COMPASS THERAPEUTICS

Corporate Presentation

April 2024

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Corporate Highlights

We are a clinical stage biotech company developing antibody therapeutics for cancer

LEAD ASSETS

- CTX-009: DLL4 x VEGF-A bispecific antibody
- CTX-471: CD137 agonist antibody
- CTX-8371: PD-1 x PD-L1 bispecific antibody

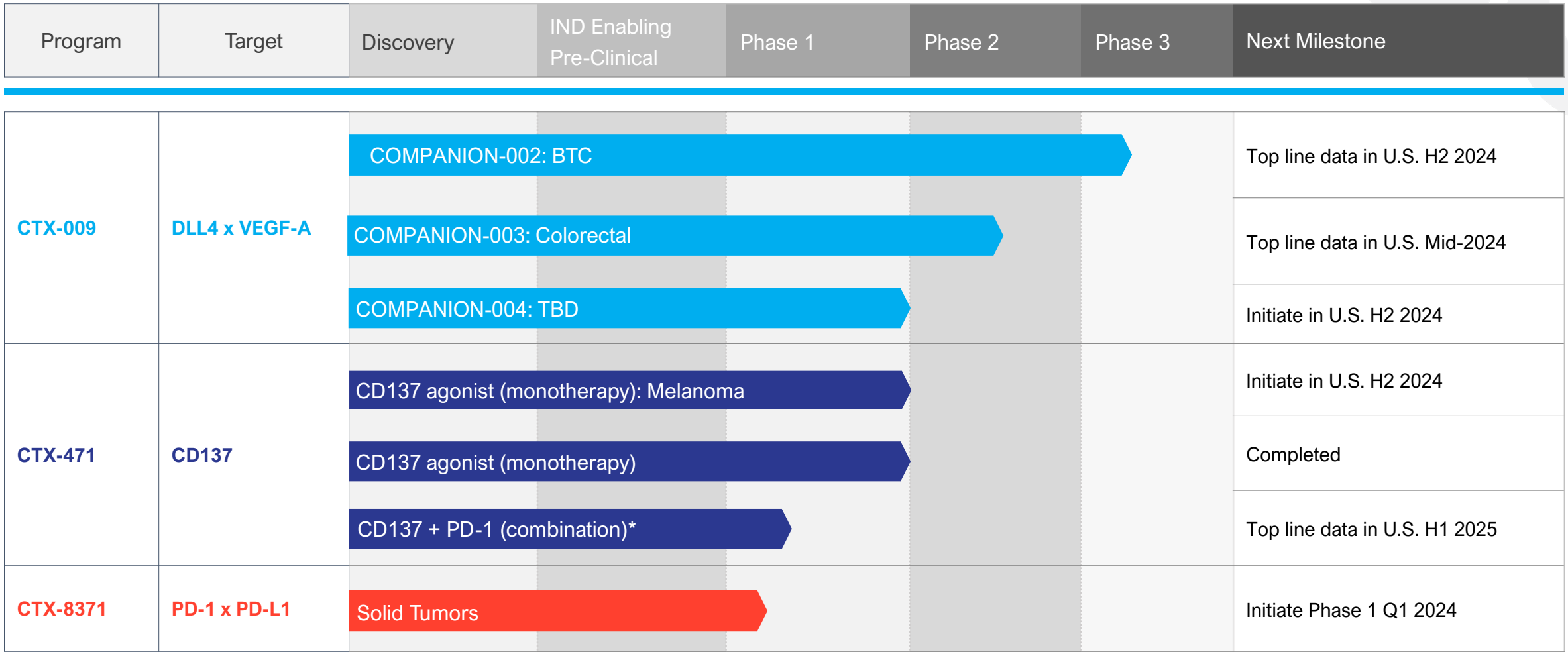
CORE SCIENCE

- StitchMabs™ platform designed to identify synergistic bispecific antibodies
- Common Light Chain technology enables multi-specificity and manufacturability
- Focus on Translational research

RESOURCES

- Cash runway into mid-2026 (YE 2023: $152M)
- Funded by leading life-science investors
- ~32 FTEs based in Boston, MA with experienced leadership team

Focused Pipeline with Multiple Value Inflection Points



*Clinical collaboration with Merck & Co. Inc., Rahway NJ USA in combination with anti-PD-1 therapy KEYTRUDA®

Leadership Team Experienced in Drug Discovery and Development

Jon Anderman
VP, Head of Legal

Vered Bisker-Leib, PhD, MBA
CEO

Ian Chia, PhD
VP, Business Development

Bing Gong, PhD
VP, Protein Sciences

Karin Herrera
VP, Clinical Operations

James Kranz, PhD
VP, CMC

Neil Lerner, CPA, MIM
VP, Finance

Minori Rosales, MD, PhD
SVP, Head of Clinical Development

Kris Sachsenmeier, PhD
VP, Translational Science

Thomas J. Schuetz, MD, PhD
President of R&D and Vice Chairman

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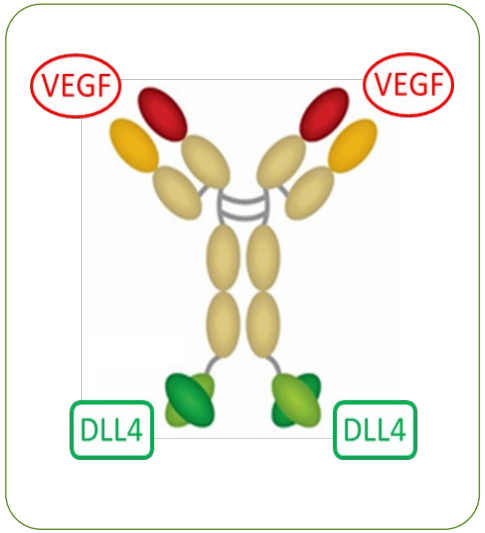
CTX-009

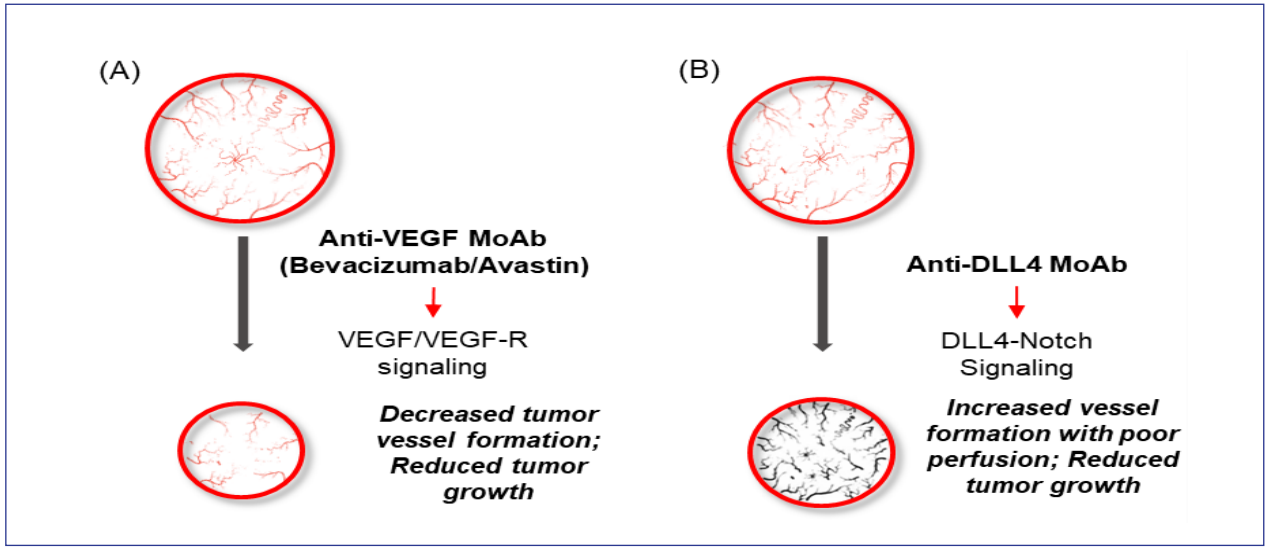
DLL4 X VEGF-A bispecific antibody

Overview of CTX-009

- Bispecific antibody blocking DLL4 (Notch-1 ligand) and VEGF-A (soluble ligand)
- Does not lead to ADCC, Fc inactive
- Binds to its targets with 2:2 valency
- At 10 mg/Kg, CTX-009 has approximately the same VEGF-A capturing ability as bevacizumab (Avastin)
- The only DLL4 X VEGF bispecific that demonstrated monotherapy activity in the clinic in colorectal and gastric cancer
- Durable responses in patients with cholangiocarcinoma seen in Phase 1b study of CTX-009 in combination with paclitaxel



Dual blockade of DLL4 and VEGF overcomes VEGF resistance



CTX-009 – Vision and Potential

Best-in-class DLL4 x VEGF-A bispecific

- Phase 3 ongoing in BTC
- Phase 2 ongoing in CRC

Oncology

Has demonstrated compelling activity in the 3rd line and 4th line settings in patients with Cholangiocarcinoma, Colorectal Cancer, Gastric Cancer and Pancreatic Cancer

Could become front line therapy in multiple solid tumors

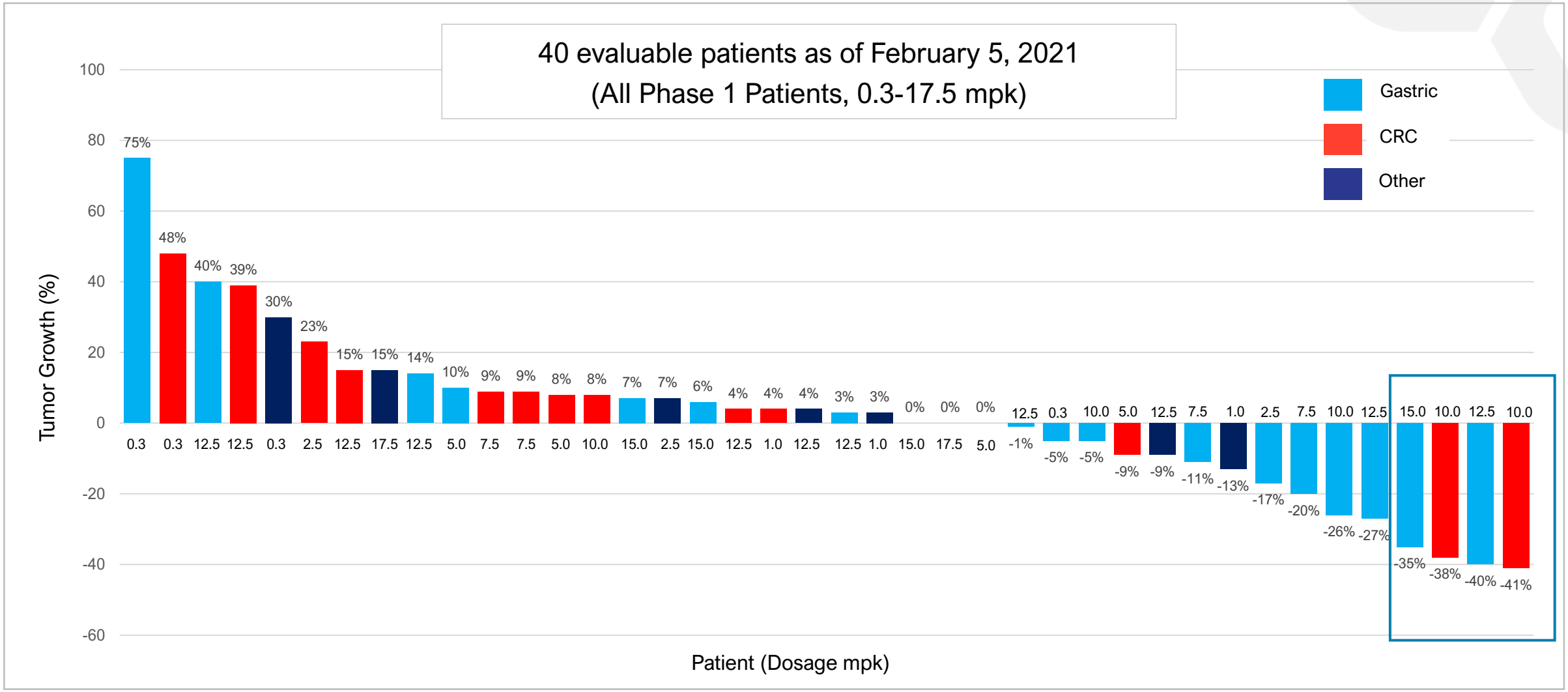
Other potential indications based on DLL4 expression such as Ovarian Cancer & Renal Cell

Ophthalmology

Potential to address AMD and DME based on mechanism

Consideration for partnership

Phase 1a CTX-009 Monotherapy (all doses)



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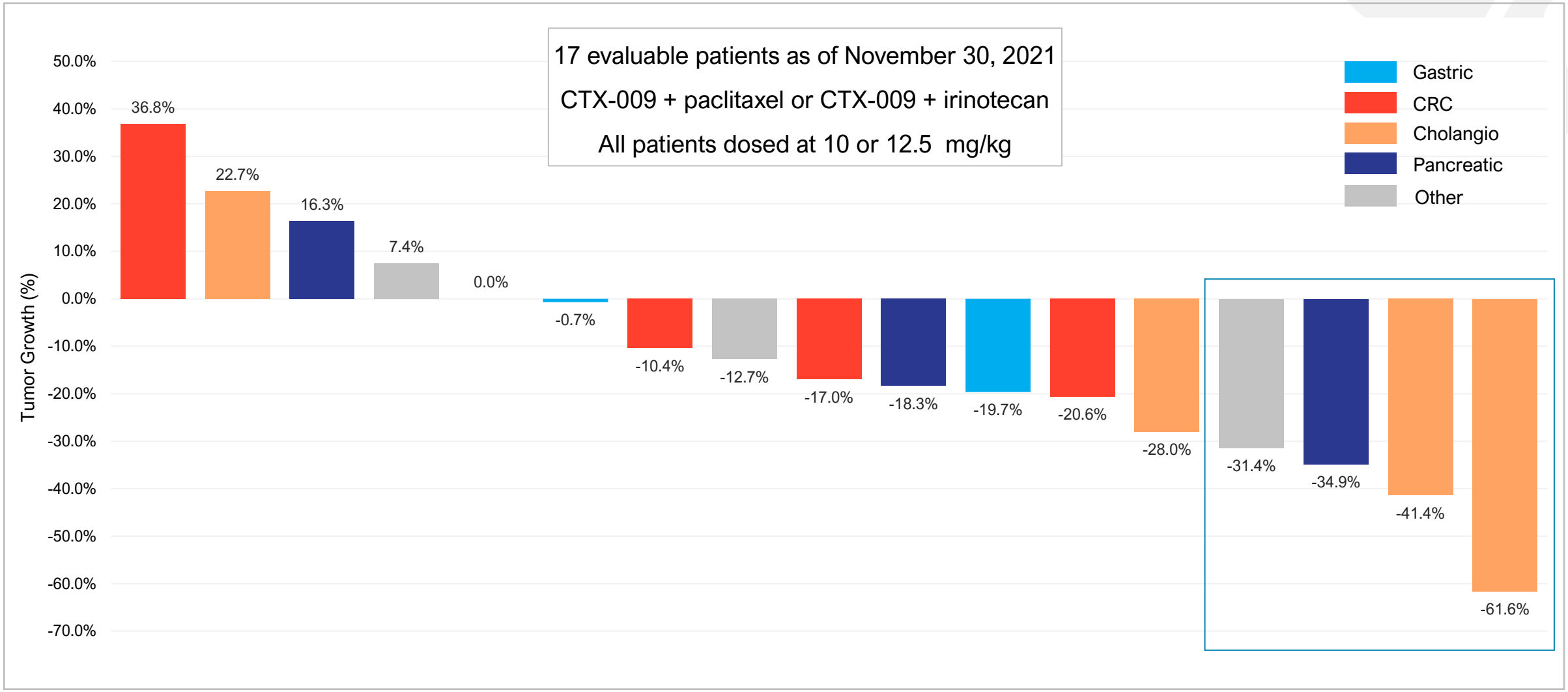
Phase 1b CTX-009 Combination Study



Phase 1 CTX-009 Safety Data

Phase 1a Monotherapy (n=45)

Drug-related adverse events observed in > 5% of patients	Total (n)	Total (%)	Grade 3 (n)	Grade 3 (%)
Hypertension*	17	38	7	16
General disorders (fatigue, fever, asthenia, edema, etc.)	7	16	1	2
Nervous system disorders (headache, dizziness)	7	16	1	2
Gastrointestinal disorders (nausea, vomiting, etc.)	6	13	2	4
Pulmonary hypertension	4	9	0	0
Proteinuria	3	7	0	0

Phase 1b Combination (n=17)

Drug-related adverse events observed in > 1 patient	Total (n)	Total (%)	Grade 3 (n)	Grade 3 (%)
Hypertension	8	47	4	24
Nausea	8	47	1	6
Fatigue	6	35	1	6
Neutropenia** Anemia** Thrombocytopenia**	6 4 2	35 24 12	2 3 2	12 18 12
Diarrhea	5	29	0	0
Anorexia	5	29	0	0
Proteinuria	5	29	0	0
Pulmonary hypertension (all grade 1)	5	29	0	0
Dyspnea	4	24	0	0
Gingival edema (mucositis)	2	12	0	0
Anal hemorrhage	2	12	0	0

* In clinical trials of bevacizumab, incidence of Grade 3-4 hypertension ranged between 5%-18% (Avastin label). It is typically managed by anti-hypertensive drugs

**Labeled Grade 3/4 cytopenia events for concomitant chemotherapy agent:
Irinotecan: 31.4% neutropenia, 4.5% anemia, 1.7% thrombocytopenia. Paclitaxel: 52% neutropenia, 16% anemia, 7% thrombocytopenia

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CTX-009 – Phase 1 Clinical Studies Summary

Overall Response Rate at the Efficacious Dose
(10-12.5 mg/kg)

Monotherapy	Combination
18.8% ORR (3/16)	**23.5% ORR (4/17)**

Clinical Benefit Rate at the Efficacious Dose
(10-12.5 mg/kg)

Monotherapy	Combination
68.8% (11/16)	**76.5% (13/17)**

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Phase 2 CTX-009 Combination Study (S. Korea)

Patients with biliary tract cancers after one or two prior therapies

Simon 2 Stage adaptive design

Stage 1

CTX-009 at 10 mg/kg biweekly
Paclitaxel 80 mg/m^2 weekly 3 of 4 weeks

N = 21

3 or more PRs

Stage 2

CTX-009 at 10 mg/kg biweekly
Paclitaxel 80 mg/m^2 weekly 3 of 4 weeks

N = 45 additional patients

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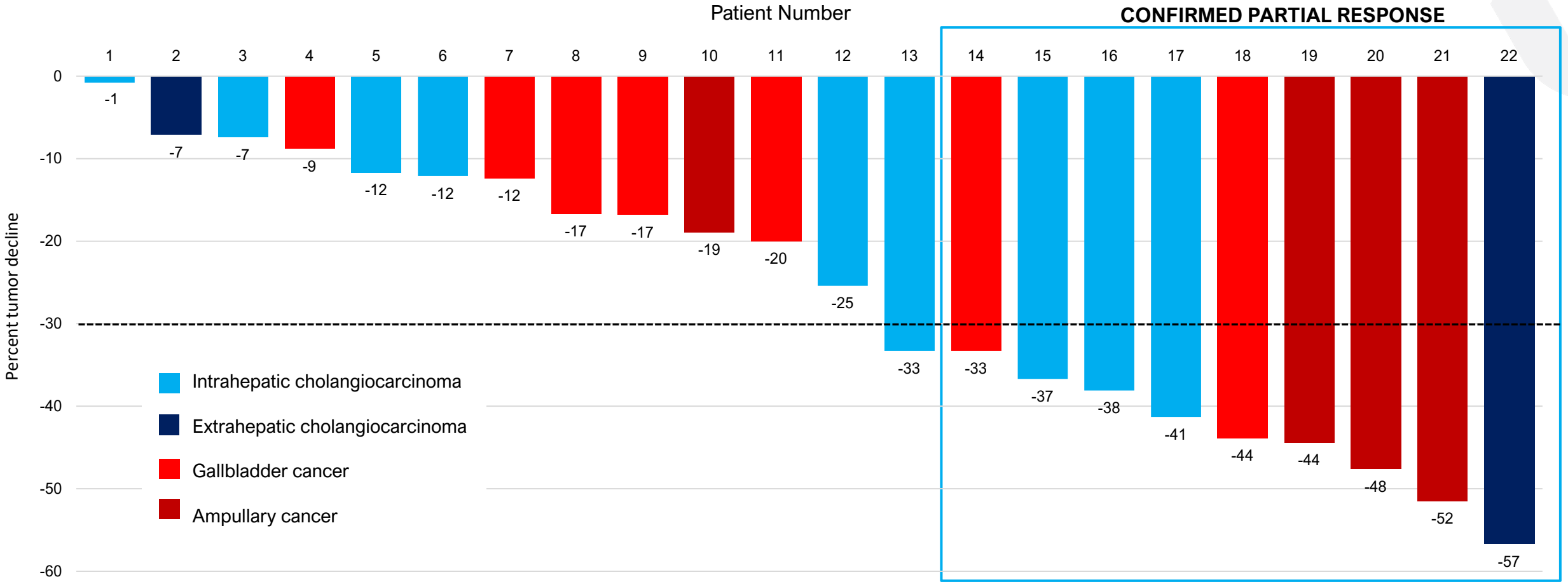
Phase 2 CTX-009 Data

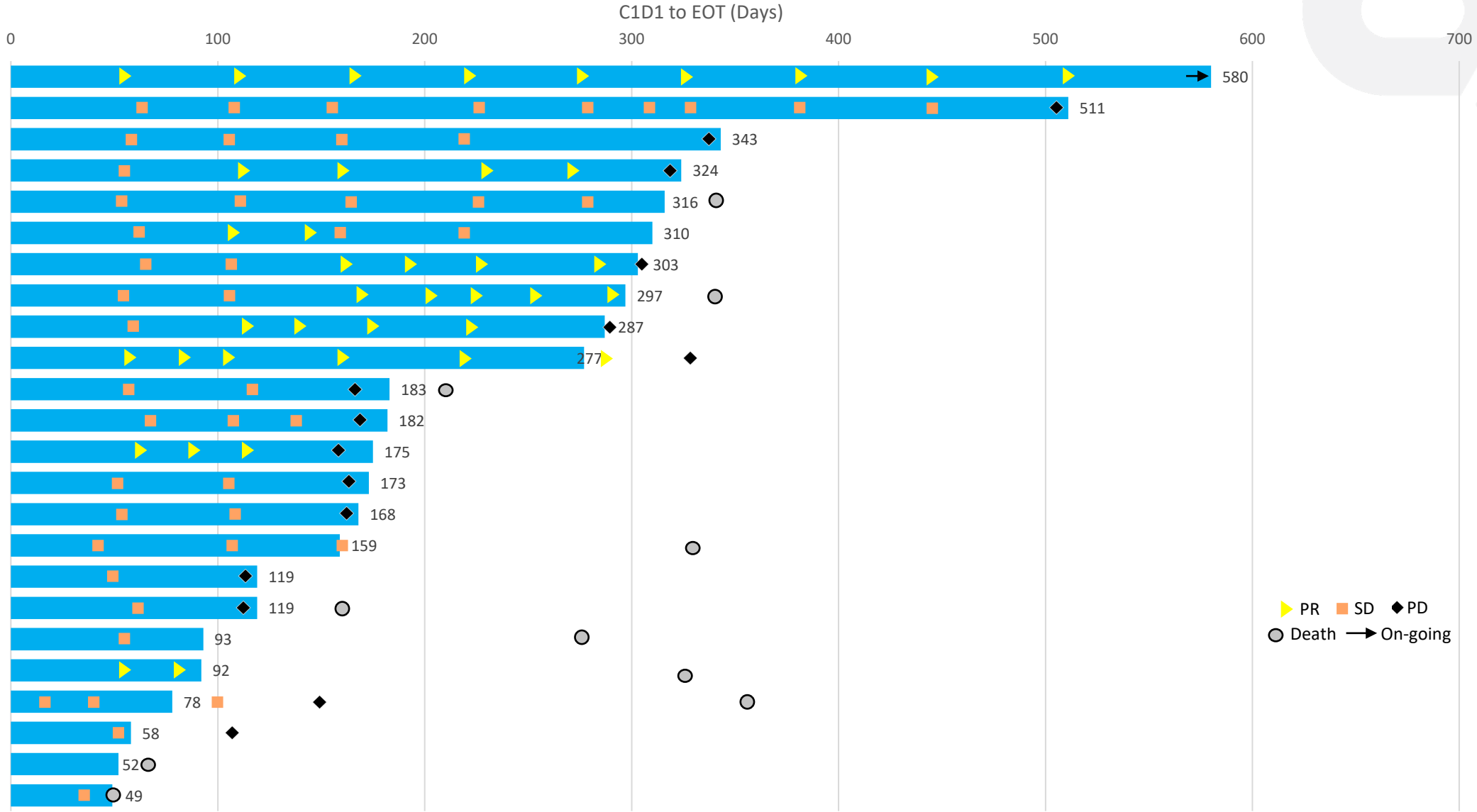
Responses achieved across multiple BTC subclasses. Data as of November 9, 2022

ORR = 37.5%
CBR = 91.5%



2 patients were not evaluable (one missing post baseline scan; one had a scan outside of protocol window)

CTX-009 Swimmer Plot



CTX-009 Phase 2 Results (Median follow-up of 12.1 months)

- 24 patients enrolled and dosed
- 1 patient remains on study

Endpoint	Value (95% CI)
Overall Response Rate (ORR)	**37.5%**
Stable Disease (SD)	**54.2%**
Progression Free Survival (PFS)	**9.4 m** (5.4 – 11.1)
Overall Survival (OS)	**12.5 m** (10.9 – NA)
Duration of Response	**6.9 m** (3.5 – NA)

Number of previous systemic therapies	ORR
Pts treated in the 2L [n=11]	**7/11 (63.6%)**
Pts treated in the 3L [n=13]	2/13 (15.4%)

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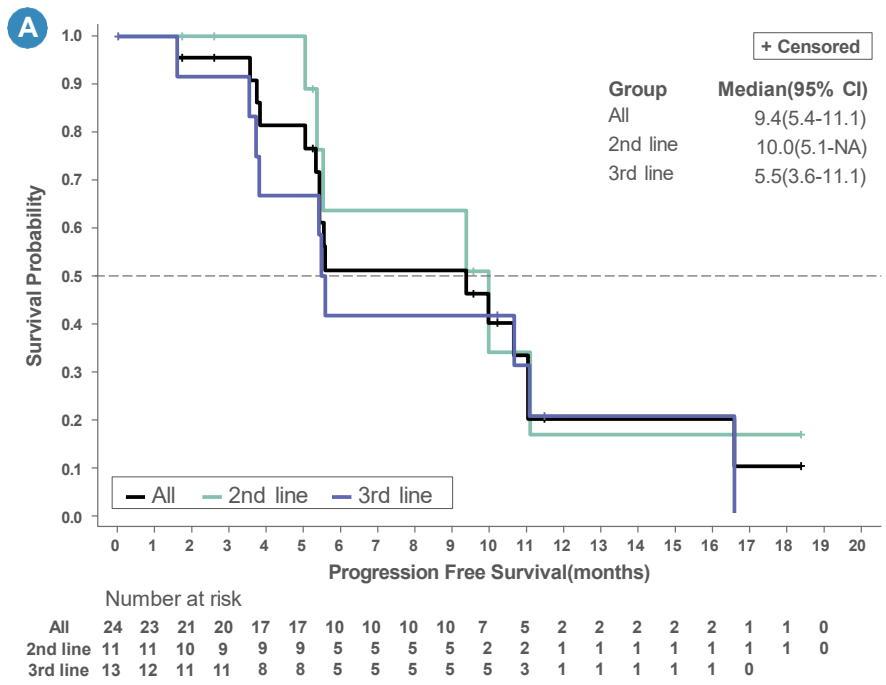
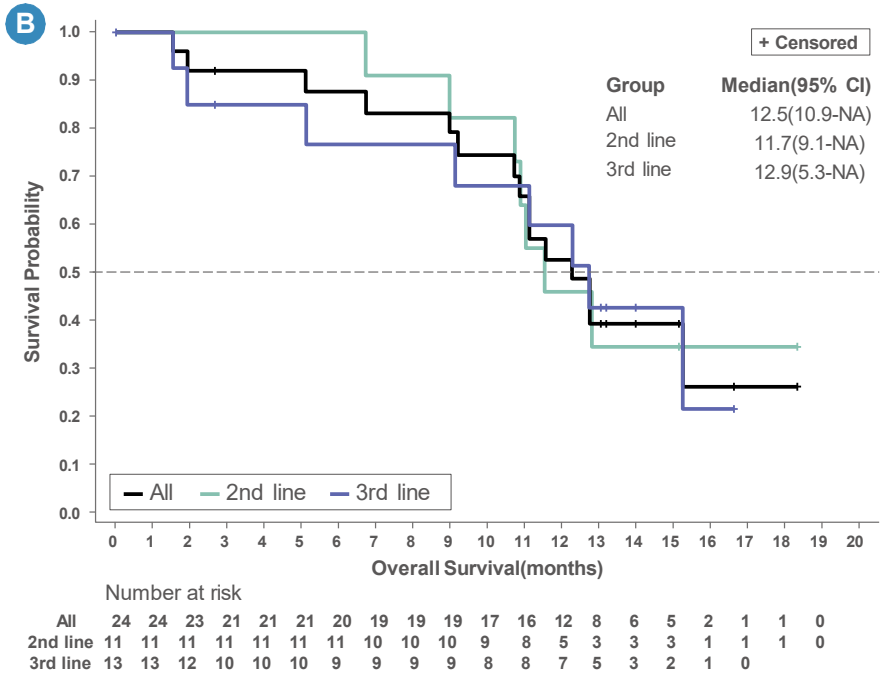
Secondary Endpoints: PFS and OS

- **Median PFS: 9.40 m (5.4-11.1)**



- **Median OS: 12.5 m (10.9-NA)**



Treatment-Emergent ≥ Grade 3 Adverse Events (>10% of patients)

Phase 2 BTC study of CTX-009 plus paclitaxel

Event	24 total Patients N (%)
Neutropenia	20 (83.3%)
Anemia	5 (20.8%)
Hypertension	4 (16.7%)
Thrombocytopenia	3 (12.5%)

TEAE leading to discontinuation: confusion, embolism, pneumonia (grade 5), biliary fistula, large intestine perforation, blood creatinine increased, and blood urea nitrogen increased

Bevacizumab and paclitaxel label information

Event	Bevacizumab (label)	Paclitaxel (label)
Neutropenia		52%
Hypertension	5-18%	
Anemia		16%
Thrombocytopenia		7%
	Additional events: GI perforation, wound healing complications, Proteinuria, hemorrhage	Additional events: Hypersensitivity reactions, infections, bleeding, neuropathy

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How Does CTX-009 Data Compared to Other BTC Studies?

Parameter	CTX-009 Mixed 2L and 3L N=24	FOLFOX (ABC-06) [1] Only 2L N=81	Gem/Cis [2] 1L N=204	Gem/Cis + Durv [3] Only 1L N=341
ORR	37.5% [64% 2L; 15% 3L]	5%	26%	26.7%
OS	12.5 m	6.2 m	11.7 m	12.9 m
PFS	9.4 m	4.0 m	8.0 m	7.2 m
Any AE	100%	99%	55%	99.4%
Gr 3/4 AEs	92%	60%	71%	74%
Deaths (as Gr 5)	1 (4%)	10 (12%)	17 (8%)	13 (4%)
AEs leading to discontinuation	25%	~ 12%	10%	13%

1. Lamarca D, *Lancet Oncol* 2021; March 30
2. Valle, J. et al., *N ENGL J MED*, 362; 14 Apr 8, 2010, p. 1273
3. Oh, D. et al., *ESMO Poster 56P 2022*

CTX-009 Phase 2 Study Summary

24 patients with BTC have been enrolled and dosed

9 partial responses (PRs) for a 37.5% ORR in patients treated in the second- and third-line settings (**64% ORR** of patients treated in the 2nd line setting)

Median PFS 9.4 months

Median OS 12.5 months

Adverse event profile similar to Phase 1 studies

Other regimens in BTC

FOLFOX (NCCN guidelines):

- 5% ORR in the second-line setting
- 4.0 month median PFS
- 6.2 month median OS

TOPAZ-1 (Phase 3 study):

- 26.7% ORR for Gem/Cis/Durvalumab (anti PD-L1) in the first-line setting

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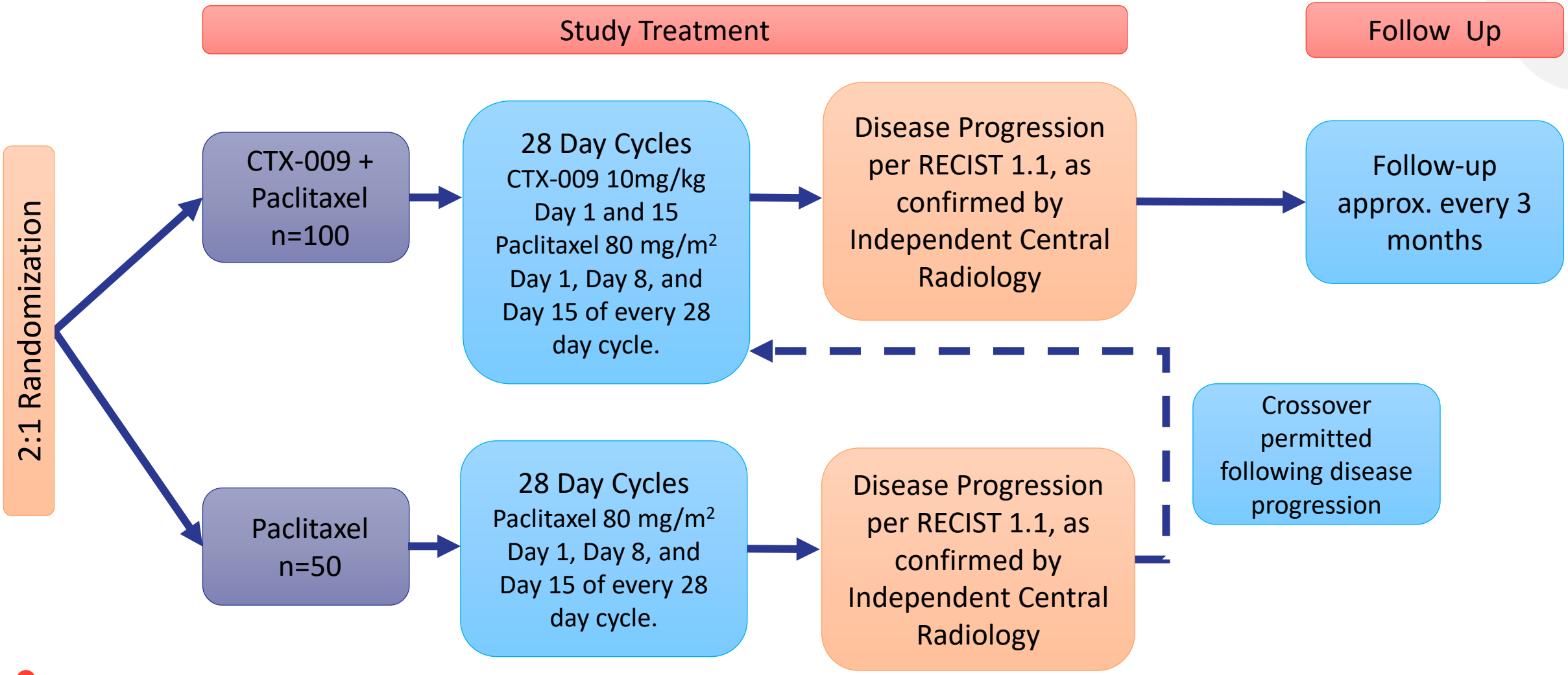
COMPANION-002: Phase 2/3 U.S. BTC Study

Patients who have received one prior line of therapy



CTX-009: *BTC* Patient Demographics and Current Treatments

	US	EU5	Japan	Worldwide
Incident Cases	18,400[1]	21,800[2]	14,329[2]	>200,000[3]

1L Treatment

Doublet chemo of gemcitabine + cisplatin (ABC-02 study)
Or
Gemcitabine/cisplatin + durvalumab (recently approved for 1L)

2L Treatment

FOLFOX
5% ORR
0.9 Mos OS Δ

<u>FGFR2 mutation</u>
Pemigatinib
(10-15% of CCA)

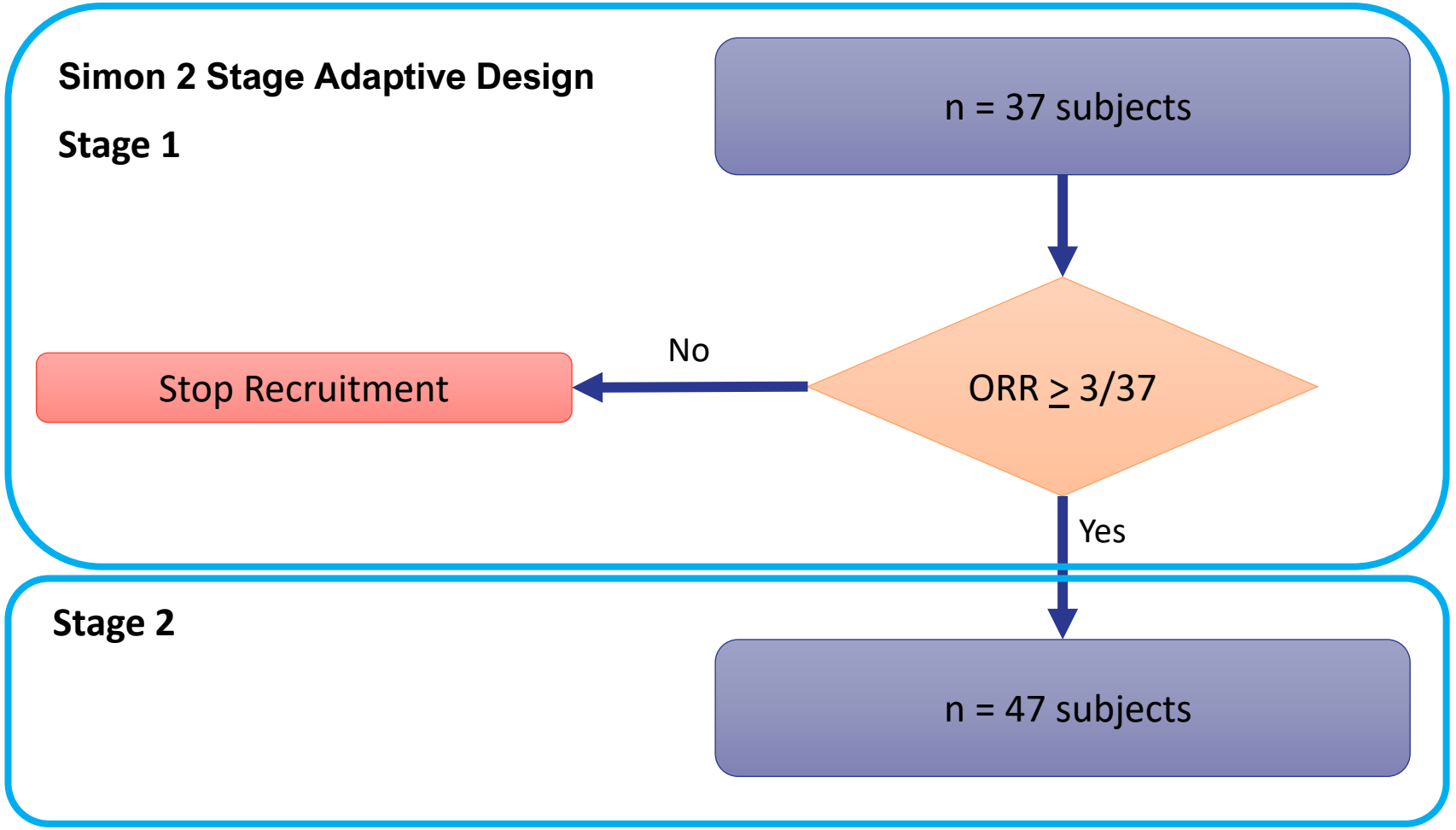
<u>IDH1 mutation</u>
Ivosidenib
(1-3% of BTC)

<u>MSI-H tumors</u>
PD-1 Inhibitor
(<1% of BTC)

Clinical trial

1. NCI Surveillance, Epidemiology, and End Results (SEER) program
2. Delveinsight/company estimates
3. International Agency for Research on Cancer/GLOBOCAN

COMPANION-003: Phase 2 U.S. Colorectal Cancer (CRC) Study



CTX-009: *CRC* Patient Demographics and Current Treatments

	US	EU5	Japan	Worldwide
Incident Cases	153,020[1]	246,734[2]	148,505[2]	1,931,590[2]
~50% Metastatic[3] 50-70% reach 3L[4]	38,000-53,000 patients			

1L Treatment

Chemotherapy FOLFOX/FOLFIRI

Bevacizumab or EGFR inhibitor + chemotherapy

Anti-PD-1 with MSI-H/dMMR mutation

~5% of CRC

2L Treatment

Bevacizumab or EGFR + chemo

BRAF/EGFR with V600E mutation

5-8% of CRC

3L Treatment

Regorafenib

ORR 1%, Median PFS 2.0 months

Trifluridine/ tipiracil

ORR 1-2% Median PFS ~2 months

1. NCI Surveillance, Epidemiology, and End Results (SEER) program
2. International Agency for Research on Cancer/GLOBOCAN
3. L Biller, D Schrag , JAMA 2021 Feb 16
4. Bekaii-Saab, Clin advances in Hem and Onc, Supp Jan 2021

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The COMPANION (COMPASS ANTI-ANGIOGENESIS) Studies

Evaluating additional indications for CTX-009 both as a monotherapy and in combination with chemotherapy

CTX-471

CD137 monoclonal antibody

CTX-471: Potential Best-in-Class CD137 Agonist

CTX-471: next generation CD137 agonist

Fully human, IgG4, optimized affinity for agonistic antibody

Unique epitope: non-ligand blocking

Phase 1 Study Update

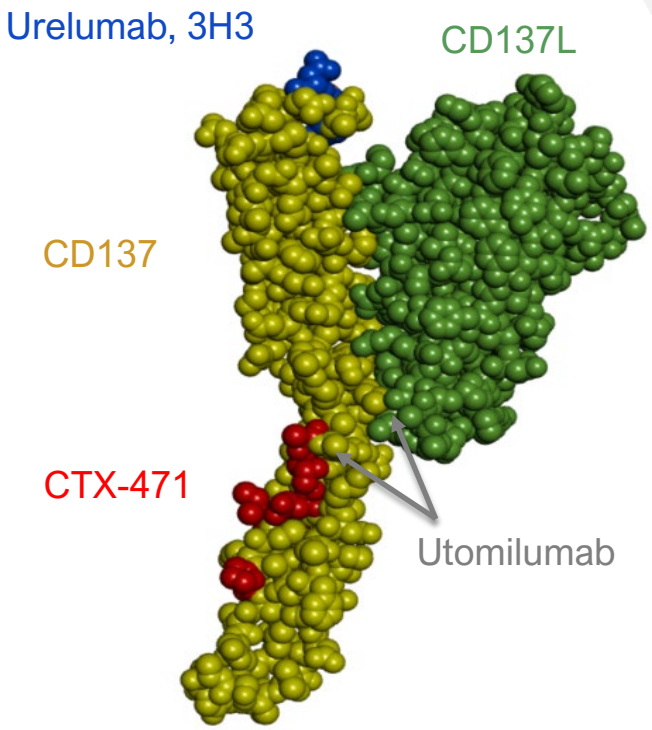
Monotherapy in post checkpoint inhibitor patients

Monotherapy Phase 1a multiple ascending dose study completed

- MTD defined by immune thrombocytopenia

Monotherapy Phase 1b dose expansion study completed

- 1 CR: small cell lung cancer
- 4 PRs observed: melanoma (3 of 11) and mesothelioma (1 of 4)

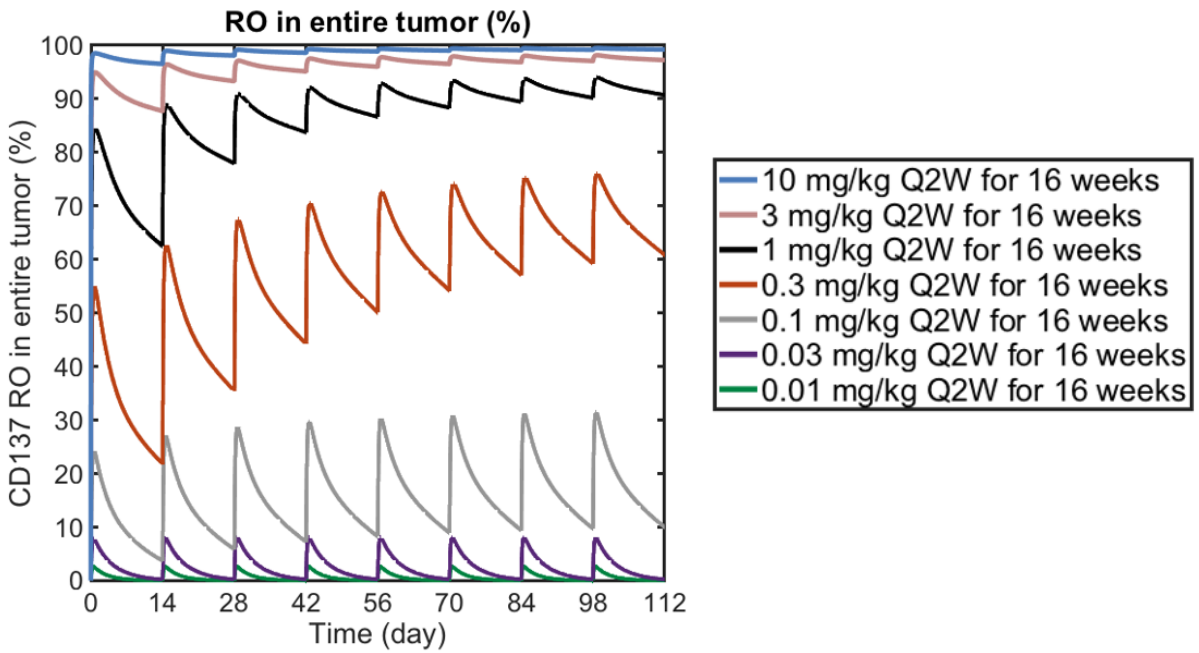


JCI Insight. 2020;5(5):e133647

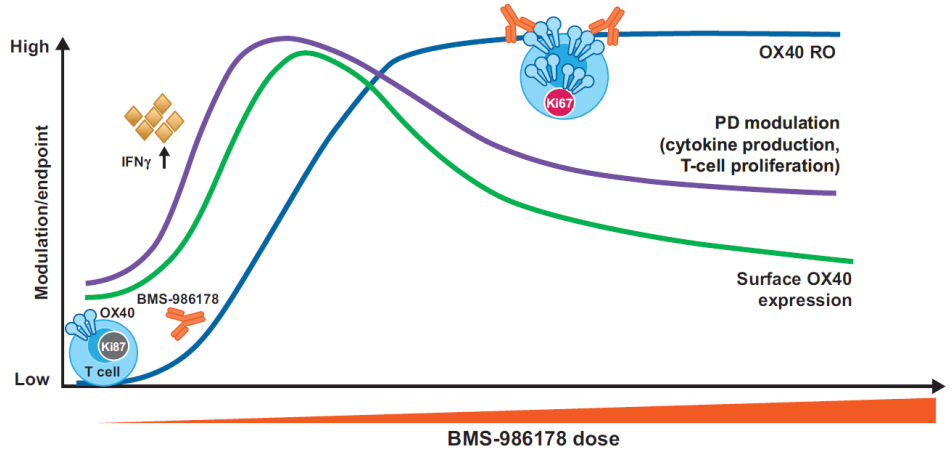
What is the Optimal Dose of an Agonist Antibody?

- Our dose selection is based on modeling of CD137 fractional receptor occupancy (RO)
- Modeling predicted human pk parameters based on preclinical data
- Preliminary Phase 1 PK data are consistent with the modeling

CTX-471 predicted %RO in humans



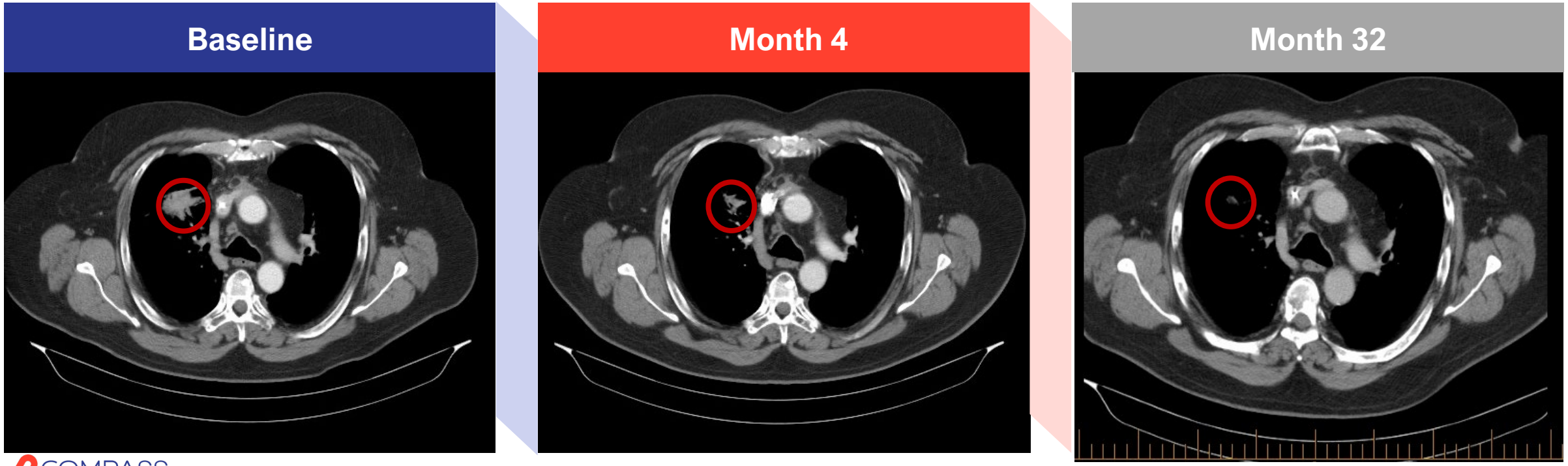
Maximal %RO may not lead to optimal response (Wang et al., Clinical Cancer Research, 2019)



CTX-471: Complete Response in a Patient with Small Cell Lung Cancer

After progression on atezolizumab/chemo and nivolumab

- 66 y.o. man with advanced SCLC: Carboplatin/etoposide plus atezolizumab first line; nivolumab second line
- Confirmed, complete response (CR) by PET ~ 3 years on therapy



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CTX-471 Clinical Development Plans

Phase 1b Monotherapy Study

Generally well tolerated

A complete response and four partial responses in the post PD-1/PD-L1 patient population

Small cell lung cancer, mesothelioma, and melanoma (three patients)

Phase 1b of CTX-471 with KEYTRUDA® in collaboration with Merck

Abbreviated CTX-471 dose escalation into the PD-1 regimen, followed by a cohort expansion

Post PD-1/PD-L1 Salvage Study

Dose escalation complete, no DLT

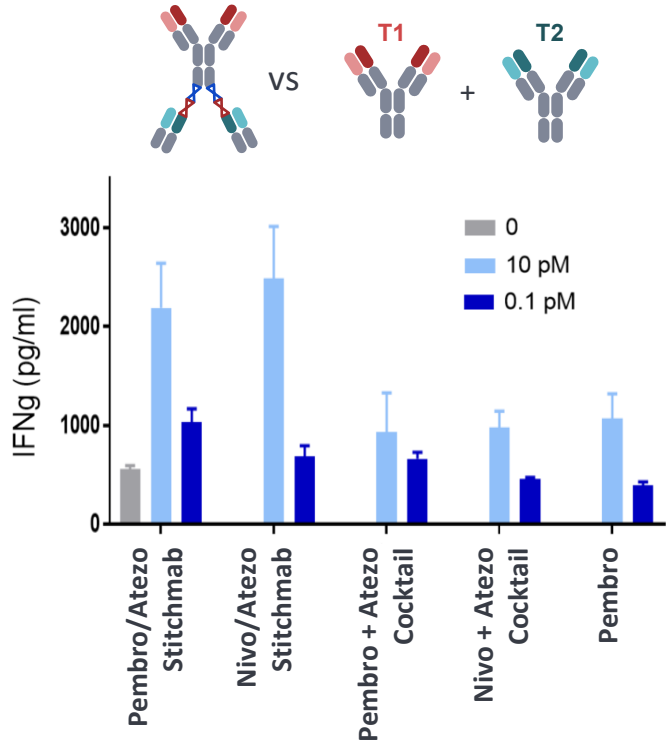
Dose expansion is ongoing

CTX-8371

PD-1 x PD-L1 bispecific antibody

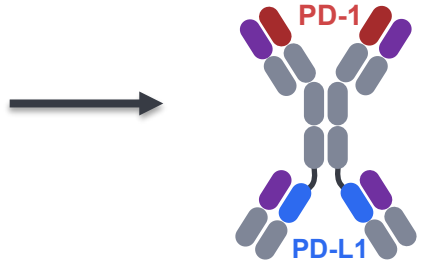
StitchMabs™ Platform was Utilized to Identify CTX-8371

Unexpected synergistic activity of PD-1/PD-L1 combination in bispecific Stitchmab format



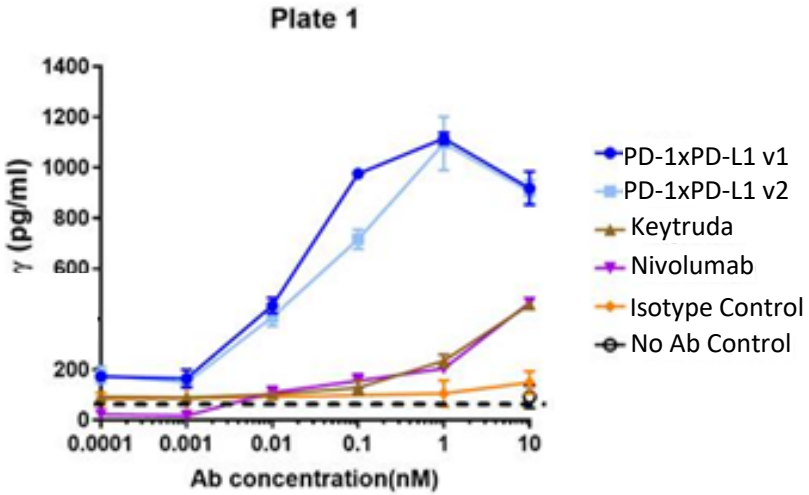
Mixed lymphocyte reaction (MLR) assay

Common Light Chain bispecifics were generated to test therapeutic hypothesis



CTX-8371

Our PD-1xPD-L1 bispecifics observed to outperform PD-1 blockers in T-cell activation assay



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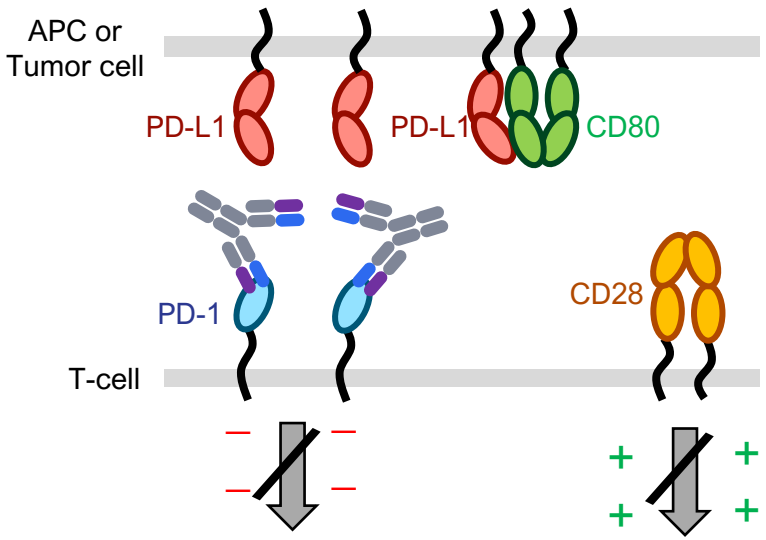
CTX-8371: Differentiated MoA Leads to Enhanced T-Cell Activation

Converting PD-1 positive T cells into PD-1 negative T cells

PD-1 blockers release brake but don't directly promote T-cell activation

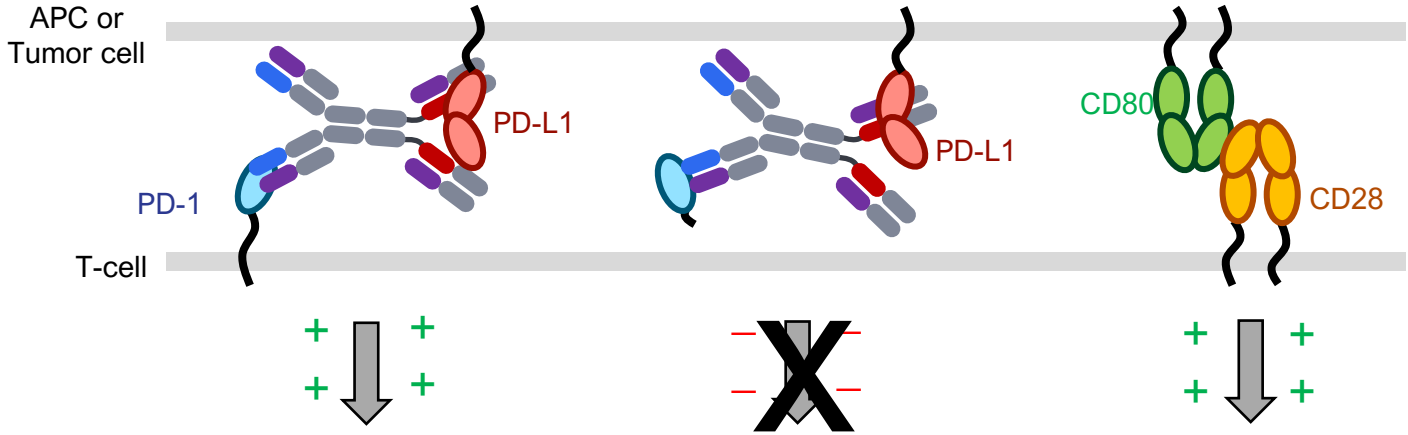


CTX-8371 activates T-Cells Through Multiple MOA's

Bridging of PD-1 expressing T-cells with PD-L1 expressing APC's or tumor cells

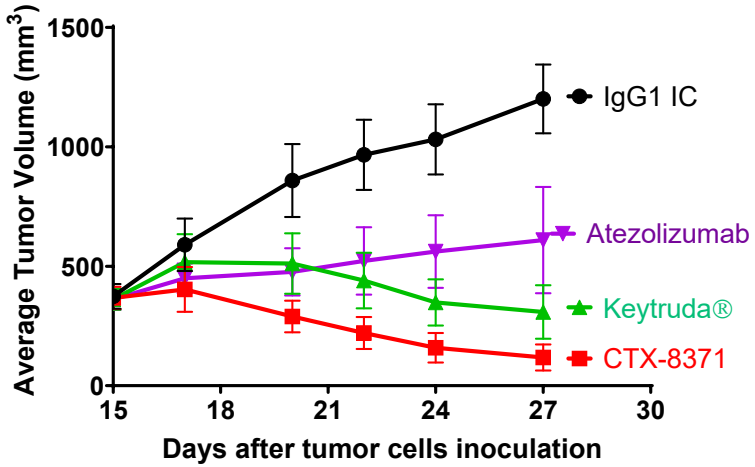
Significant reduction in cell surface PD-1 due to receptor shedding

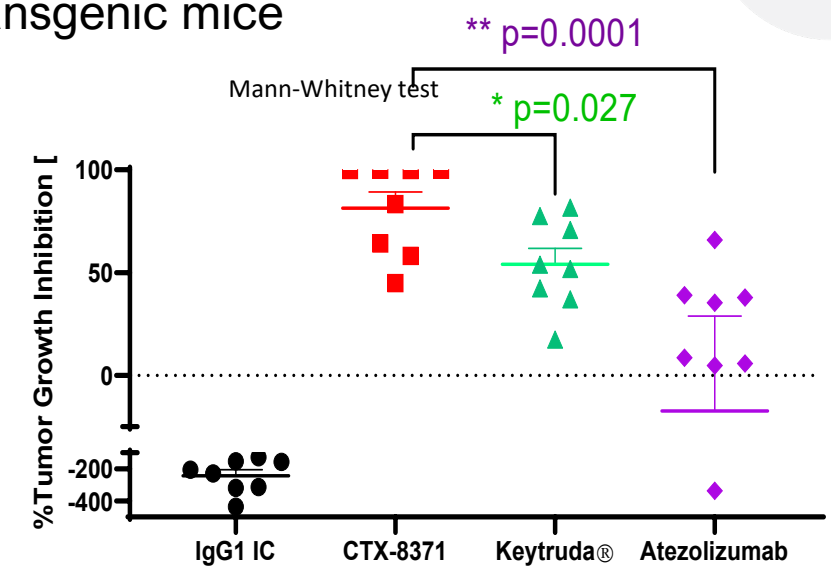
Increased pool of free CD80 able to engage costimulatory receptor CD28

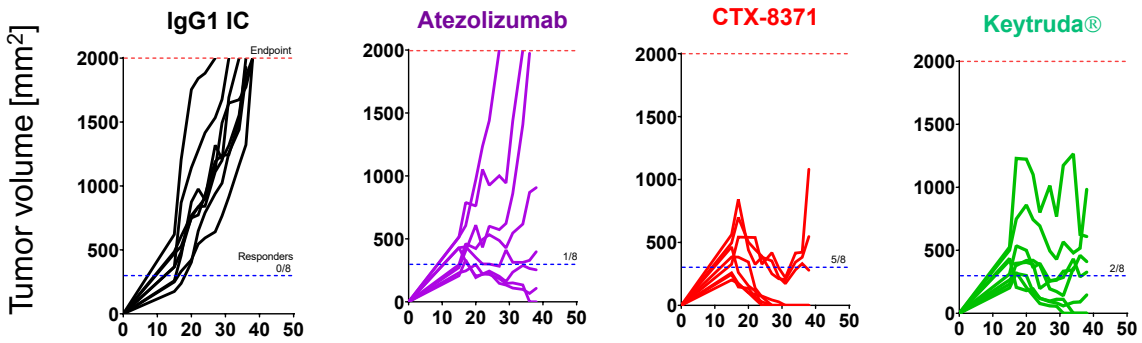


CTX-8371 Pre-Clinical Proof of Concept

Activity in MC38-hPD-L1 model implanted in hPD-1/hPD-L1 transgenic mice







Group	% Cured	Tumor free / total
CTX-8371	**62.5**	**5/8**
Atezolizumab	12.5	1/8
IgG1 IC	0	0/8
Keytruda	25	2/8

CTX-8371: Development Status

IND was accepted

Currently opening clinical sites

First patient dosing expected in 1Q 2024

Phase 1 study design

Multiple ascending dose, dose-escalation study

5 doses planned: 0.1, 0.3, 1.0, 3.0, and 10 mg/kg

Post PD-1 or PD-L1 patient population: Melanoma, NSCLC, HNSCC, Hodgkin's Lymphoma, TNBC

First patient dosing targeted for Q1 2024

Potential for proprietary combination regimens with CTX-009 and CTX-471

Compass Therapeutics

Summary

Program Summary

CTX-009 Novel DLL4 x VEGF-A bispecific antibody with both combination and monotherapy activity

Phase 1: Dose response established – responses in multiple indications

BTC Phase 2 results: 24 patients**:** 37.5% ORR (2L/3L), 63.6% (2L), median PFS 9.4 months, OS 12.5 months

COMPANION-002: BTC Phase 3 randomized study ongoing; top-line data expected H2 2024

COMPANION-003: CRC Phase 2 monotherapy study ongoing; top-line data expected mid-2024

CTX-471 Potential best-in-class CD137 agonist antibody with monotherapy activity

Phase 1 monotherapy study complete:

1 complete response (CR): small cell lung cancer (1 of 3), and 4 partial responses (PRs) in post PD-1 population: metastatic melanoma (3 of 11) and mesothelioma (1 of 4)

CTX-471 in combination with KEYTRUDA® dose escalation complete, dose expansion ongoing

CTX-8371 Next generation PD-1 x PD-L1 bispecific antibody

Unique MOA – enhances T-cell activation

IND cleared, currently opening clinical sites

Key 12 Month Milestones