G1 Corporate Overview

Needham Healthcare Conference

April 9, 2019

www.g1therapeutics.com

NASDAQ: GTHX

Forward-looking statements

This presentation and the accompanying oral commentary contain “forward-looking” statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "may," "will," "expect," "plan," "anticipate," "estimate," "intend" and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements. Forward-looking statements in this presentation include, but are not limited to the following: the therapeutic potential of trilaciclib, lerociclib and G1T48; initial success in our ongoing clinical trials may not be indicative of results obtained when these trials are completed or in later stage trials; our development of trilaciclib to reduce chemotherapy-induced myelosuppression is novel, unproven and rapidly evolving and may never lead to a marketable product; our product candidates may cause undesirable side effects that could delay or prevent their marketing approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any; we may not have the ability to recruit, enroll and complete clinical trials for, obtain approvals for, or commercialize any of our product candidates; we face substantial competition, which may result in others discovering, developing or commercializing competing products before or more successfully than we do; we may incur additional costs or experience delays in completing clinical trials; future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may obtain; and market conditions. Each of these forward-looking statements involves risks and uncertainties and are based on our expectations and assumptions as of the date of this presentation. Factors that may cause our actual results to differ from those expressed or implied in the forward-looking statements in this presentation are further discussed in our filings with the U.S. Securities and Exchange Commission (SEC), including the "Risk Factors" section in our annual report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC. Such factors may be amended or updated from time to time in our subsequent periodic and other filings with the SEC, which are accessible on the SEC’s website at www.sec.gov. We assume no obligation to update any forward-looking statement after the date of this presentation to reflect any change in expectations or future developments, even as new information becomes available.

Vision: improve the lives of those affected by cancer

1

Three wholly-owned investigational therapies with potential to improve patient care and generate significant value for shareholders

2

Relentless focus on patients, operational efficiency and financial discipline

3

Explore value-creating partnerships as we move toward commercialization of our product candidates

Robust clinical-stage pipeline

Three wholly-owned product candidates addressing distinct multi-billion dollar markets

Trilaciclib

First-in-class myelopreservation therapy

- ✓ Positive data in multiple randomized Ph 2 trials
- ✓ Reduced myelosuppression, improved safety
- ✓ Differentiated from growth factors, transfusions
- ✓ Regulatory discussions ongoing; report in 2Q19

Lerociclib

Differentiated CDK4/6 inhibitor

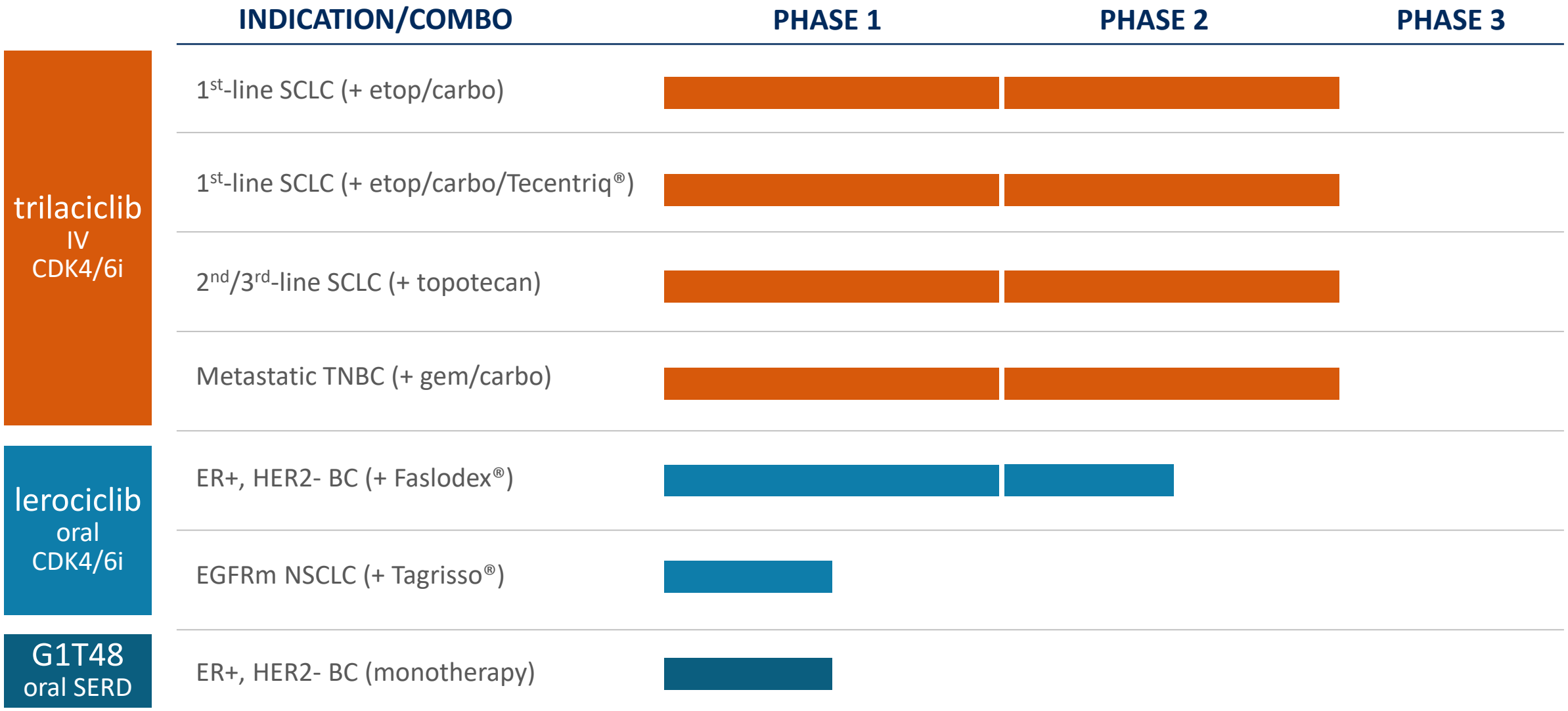
- ✓ POC in Ph1b ER+ BC trial
- ✓ Less dose-limiting neutropenia, potential for less CBC monitoring
- ✓ Favorable tolerability profile
- ✓ Combine with targeted Rx across multiple indications

G1T48

Potential best-in-class oral SERD

- ✓ More potent than Faslodex®
- ✓ Differentiated chemistry, favorable tolerability
- ✓ 4Q19: POC data in ER+ BC
- ✓ Significant opportunity across multiple lines of therapy

Clinical milestones across all programs in 2019



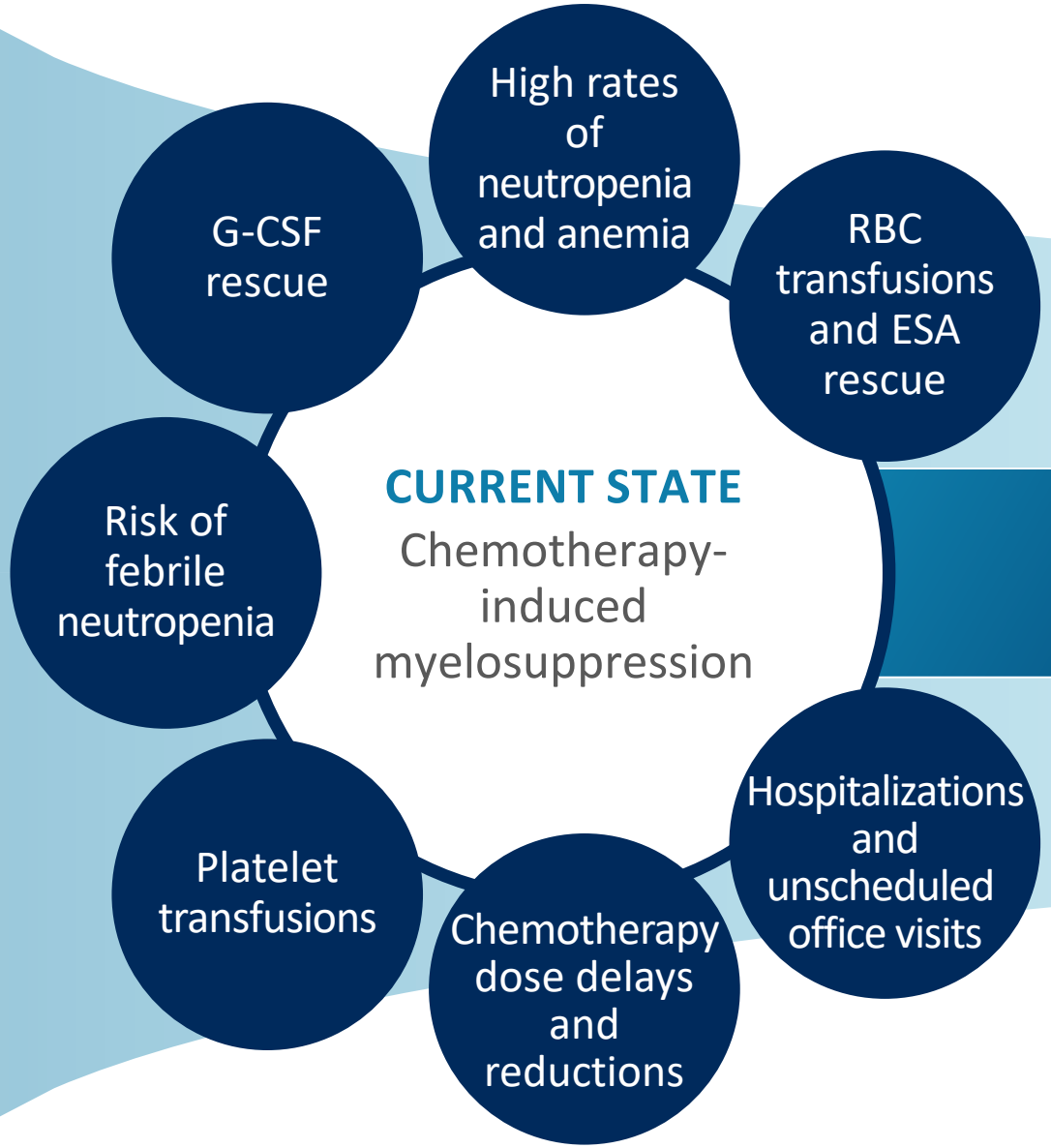
TRILACICLIB DEVELOPMENT UPDATE

Hematopoietic stem and progenitor cells (HSPCs)

Trilaciclib: first-in-class multi-lineage myelopreservation therapy

BRAND VISION:

Transform patient outcomes across multiple tumors by establishing trilaciclib-based proactive multi-lineage myelopreservation as an essential part of chemo and chemo/IO treatment regimens



FUTURE STATE

Patients benefit from proactive multi-lineage myelopreservation with trilaciclib

Trilaciclib development: key takeaways

1

Substantial unmet need

- ~1 million patients in U.S. receive chemotherapy each year
- Chemo to remain a cornerstone of cancer treatment
- Myelosuppression still prevalent

2

Phase 2 program showed improved safety and multi-lineage benefits

- Less neutropenia *and* anemia
- Reduced G-CSF usage *and* transfusions
- PFS benefit in mTNBC

3

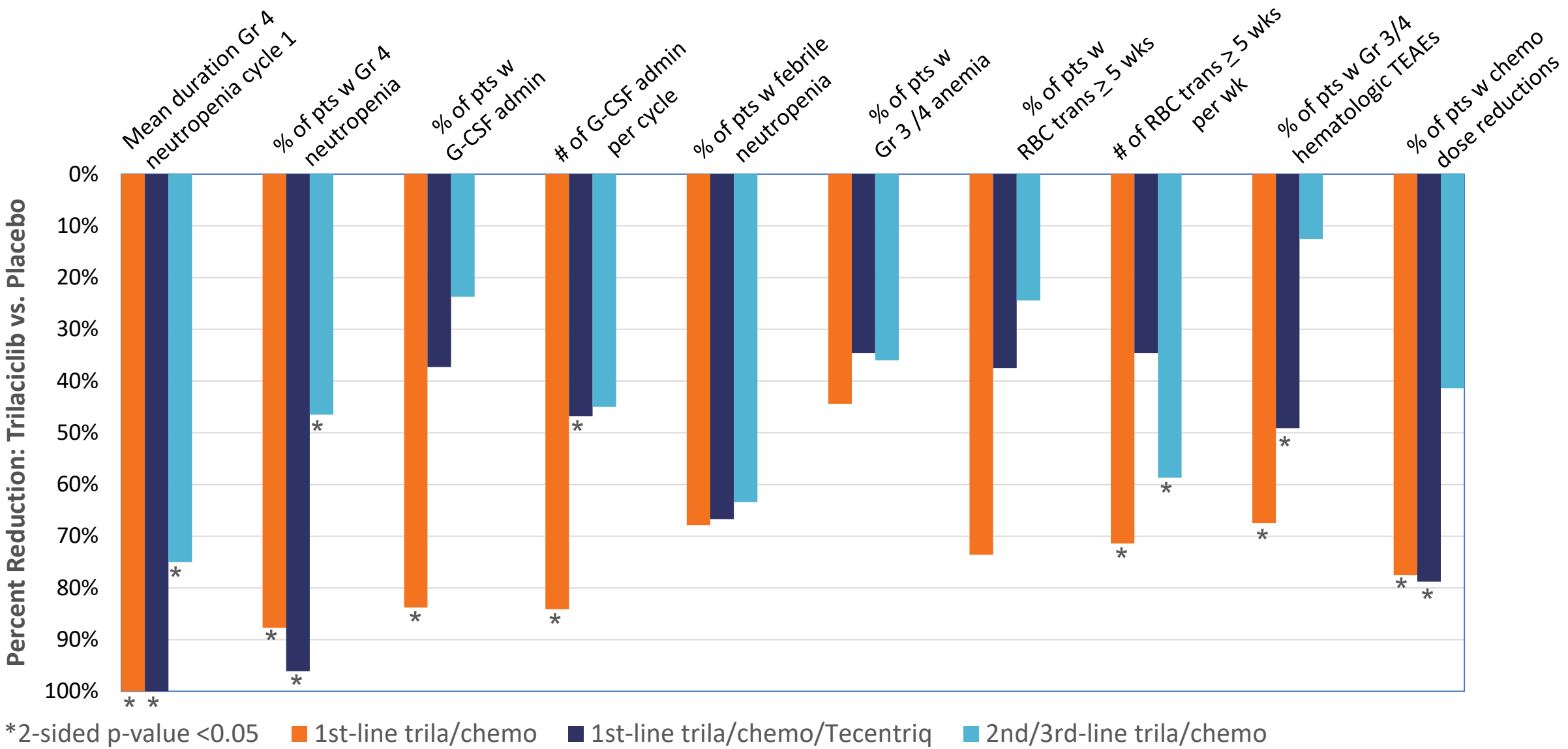
Next steps in trilaciclib development

- Regulatory update 2Q19
- Exploring partnerships to maximize opportunity for patients globally

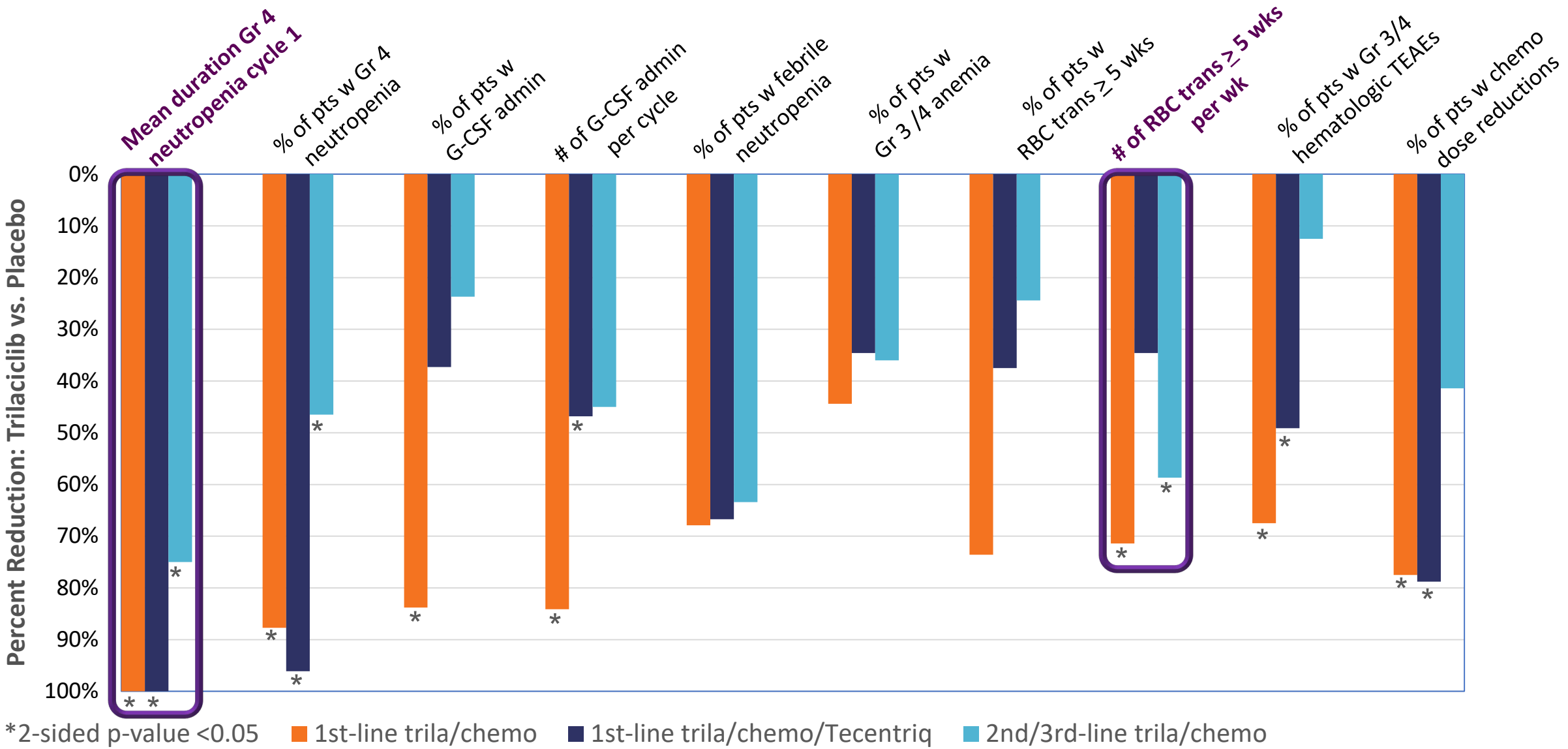
Positive multi-lineage myelopreservation results from three randomized SCLC Phase 2 trials in 2018

TRIAL/TUMOR TYPE	REGIMEN	TRIAL DESIGN
1st-line Small Cell Lung Cancer (G1T28-02)	+ etoposide/ carboplatin (EP)	• 77 patients, randomized, placebo-controlled, double-blind
1st-line Small Cell Lung Cancer (G1T28-05)	+ EP/Tecentriq	• 107 patients, randomized, placebo-controlled, double-blind
2nd/3rd-line Small Cell Lung Cancer (G1T28-03)	+ topotecan	• 92 patients, randomized, placebo-controlled, double-blind

Myelopreservation benefits consistently demonstrated in three randomized, placebo-controlled SCLC studies



Clinically relevant endpoints with regulatory precedence



Trilaciclib does not impair efficacy of chemotherapy

	trila/chemo 1st-line			trila/chemo/Tecentriq 1st-line			trila/chemo 2nd/3rd-line		
	placebo N = 37	trila N = 38	HR* or historical RR	placebo N = 53	trila N = 54	HR* or historical RR	placebo N = 29	trila N = 32	HR* or historical RR
Median OS (months)	10.6	10.9	**HR=0.87**	immature			immature		
Median PFS (months)	5.0	6.1	**HR=0.71**	5.4	5.9	**HR=0.78**	4.2	4.2	**HR=0.85**
Overall Response Rate	56.8%	66.7%	52%	63.5%	56.0%	60.2 - 64.4%	23.1%	16.7%	10.1 - 16.9%
Clinical Benefit Rate	86.5%	91.7%	75%	90.4%	96.0%	81.1 - 85.7%	61.5%	60.0%	61.5 - 73.4%

- Lack of efficacy impairment measured by HR ("do no harm")
- Trilaciclib achieves comparable OS and PFS
- Response rates (RR) within historical ranges**

*HR=hazard ratio

** Socinski et al. *J Clin Oncol* 2009; 27: 4787-92; Horn et al. *N Engl J Med* 2018; 379:2220-2229; von Pawel et al. *J Clin Oncol* 2014; 32:4012-4019; Evans et al. *J Thorac Oncol* 2015; 10: 1221–1228

Data cut: December 21, 2018

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Data cut: December 21, 2018

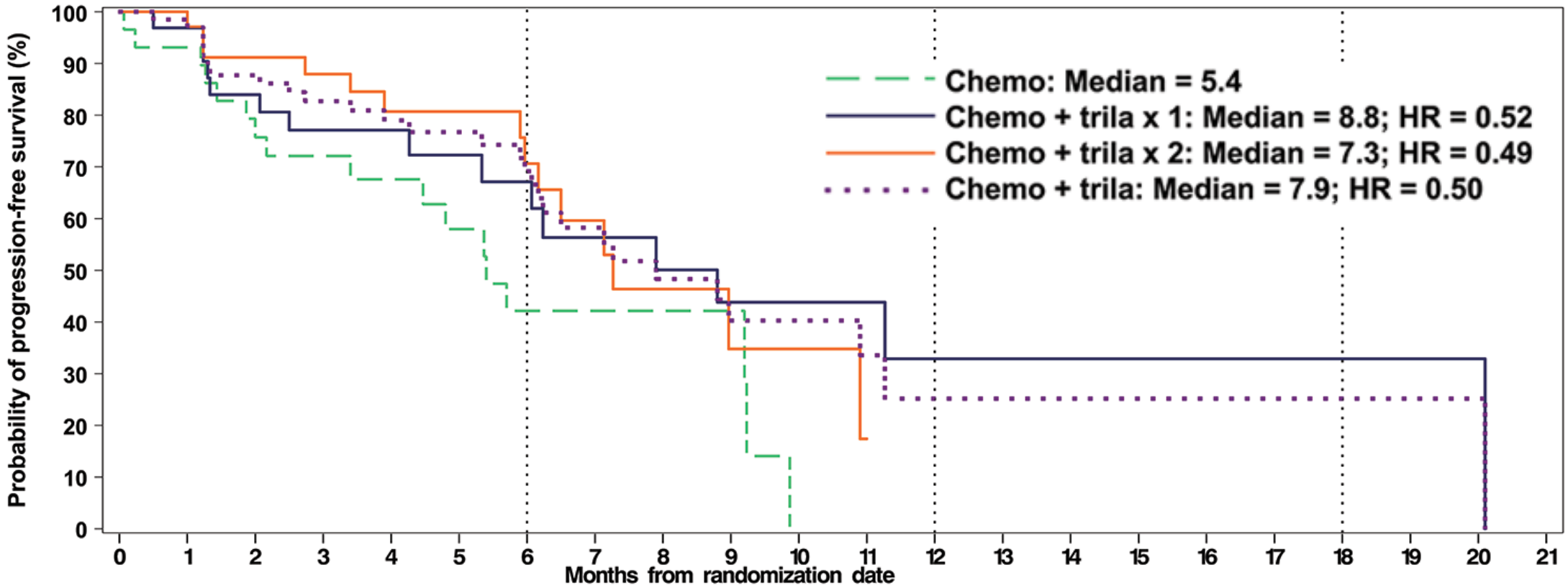
Preliminary results in randomized mTNBC Phase 2 trial demonstrated trilaciclib improved PFS

TRIAL/TUMOR TYPE	REGIMEN	TRIAL DESIGN
Metastatic Triple-Negative Breast Cancer (G1T28-04)	+ gemcitabine/ carboplatin	102 patients, randomized, open-label

- Patients on trilaciclib received more chemotherapy cycles than those in the control arm

- Safety profile consistent with previously reported trials; no trilaciclib-related serious adverse events reported

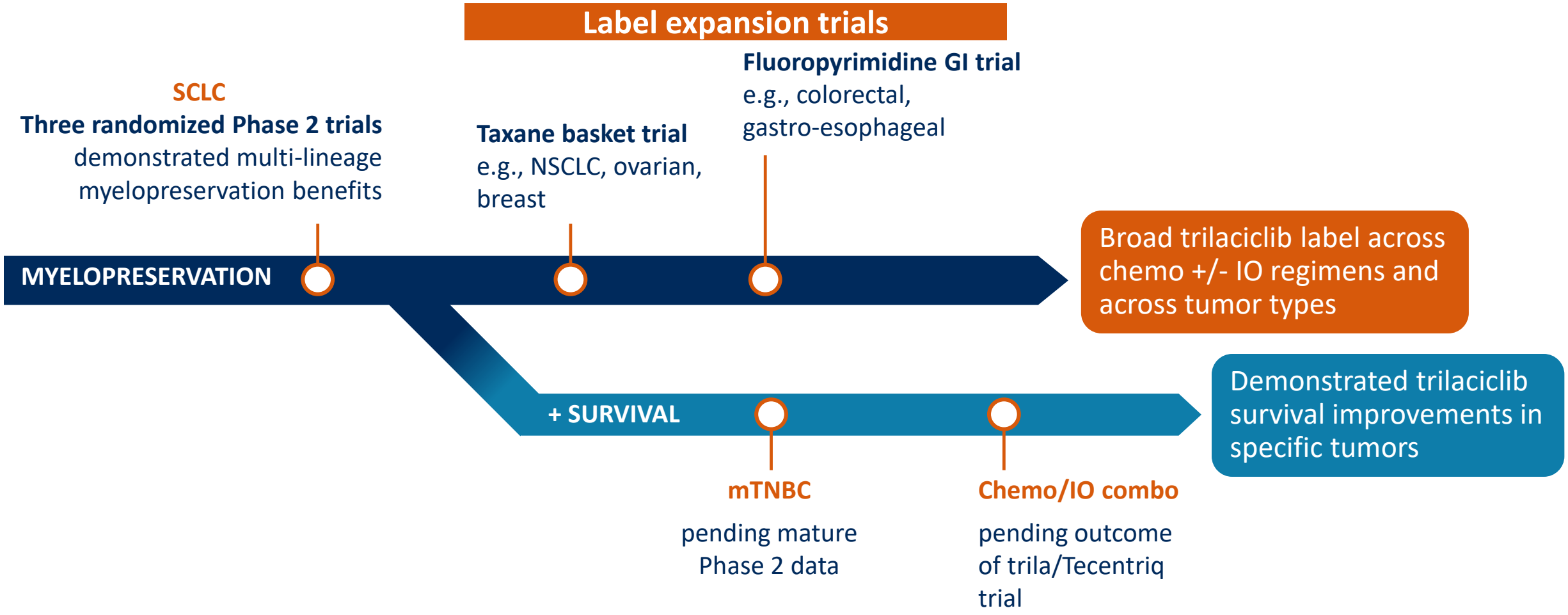
Preliminary results demonstrated median PFS is longer when trilaciclib is added to chemotherapy



data from SABCS 2018

Development strategy: two pathways to establish trilaciclib as an essential part of chemo and chemo/IO treatment

Establish trilaciclib as first-in-class myelopreservation therapy



Trilaciclib commercial strategy: key takeaways

1

There is still substantial unmet need for patients experiencing myelosuppression, despite the availability of rescue interventions like G-CSF, ESAs and transfusions

- No significant innovations for chemotherapy-induced myelosuppression
- Chemotherapy will remain the backbone of treatment

2

Multi-lineage myelopreservation in SCLC represents an advance for patients and a significant opportunity:
$500M - $1B WW at peak

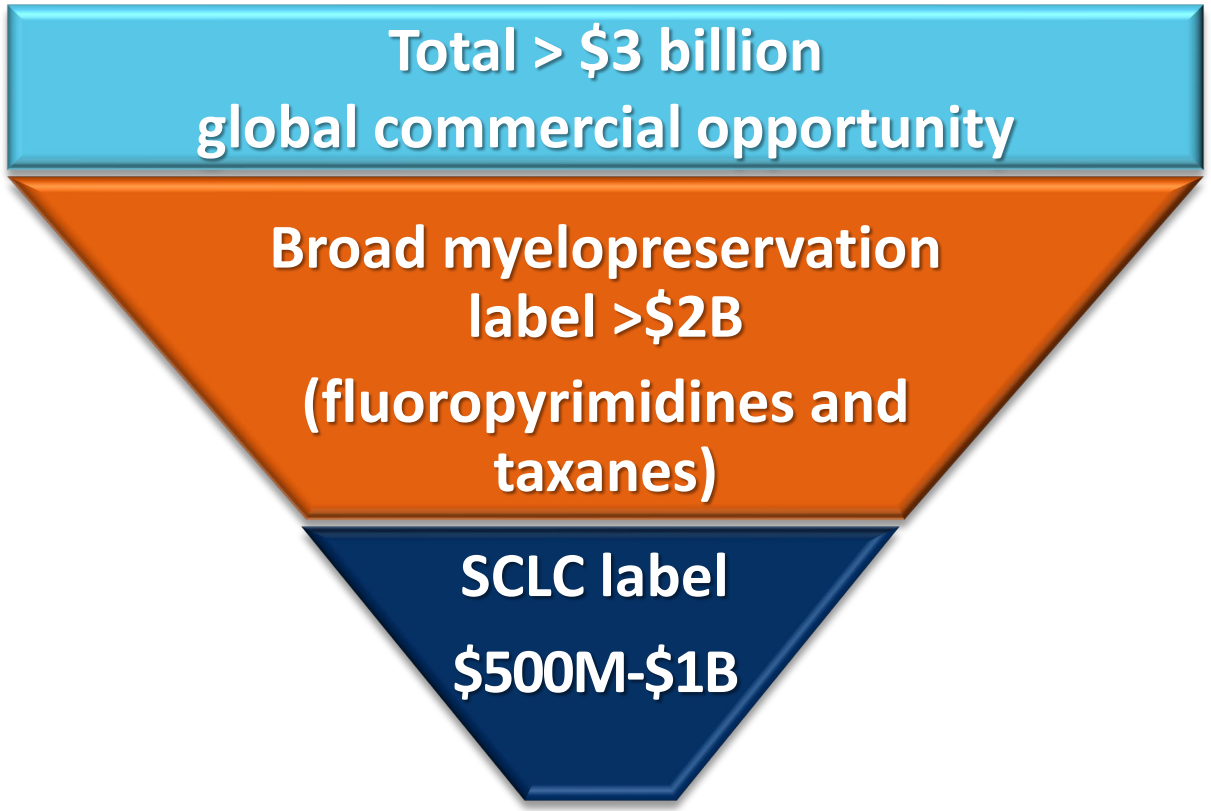
- Physicians see proactive myelopreservation as a better approach and anticipate significant use
- Payers value the patient benefits and are willing to pay without significant restrictions

3

Expanding the label across tumors to a broad myelopreservation indication may add >$2B to peak sales

- Myelopreservation launch in SCLC meets a substantial unmet need and serves as proof of concept in other tumor types
- Efficacy enhancement, OS or PFS data would provide additional patient benefit and revenue upside, but is not required to generate use in a high % of patients

Trilaciclib market research* highlights a substantial global commercial opportunity



- ***Patients*** are better served with proactive myelopreservation
- ***Physicians*** anticipate significant use of trilaciclib based on its myelopreservation benefits alone
- ***Payers*** see the multi-lineage benefits of trilaciclib as unique

* Using TPP defined by data from SCLC trials, interviewed:
100+ physicians and **15+ payors** across **5 countries**

LEROCICLIB DEVELOPMENT UPDATE

Tumor cell proliferation

Lerociclib profile differentiated in CDK4/6 landscape

- Differentiated PK and tolerability profile
- Continuous dosing (no holiday) with fewer dose-limiting toxicities
- Highly potent and selective with demonstrated anti-tumor POC

	DOSE-LIMITING NEUTROPENIA	MONITORING REQUIREMENT	DOSING HOLIDAY	QT PROLONGATION	DILI	GRADE 3/4 DIARRHEA	VTE
lerociclib	–	Potential for less monitoring	–	–	–	–	–
Ibrance®	X	X	X	–	–	–	–
Kisqali®	X	X	X	X	X	–	–
Verzenio®	X	X	–	–	X	X	X

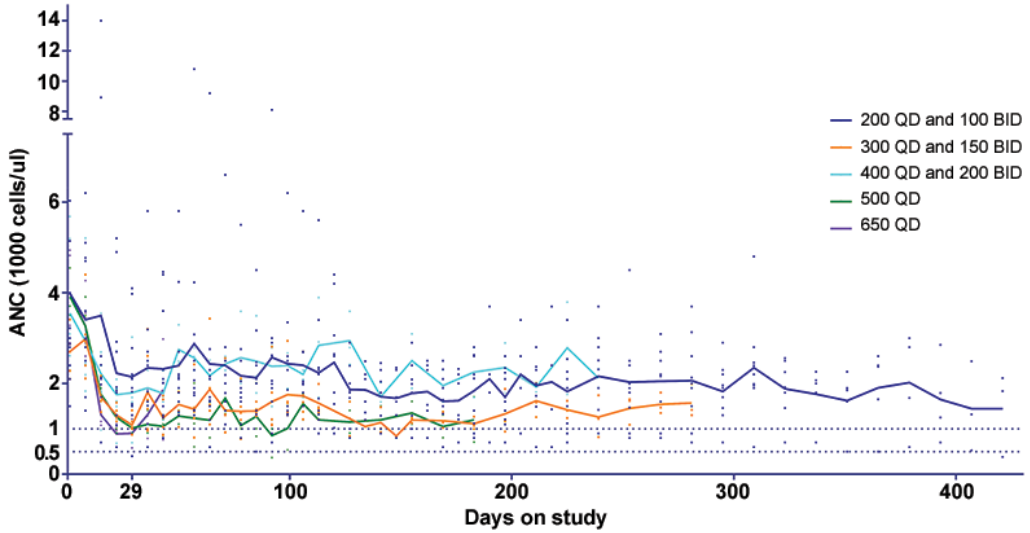
lerociclib data from ASCO 2018

ER+, HER2- breast cancer Faslodex combination Phase 1b/2a trial

PRIMARY ENDPOINTS	• Assess safety, dose-limiting toxicities, and identify recommended Phase 2 dose/schedule
SECONDARY ENDPOINTS	• PK, PD • ORR, PFS and OS
DESIGN	• Open-label, single-arm; continuous dosing of lerociclib + Faslodex in ER+, HER2- breast cancer • Phase 1b: dose escalation (QD and BID schedules), 3+3 design • Phase 2a: dose expansion at RP2D/schedule
MILESTONE TIMING	• Phase 1b dose escalation completed; preliminary data presented at ASCO 2018 • Anticipate reporting additional Ph 1b data and RP2D in 4Q19

Continuously dosed lerociclib: promising early data

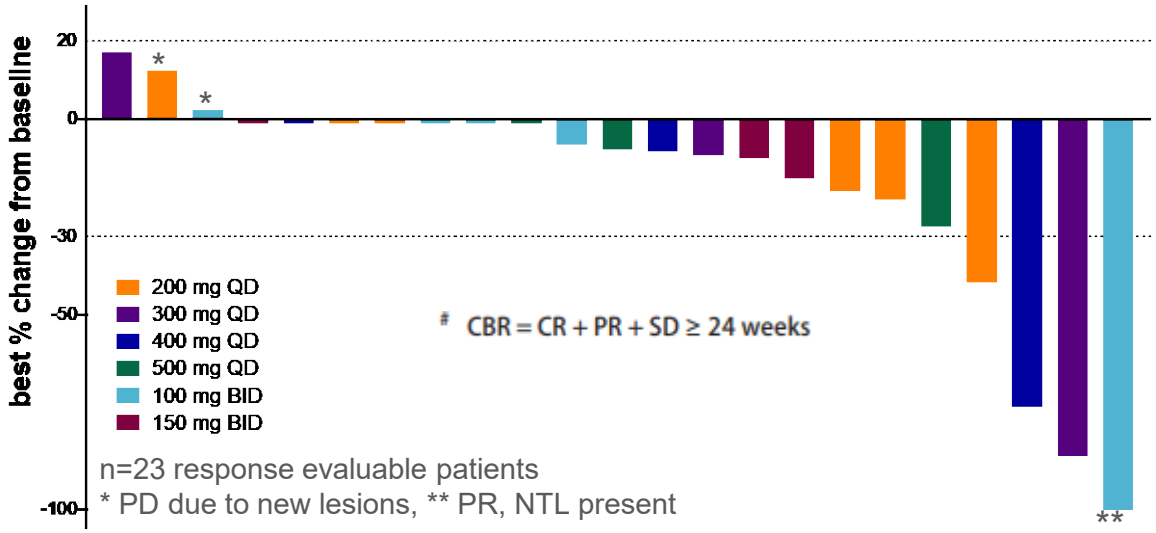
Continuous dosing with less Gr 4 neutropenia



Dose	N	Day 29 mean % change
200mg QD	6	-48%
300mg QD	3	-66%
400mg QD	3	-50%
500mg QD	4	-74%
650mg QD	6	-76%

ANC decreases ~50-60% for approved CDK4/6 inhibitors

Anti-tumor activity at all dose levels



n=23 response evaluable patients
* PD due to new lesions, ** PR, NTL present

Best Response lerociclib + fulvestrant (n=23)	
PR	4/23 (17%)
SD	16/23 (70%)
PD	3/23 (13%)
SD ≥ 24 weeks	11/23 (48%)
CBR 24	15/23 (65%)

CBR 24=CR+PR+SD≥24 weeks

data from ASCO 2018; efficacy data updated to account for one patient with non-measurable disease at baseline

Strategic opportunities for lerociclib: combination regimens in multiple indications

CANCER	INDICATION	lerociclib +	STATUS
BREAST	**ER+/HER2-**	**Faslodex (fulvestrant)**	**Phase 2a enrolling; Phase 1b data update 4Q19**
	ER+/HER2-	**G1T48**	**Phase 1b/2 trial planned for 2020**
LUNG	**EGFRm**	**Tagrisso**	**Phase 1b data in 3Q19**
PROSTATE	CRPC	AR-antagonist	Exploring
LYMPHOMA	Mantle Cell	BTKi	Exploring
BLADDER	Urothelial	FGFRi	Exploring
GI	Pancreatic	MAPKi	Exploring

EGFRm NSCLC Tagrisso combination
Phase 1b dose-finding/Phase 2 randomized trial

PRIMARY ENDPOINTS	• Assess safety, dose-limiting toxicities, and identify recommended Phase 2 dose • PFS
SECONDARY ENDPOINTS	• PK, PD • ORR and OS
DESIGN	• EGFRm NSCLC • Phase 1b: single-arm dose-finding, lerociclib + Tagrisso in 1st/2nd-line setting • Phase 2: lerociclib + Tagrisso, or Tagrisso; randomized (1:1)
MILESTONE TIMING	• Phase 1b enrollment ongoing • Preliminary Phase 1b data expected in 3Q19

Non-exclusive clinical trial collaboration with AstraZeneca

G1T48 (ORAL SERD) UPDATE

Tumor cell dissolution

G1T48: potential best-in-class oral SERD

1

More potent than Faslodex

- Differentiated chemistry, favorable tolerability

2

POC data from Ph 1 trial expected 4Q19

- Dose escalation ongoing in ER+ BC patients

3

Rapid development plan in place

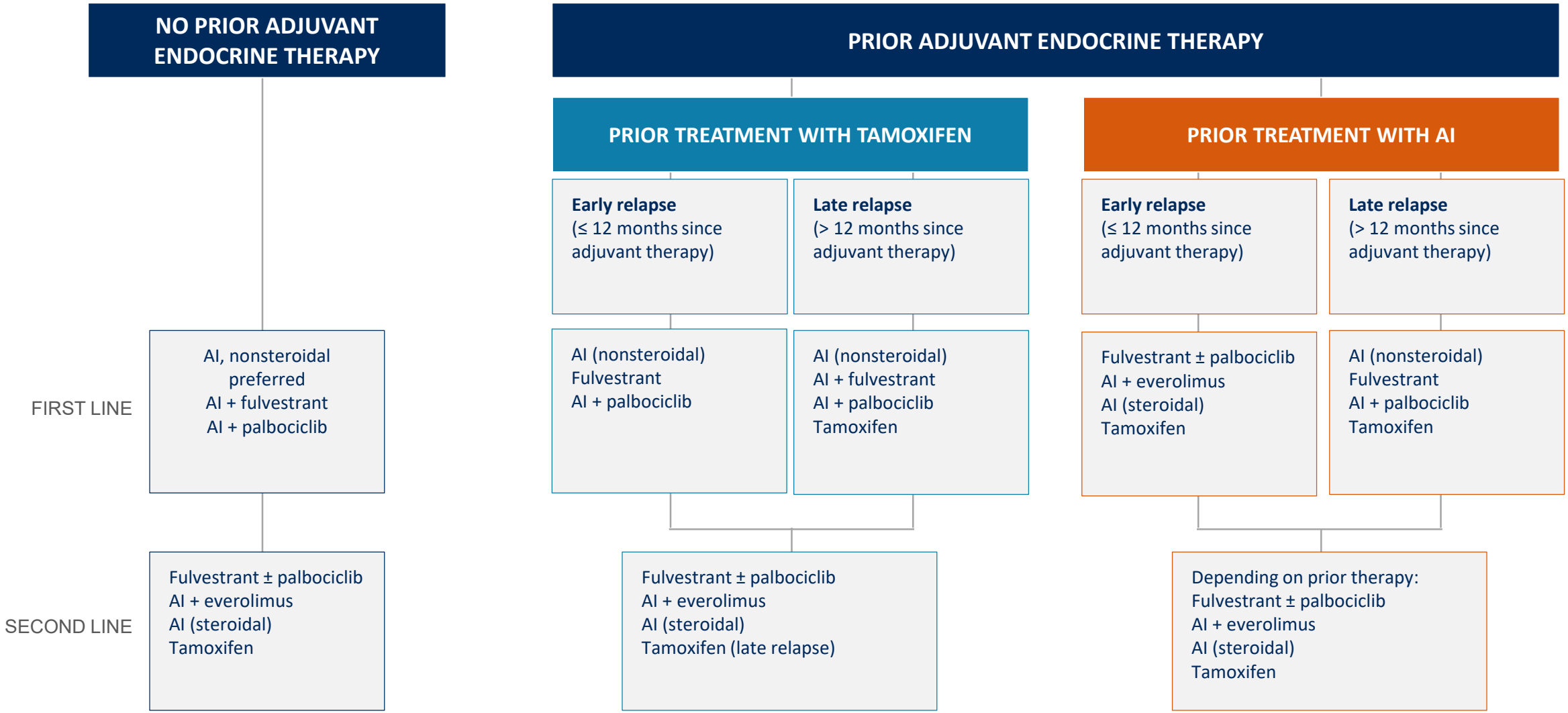
- All required non-clinical and CMC studies underway or planned
- Expect initiation of randomized Ph 2 trials in 1H20

4

Multi-billion dollar market opportunity

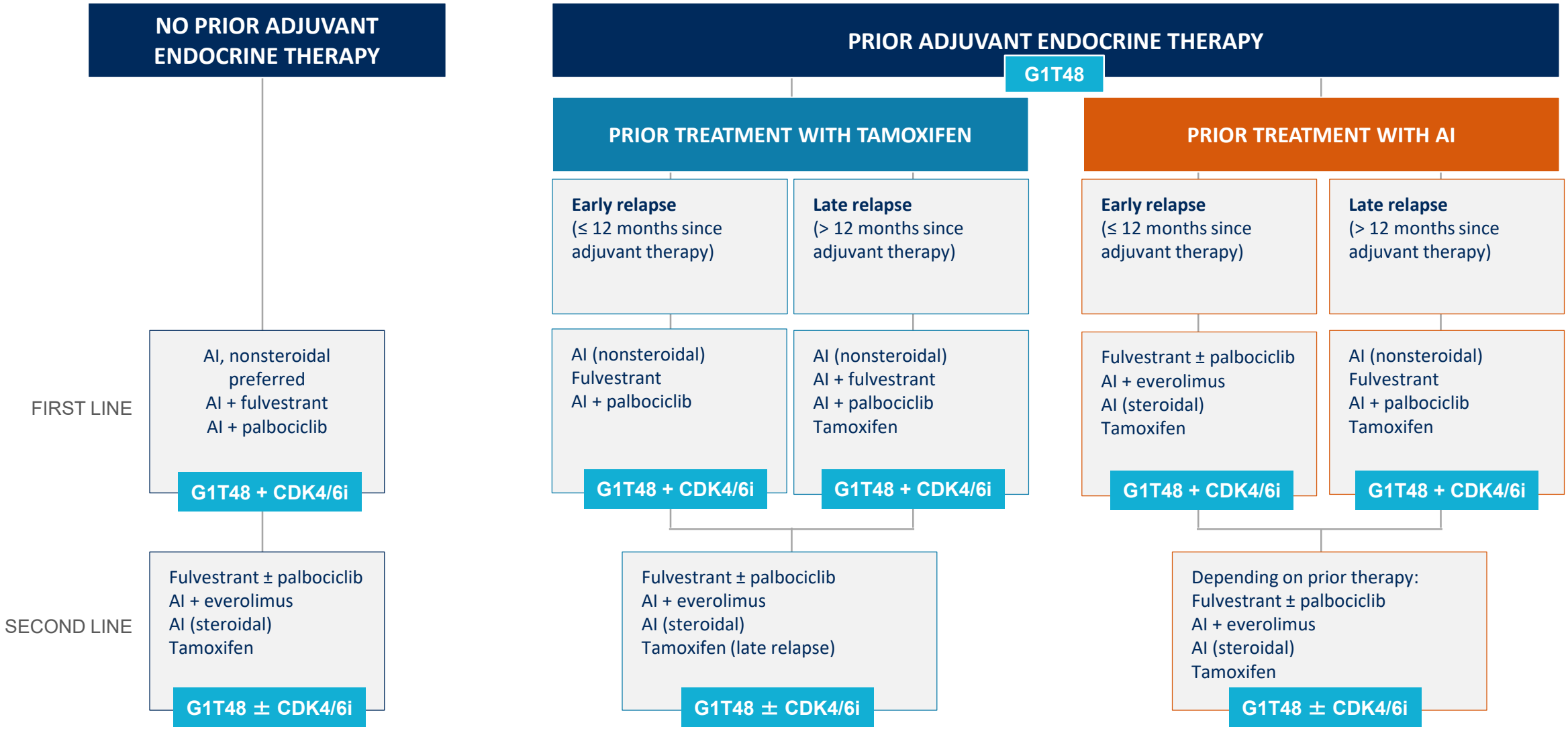
- Monotherapy and in combination with CDK4/6i
- Potential to benefit patients across multiple lines of therapy

ASCO guidelines for HR+ mBC: Oral SERD creates opportunity across all lines of therapy



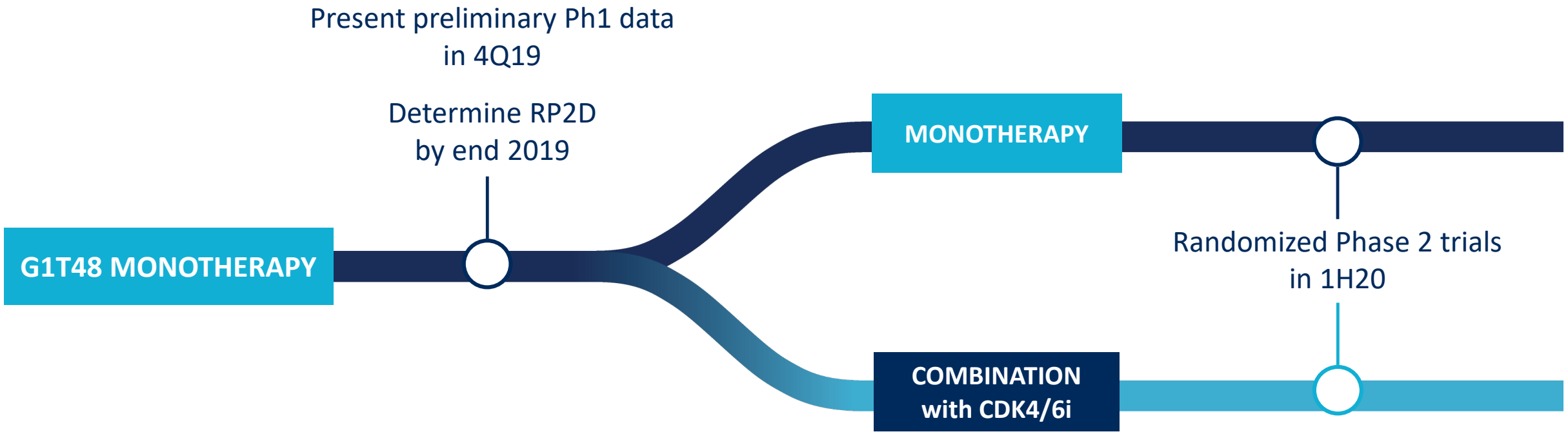
Adapted from Rugo et al JCO 2016

ASCO guidelines for HR+ mBC: Oral SERD creates opportunity across all lines of therapy



Adapted from Rugo et al JCO 2016

Development pathways leading to a standard-of-care label



- ✓ *Potential to benefit ER+ BC patients across multiple lines of therapy*
- ✓ *Multi-billion dollar market opportunity*

ER+, HER2- breast cancer
Phase 1/2a trial

PRIMARY ENDPOINTS	• Assess safety, dose-limiting toxicities, and identify recommended Phase 2 dose (RP2D)
SECONDARY ENDPOINTS	• PK, PD • ORR and OS • Food effect on bioavailability
DESIGN	• Open-label, ER+, HER2- breast cancer, enrolling up to 104 patients • Phase 1: dose-finding, G1T48 monotherapy in 2nd/3rd-line setting • Phase 2a: dose expansion at RP2D
MILESTONE TIMING	• Phase 1 enrollment ongoing • Anticipate POC Ph 1 data and RP2D in 4Q19

Lerociclib and G1T48: key takeaways

1

Lerociclib: differentiated oral CDK4/6i

- Less dose-limiting neutropenia
- Favorable tolerability profile = “partner of choice” in combo regimens
- Additional data and RP2D anticipated in 4Q19

2

G1T48: potential best-in-class oral SERD

- Oral delivery provides opportunity to move SERD into earlier lines of therapy
- Monotherapy and combination regimens
- POC data and RP2D dose anticipated in 4Q19

3

G1T48 + CDK4/6i: all-oral BC regimen

- All-oral regimen a better option for patients
- Multi-billion dollar market opportunity across multiple lines of therapy

Key anticipated milestones

	INDICATION/COMBO	2Q19	3Q19	4Q19
trilaciclib IV - CDK4/6i	1st-line SCLC (+ etop/carbo)	Present additional Phase 2 data	Provide regulatory update	
	1st-line SCLC (+ etop/carbo/Tecentriq)		Present additional Phase 2 data (pending mature OS)	
	2nd/3rd-line SCLC (+ topotecan)			
	Metastatic TNBC (+ gem/carbo)			Present additional Phase 2 data (pending mature PFS)
lerociclib Oral - CDK4/6i	ER+, HER2- BC (+ Faslodex)			Report additional Phase 1b data
	EGFRm NSCLC (+ Tagrisso)		Report preliminary Phase 1b data	
G1T48 Oral - SERD	ER+, HER2- BC (monotherapy)			Report preliminary Phase 1 data

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