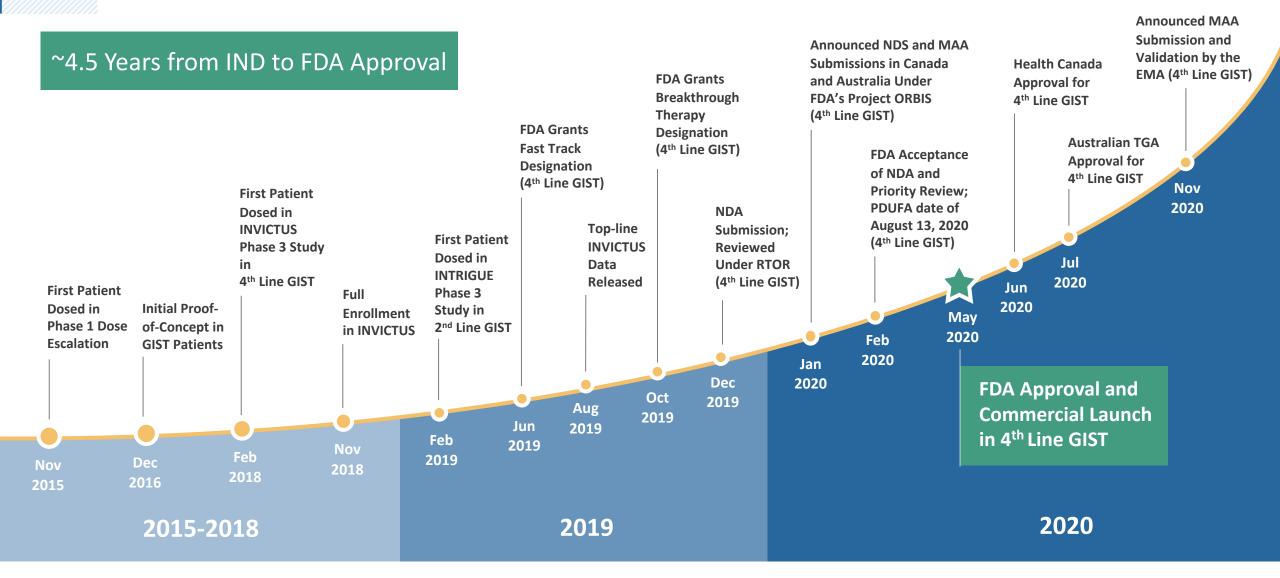
# PRIMARY ENDPOINT

= ProgressionFree SurvivalNo Cross-over Option

TOP-LINE DATA
Expected in
2H 2021

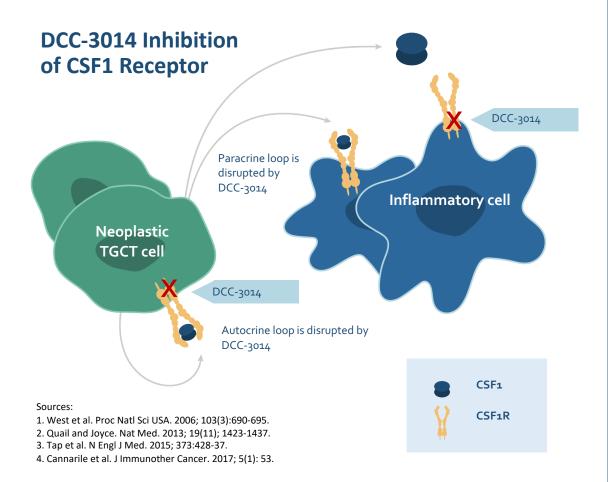


# QINLOCK® (ripretinib): Rapid Clinical Development to Approval





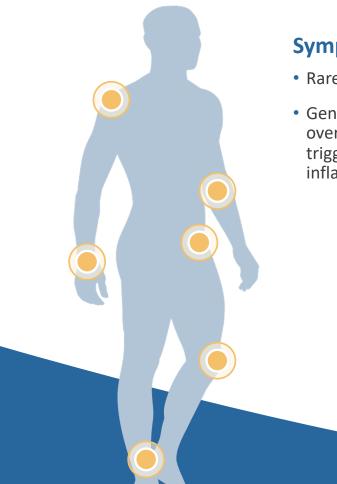
### DCC-3014: A Highly Selective and Potent CSF1R Inhibitor



- Phase 1/2 study of DCC-3014 is ongoing
- Preliminary results showed highly encouraging signs of antitumor activity in TGCT patients (n=22)
  - 41% of patients (9 of 22) across all TGCT cohorts achieved an objective response, including one complete response
  - 78% of responders (7 of 9 patients) had a partial response at their first restaging scan evaluation (week 9)
- Treatment was generally well-tolerated with treatment emergent adverse events mostly grade 1/2
- The recommended Phase 2 dose for DCC-3014 in TGCT patients was determined to be 30 mg twice weekly (no loading dose)



# Unmet Medical Need in Tenosynovial Giant Cell Tumor (TGCT)



#### **Symptoms**

- Rare, locally aggressive tumors
- Genetic translocation causes overproduction of CSF-1, triggering migration of inflammatory cells to tumor sites

#### **Two Types of TGCT**

#### 1. Localized TGCT

- Affects fingers, toes, knee, wrist and ankle
- Annual incidence of new cases in the U.S.: ~13,000<sup>(1)</sup>

#### 2. Diffuse TGCT

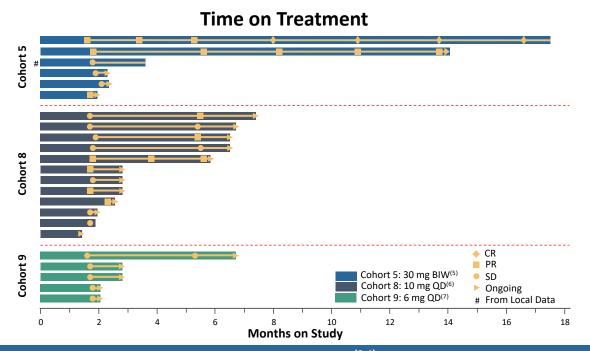
- Most commonly affects the knee, as well as hip, ankle, elbow and shoulder
- Annual incidence of new cases in the U.S.: ~1,300<sup>(1)</sup>

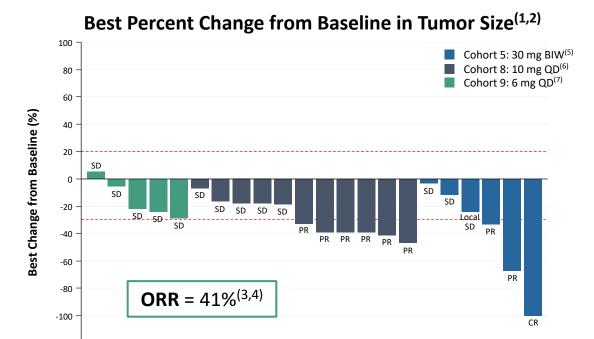
#### **Unmet Medical Need**

- Surgical resection is standard treatment
- High rate of recurrence in diffuse TGCT
- CSF1R inhibition has demonstrated clinical benefit in diffuse TGCT
- Pexidartinib received FDA approval in August 2019
  - REMS and intensive monitoring required due to hepatotoxicity concerns (off-target)
  - CHMP adopted a negative opinion on the MAA in June 2020
- Unmet medical need for effective CSF1R inhibitor with favorable safety/tolerability profile for TGCT patients



# **DCC-3014:** Dose Escalation in Phase 1 Shows Encouraging Anti-Tumor Activity in **TGCT** Patients





#### **Encouraging Preliminary Anti-Tumor Activity** (3,4)

- 9 patients (41%) across all TGCT cohorts achieved an objective response (1 CR, 8 PR)
- 7 of the 9 responders (78%) had a partial response at their first restaging scan evaluation (week 9)

#### Preliminary Safety Data Shows DCC-3014 as Well Tolerated In TGCT Patients

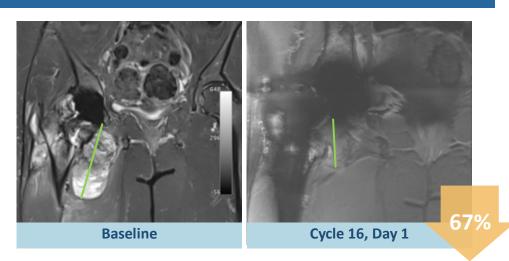
- TEAEs occurring in ≥25% of patients regardless of relatedness were blood CPK increased (52%), AST increased (44%), periorbital edema (44%), fatigue (40%), lipase increased (32%), and ALT increased (28%). No SAEs related to DCC-3014 were reported
- All bilirubin levels were within the normal limit and observed transaminase and pancreatic enzyme elevations were asymptomatic and not clinically significant
- One patient (4%) discontinued treatment due to an adverse event (Grade 3 AST elevation from Grade 1 at baseline)



Notes: Data presented at CTOS Annual Meeting 2020; results are reported for patients with TGCT with data cutoff for safety as of September 23, 2020 and efficacy as of October 5, 2020; safety population n=25, modified intent-to-treat population n=22; PR=partial response; ORR=objective response rate; SD=stable disease; PD=progressive disease; TEAE=treatment-emergent adverse events; SAE=serious adverse events; BIW=twice weekly; QD=daily; CPK=creatine phosphokinase; AST=aspartate amino transferase; ALT=alanine aminotransferase; (1) Waterfall plot excludes 3 patients yet to reach the study's first efficacy assessment timepoint; (2) Dotted lines denote 30% decrease and 20% increase in tumor size cutoffs for partial response and progressive disease, respectively; (3) Assessed by independent central review unless otherwise noted (RECIST v1.1) (4) Includes 1 complete response (confirmed) and 8 partial responses (2 confirmed and 6 to be confirmed at future follow up); (5) After 5-day 30 mg QD loading dose; (6) After 3-day 30 mg QD loading dose; (7) After 3-day 20 mg QD loading dose.

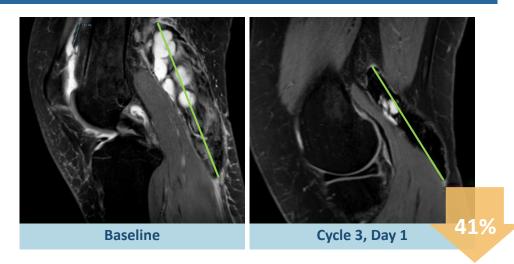
### DCC-3014: TGCT Case Studies from Phase 1

#### Case Study 1



- 57-year-old female diagnosed with TGCT (hip) in 2014
- Prior surgeries: 2 resections, 2 synovectomies, 1 total hip replacement, and 1 cryoablation (2014-2019)
- No prior systemic therapy
- Enrolled in July 2019 (cohort 5 DCC-3014 dose: 30 mg twice weekly<sup>(1)</sup>)
- Dose reduced to 20 mg twice weekly in cycle 6 due to grade 3 urticaria, re-escalated in cycle 10
- Partial response after 2 cycles (33% decrease from baseline)
- Treatment ongoing in cycle 16 (67% decrease at cycle 16, day 1)

#### Case Study 2



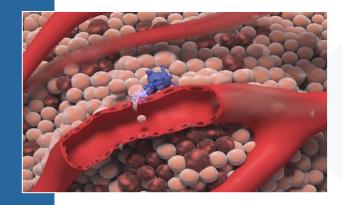
- 39-year-old female diagnosed with TGCT (knee) in 2020
- No prior systemic therapy or surgery
- Enrolled in June 2020 (cohort 8 DCC-3014 dose: 10 mg daily<sup>(2)</sup>)
- Partial response after 2 cycles (41% decrease from baseline)
- Treatment ongoing in cycle 4



# Rebastinib: A Highly Potent and Selective TIE2 Inhibitor

# Potential Benefits in Combination with Chemotherapy

- Chemotherapy leads to recruitment of pro-tumoral M2 macrophages from the bone marrow
- Rebastinib is designed to inhibit chemotherapyinduced recruitment of M2 macrophages to tumors
- M2 macrophages serve as pumps for tumor cell intravasation and metastasis
- Rebastinib is designed to block rebound angiogenesis and inhibit M2 macrophages



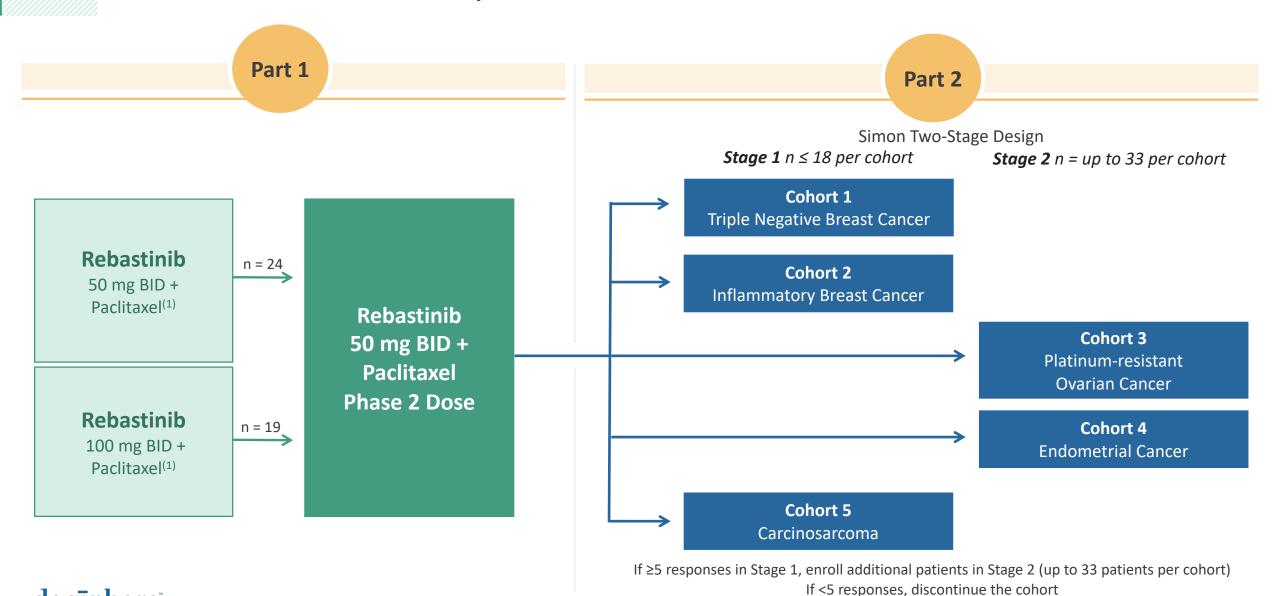
- Potent, small molecule inhibitor of TIE2
- Targets TIE2 expressing macrophages (TEMs) and endothelial cells in tumor environment
- Combination of rebastinib with chemotherapy may increase tumor killing through multiple mechanisms
  - Tumor vascularization, dissemination, metastasis, immunotolerance

#### **Development status**

- Two ongoing studies in combination with paclitaxel or carboplatin
- Encouraging preliminary results from Part 2 of the Phase 1b/2 study in combination with paclitaxel in endometrial and platinum-resistant ovarian cancer
- Selected Phase 2 dose and activated Part 2 of the Phase 1b/2 study in combination with carboplatin in January 2020; data from Part 1 of study presented at the ESMO 2020

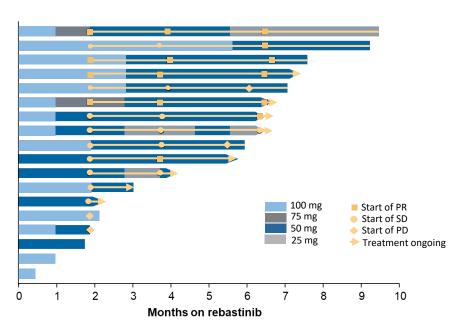


# Rebastinib: Phase 1b/2 Study in Combination with Paclitaxel

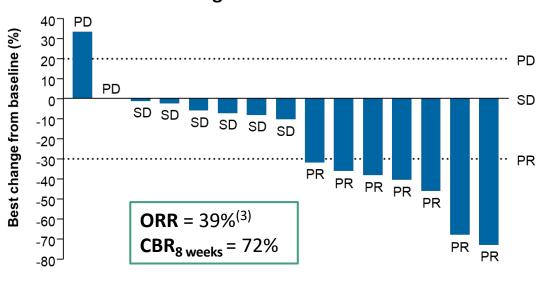


# **Rebastinib:** Part 2 (Stage 1) of Phase 1b/2 Study in Combination with Paclitaxel Shows Encouraging Anti-tumor Activity in **Endometrial Cancer**

#### **Time on Treatment**



#### **Best Percent Change from Baseline in Tumor Size**(1,2)

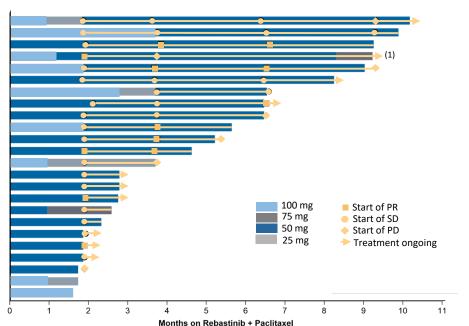


- All patients received ≥1 prior line of the combination of paclitaxel/carboplatin and 20 (95%) received ≥2 prior anti-cancer regimens
- Majority of the common (≥15%) TEAEs regardless of causality were grade ≤2
- SAEs at least possibly related to rebastinib occurred only at 100 mg BID and resolved after dose reductions
- Nine patients experienced SAEs at least possibly related to rebastinib including muscular weakness (n=2), acute myocardial infarction (n=1), atrial flutter (n=1), dehydration (n=1), head discomfort (n=1), nausea (n=1), peripheral edema (n=1), and pneumonia (n=1)

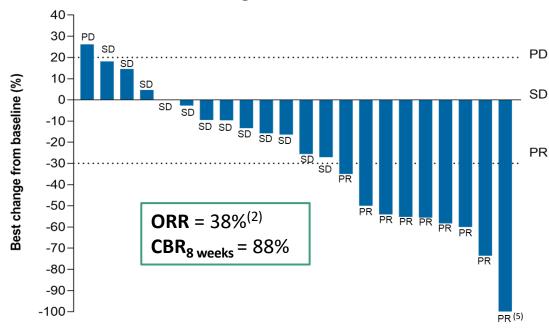


# **Rebastinib:** Part 2 (Stage 1) of Phase 1b/2 Study in Combination with Paclitaxel Shows Encouraging Anti-tumor Activity in **Platinum-resistant Ovarian Cancer**





#### Best Percent Change from Baseline in Tumor Size (3,4)



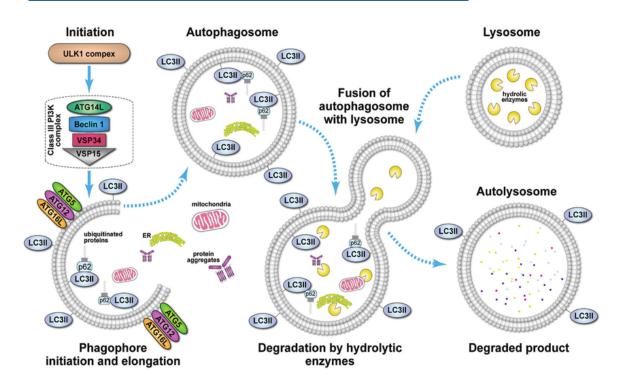
- All patients received ≥1 prior line of the combination of paclitaxel/carboplatin and 23 (79%) received ≥4 prior anti-cancer regimens
- TEAEs occurring in ≥25% of patients regardless of causality were fatigue (41%), dry mouth (38%), nausea (34%), diarrhea (31%), stomatitis (31%), abdominal pain (28%), and peripheral sensory neuropathy (28%)
- 11 patients (38%) had a TEAE of Grade ≥3
- Two patients experienced SAEs at least possibly related to rebastinib: muscular weakness/fatigue (starting dose rebastinib 100 mg BID and resolved with drug interruption) and urinary tract infection (starting dose rebastinib 50 mg BID)
- A CA-125 response occurred in 10/17 patients (59%)



Notes: Data presented at ESMO Congress 2020; results are reported for patients in the platinum-resistant ovarian cancer expansion cohort who initiated treatment as of June 3, 2020, with follow-up data through July 31, 2020; safety population n=29, modified intent-to-treat population n=24; PR=partial response; ORR=objective response rate SD=stable disease; PD=progressive disease; CBR=clinical benefit rate; TEAE=treatment-emergent adverse event; SAE=serious adverse events; (1) Patient continued treatment beyond PD for clinical benefit; (2) Includes 9 partial responses (3 confirmed, 3 to be confirmed at future follow-up, and 3 unable to be confirmed) and 12 stable disease; (3) Waterfall plot excludes 2 patients with early discontinuation for whom no radiological assessments were available; (4) Dotted lines denote 30% decrease and 20% increase in tumor size cutoffs for partial response and progressive disease, respectively; (5) Target lesions were classified as a complete response; non-target lesion was non-CR/non-PD.

# DCC-3116 is a Potent & Selective ULK Inhibitor Designed to Inhibit Autophagy

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



Adapted from: Ndoye A and Weeraratna AT. Autophagy- An emerging target for melanoma therapy [version 1]. F1000Research 2016, 5:1888.



# First-in-class opportunity for new therapeutic in RAS mutant cancers

- RAS mutant cancers have high basal levels of autophagy
- DCC-3116 observed preclinically to durably and potently inhibit autophagy in RAS mutant cancer cell lines through the inhibition of ULK kinase
- Combination of DCC-3116 and MAPK pathway inhibitors have been observed to synergize to block RAS mutant cancers in vivo



#### Highly potent and selective ( $IC_{50}$ at 1 mM ATP)

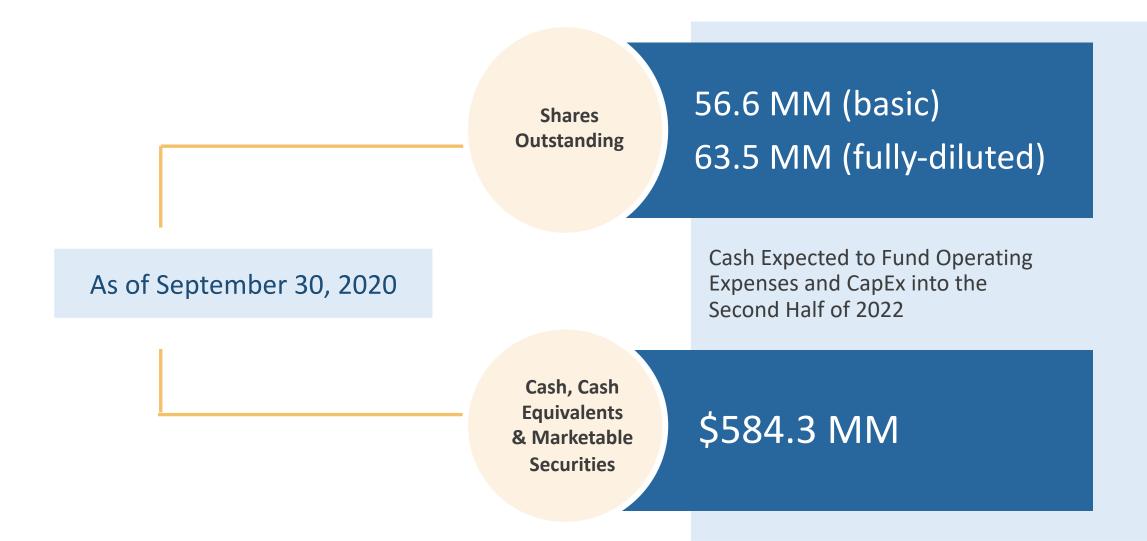
- ULK1 4.7 nM and ULK2 35 nM
- No off-target kinases within 30-fold of ULK1/5 kinases within 100-fold of ULK1

Designed to avoid CNS exposure

IND submission expected in 4Q20



# Financial Highlights





# Significant Expected 2020 Milestones Across the Pipeline





- Present Phase 1 study expansion data (3Q20)
- Submit EU Marketing Authorisation Application to EMA (3Q20)
- ✓ Complete enrollment in the INTRIGUE Phase 3 study in 2<sup>nd</sup> line GIST (4Q20)

DCC-3014

- Select Phase 2 dose for TGCT and initiate the expansion portion of study (4Q20)
- Update Phase 1 data in TGCT patients (4Q20)

Rebastinib

- ✓ Select Phase 2 dose and activate Part 2 of Phase 1b/2 study in combination with carboplatin (1Q20)
- ✓ Present Phase 1b/2 data in combination with paclitaxel (2Q20 and 3Q20)
- Present Phase 1b/2 data in combination with carboplatin (3Q20)

**DCC-3116** 

Submit IND application to FDA (4Q20)



# **THANK YOU**



