

DEVELOPING PRECISION MEDICINES FOR THE TREATMENT OF CANCER

Corporate Presentation – January 2023

FORWARD-LOOKING STATEMENTS



This presentation contains forward-looking statements. Such statements include, but are not limited to, statements regarding our research, preclinical and clinical development activities, plans and projected timelines for ziftomenib, tipifarnib and KO-2806, plans regarding regulatory filings, our expectations regarding the relative benefits of our product candidates versus competitive therapies, and our expectations regarding the therapeutic and commercial potential of our product candidates. The words "believe," "may," "should," "will," "estimate," "promise," "plan", "continue," "anticipate," "intend," "expect," "potential" and similar expressions (including the negative thereof), are intended to identify forward-looking statements. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. Risks that contribute to the uncertain nature of the forward-looking statements include: our preclinical studies and clinical trials may not be successful; the U.S. Food and Drug Administration (FDA) may not agree with our interpretation of the data from clinical trials of our product candidates; we may decide, or the FDA may require us, to conduct additional clinical trials or to modify our ongoing clinical trials; we may experience delays in the commencement, enrollment, completion or analysis of clinical testing for our product candidates, or significant issues regarding the adequacy of our clinical trial designs or the execution of our clinical trials may arise, which could result in increased costs and delays, or limit our ability to obtain regulatory approval; the commencement, enrollment and completion of clinical trials and the reporting of data therefrom; the COVID-19 pandemic may disrupt our business and that of the third parties on which we depend, including delaying or otherwise disrupting our clinical trials and preclinical studies, manufacturing and supply chain, or impairing employee productivity; our product candidates may not receive regulatory approval or be successfully commercialized; unexpected adverse side effects or inadequate therapeutic efficacy of our product candidates could delay or prevent regulatory approval or commercialization; and we may not be able to obtain additional financing. Additional risks and uncertainties may emerge from time to time, and it is not possible for Kura's management to predict all risk factors and uncertainties.

All forward-looking statements contained in this presentation speak only as of the date on which they were made. Other risks and uncertainties affecting us are described more fully in our filings with the Securities and Exchange Commission. We undertake no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

INVESTMENT HIGHLIGHTS



Targeted Oncology	Advancing a pipeline of novel therapies, forging new scientific and clinical paths to give patients a better chance for long-term durable remissions
Proprietary Pipeline	 Menin Inhibitor Program (ziftomenib) Potential to address 35% or more of acute leukemias Encouraging safety, tolerability and clinical activity observed in relapsed/refractory AML patients 30% CR rate among 20 patients with NPM1 mutations at 600 mg RP2D Phase 2 registration-directed trial in NPM1-mutant AML expected to begin in Q1 2023 Combination studies with standards of care expected to begin in 1H 2023
	 Farnesyl Transferase Inhibitor Programs (tipifarnib & KO-2806) Durable responses as a monotherapy in recurrent/metastatic HRAS-mutant HNSCC patients Proof of mechanism demonstrated in combination with alpelisib in PIK3CA-dependent HNSCC Potential to prevent emergence of resistance to osimertinib in EGFR-mutant NSCLC IND for KO-2806, next-generation FTI, on track for Q1 2023
Strong Financials	 \$438 million in Cash as of December 31, 2022* \$25 million equity investment from Bristol Myers Squibb and \$125 million term loan facility, if fully drawn, extend cash runway into 2026

* Unaudited, preliminary cash, cash equivalents and short-term investments as of 12/31/22

KURA LEADERSHIP TEAM AND BOARD OF DIRECTORS



Leadership Team



Troy Wilson, Ph.D., J.D. President & Chief Executive Officer



Teresa Bair, J.D. Chief Legal Officer



Pete De Spain Senior Vice President, Investor Relations & Corporate Communications

Board of Directors

Troy Wilson, Ph.D., J.D. Chairman

Faheem Hasnain Lead Independent Director

Helen Collins, M.D.

Tom Doyle

Senior Vice President,

Finance & Accounting

Stephen Dale, M.D.

Chief Medical Officer



Kirsten Flowers Chief Commercial & Corporate Strategy Officer



Mollie Leoni, M.D. Senior Vice President, **Clinical Development**

Thomas Malley

Mary Szela



Kathy Ford Chief Operating Officer

Carol Schafer

Steven Stein, M.D.

Diane Parks

DRUG CANDIDATE PIPELINE



PROGRAM	CLINICAL TRIAL	STUDY STARTUP	PHASE 1	REGISTRATION DIRECTED
ZIFTOMENIB Menin Inhibitor		NPM1-mutant acute myeloid leukemic	a (AML)	
	KOMET-001 Monotherapy	Non-NPM1-m/KMT2A-r AML		
		KMT2A-rearranged ALL		
	KOMET-007/008 Combination with standards of care	NPM1-mutant AML		
		KMT2A-rearranged AML		
TIPIFARNIB Farnesyl Transferase Inhibitor (FTI)	AIM-HN Monotherapy	HRAS-mutant head and neck squamo	us cell carcinoma (HNSCC)*	
	KURRENT-HN Combination with alpelisib	PIK3CA-dependent HNSCC		
		HRAS-dependent HNSCC		
	KURRENT-LUNG Combination with osimertinib	EGFR-mutant NSCLC		
KO-2806 Next-Generation FTI	Combination with targeted therapies	Solid Tumors		

* Trial closed to further enrollment



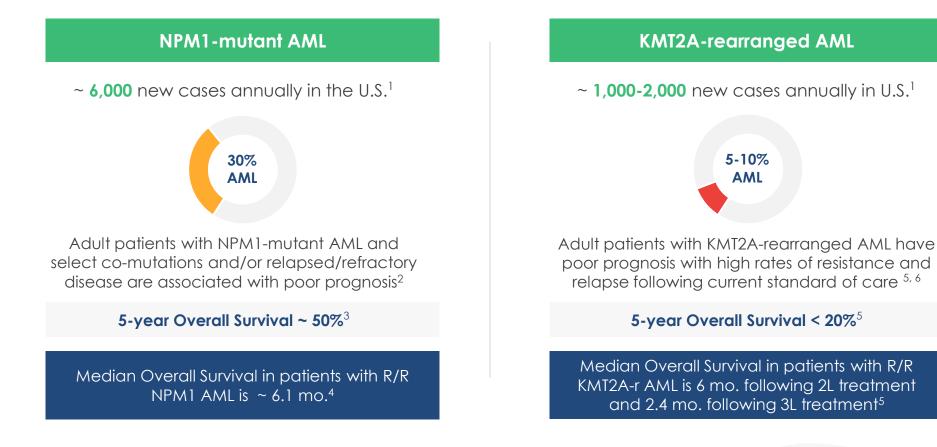
ZIFTOMENIB:

NPM1-MUTANT AND KMT2A-REARRANGED AML REPRESENT AREAS OF SIGNIFICANT UNMET NEED

AML



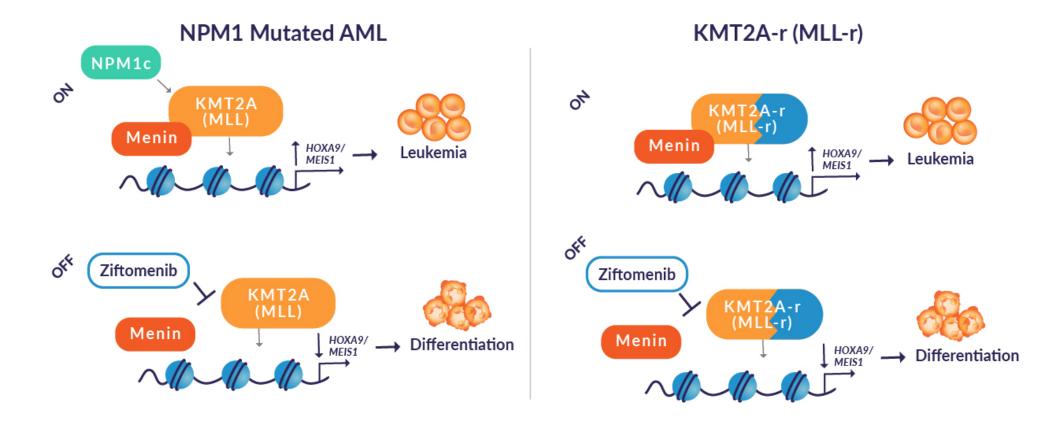
No FDA-Approved Targeted Therapies Exist Today



¹ SEER statistics for AML in the US, accessed April 2020. ² Döhner et al. Blood. 2017 Jan 26;129(4):424-447. ³ Angenendt L, et al. J Clin Oncol. 2019;37(29):2632-2642. ⁴ Venugopal S, et al. ASH Abstract 2287, 2021. ⁵ Issa GC, et al. Blood Cancer J. 2021;11(9):162. ⁶ Vetro C, et al. Cancer Genet. 2020;240:15-22.

ZIFTOMENIB IS A POTENT AND SELECTIVE ORAL INHIBITOR OF THE MENIN-KMT2A/MLL COMPLEX

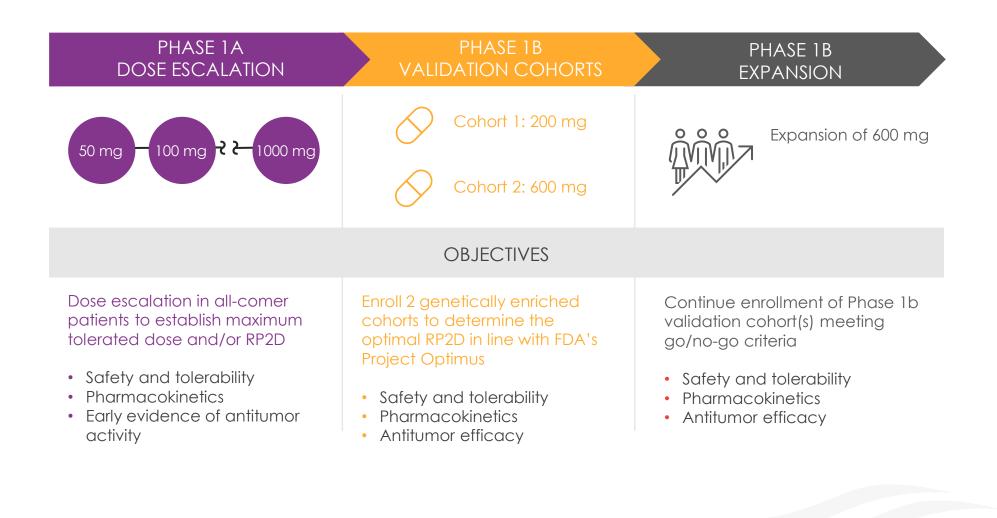




Kühn MW, et al. Cancer Discov. 2016;6(10):1166-1181 Thorsteinsdottir U, et al. Mol Cell Biol. 2001;21(1):224-234 Patel SS, et al. Curr Hematol Malig Rep. 2020;15(4):350-359 Brunetti L, et al. Cancer Cell. 2018;34(3):499-512

KOMET-001 PHASE 1 CLINICAL TRIAL OF ZIFTOMENIB IN PATIENTS WITH RELAPSED OR REFRACTORY (R/R) AML





ZIFTOMENIB DEMONSTRATES ENCOURAGING SAFETY PROFILE **AND TOLERABILITY IN PHASE 1B**



Example 2 Sector 2		
	200 mg	600 mg
NPM1-m	(N = 4)	(N = 20)
	0	0
KMT2A-r	(N = 13)	(N = 16)
Differentiation Syndrome	4 (30.8)	4 (25.0)
Febrile Neutropenia	0	2 (12.5)

Erba et al. ASH 2022 #64 (preliminary data as of October 24, 2022)

CHARACTERIZATION OF DIFFERENTIATION SYNDROME WITH ZIFTOMENIB



	200 mg N = 17, n (%)	600 mg N = 36, n (%)
NPM1-m (all grades)	0/4 (0)	4/20 (20.0)
≥ Gr3	0/4 (0)	1/20 (5.0)
KMT2A-r (all grades)	5/13 (38.5)	6/16 (37.5)
≥Gr3	4/13 (30.8)	4/16 (25.0)

Extramedullary involvement has a significantly higher frequency in patients with KMT2A(MLL) rearrangements vs. all others, including NPM1¹

Erba et al. ASH 2022 #64 (preliminary data as of October 24, 2022) ¹ Fianchi et al. Mediterr J Hematol Infect Dis. 2021; 13(1): e2021030; DOI: https://doi.org/10.4084/MJHID.2021.030

ZIFTOMENIB DEMONSTRATES ENCOURAGING ANTILEUKEMIC ACTIVITY AT 600 MG

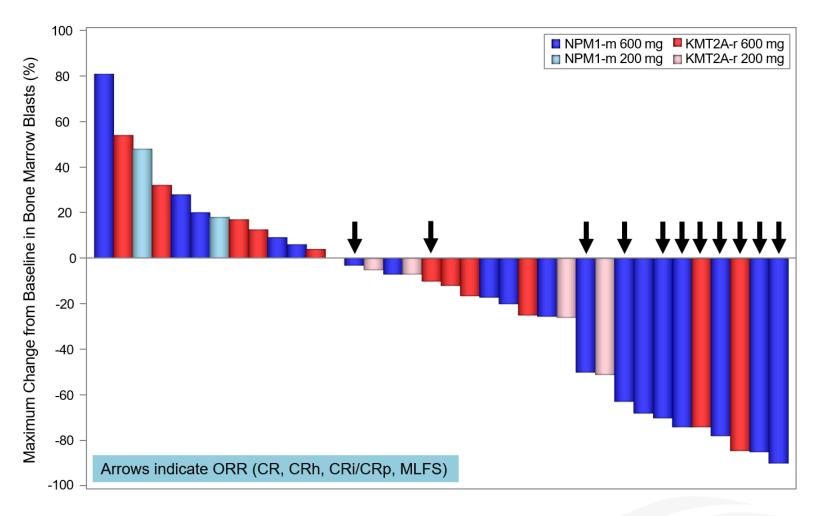


Best Overall Response	200 mg	600 mg
NPM1-m Phase 1a + 1b	(n=6)	(n=20)
CR	1 (16.7)	6 (30.0)
CR/CRh	1 (16.7)	6 (30.0)
CRc	1 (16.7)	7 (35.0)
MRD negativity	1 (100.0)	3 (42.9)1
ORR	2 (33.3)	8 (40.0)
KMT2A-r Phase 1a + 1b	(n=14)	(n=18)
CR/CRh	0	1 (5.6)
CRc	0	2 (11.1)
MRD negativity	0	2 (100.0)
ORR	0	3 (16.7)

¹ MRD was assessed for 5/7 CRc patients; 3 of those 5 patients (60%) tested were MRD negative CRc includes CR, CRh, CRi, CRp ORR includes CR, CRh, CRi, CRp, MLFS

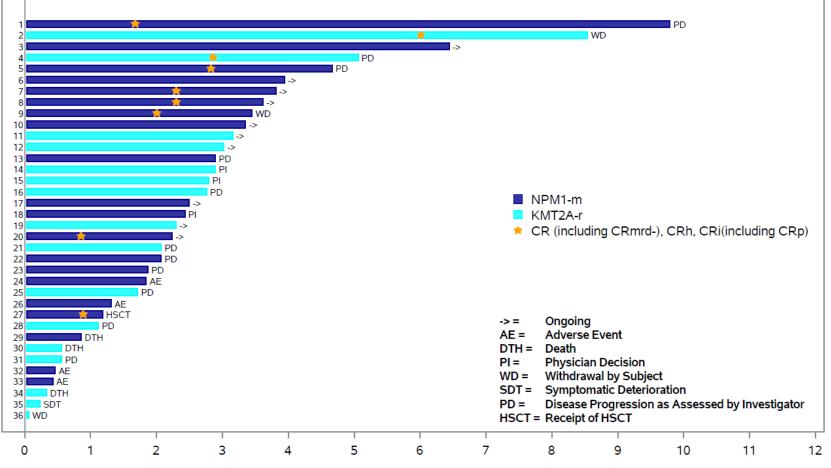
Erba et al. ASH 2022 #64 (preliminary data as of October 24, 2022)

DECREASING BONE MARROW BLAST COUNTS CONSISTENTLY REPORTED



CLINICAL ACTIVITY OF ZIFTOMENIB OPTIMAL AT 600 MG ORAL, DAILY DOSING



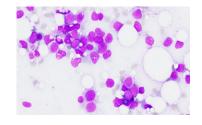


Duration of Treatment (Months)

ZIFTOMENIB INDUCES RAPID AND EXTENSIVE DIFFERENTIATION

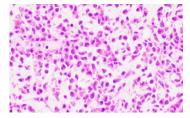
61 yo male with NPM1-m, FLT3-ITD, and IDH2 AML Baseline bone marrow blasts: 75%

Prior therapies	7+3, Midostaurin, HiDAC, gilteritinib
Initiated ziftomenib at	t 600 mg
DS during C1	Bone pain, ↓BP WBC ↑58K
Response	MLFS after Cycle 1CR after Cycle 3



Baseline Bone Marrow

Cellular BM (40%) with 75% blasts consistent with relapsed AML



Cycle 1 Day 28 ziftomenib

Hypercellular BM (>95%) with striking granulocytic hyperplasia and <1% blasts

Erba et al. ASH 2022 #64 (preliminary data as of October 24, 2022)

EVIDENCE OF CLINICAL BENEFIT IN PATIENTS WITH NPM1-MUTANT AML



44 yo female with NPM1-m, DNMT3A and IKZF1 AML Baseline bone marrow blasts: 14%		
Prior therapies	Cytarabine + anthracycline NOS; mitoxantrone, etoposide + cytarabine; HiDAC+ fludarabine + melphalan; 1st SCT + cyclophosphamide; lenalidomide + bortezomib; decitabine + venetoclax + gilteritinib; ASP1235; busulfan + fludarabine; 2nd SCT + methotrexate	
Initiated ziftomenib at 200 mg		
No DS	Experienced TRAEs of Gr4 lipase increased and Gr3 pancreatitis at C2D28; Gr3 pulmonary embolus during C17	
Response	CRmrd- after Cycle 1CRmrd- maintained and currently at Cycle 31	

22 yo male with NPM1-m AML Baseline bone marrow blasts: 90%		
Prior therapies	Cytarabine + idarubicin (7+3)	
Initiated ziftomenib at 600 mg		
DS during Cycle 1 (Gr2; non-serious)	Non-cardiac chest and bone pain; \downarrow fibrinogen (89 from 456 at baseline)	
Response	CRmrd- after Cycle 1Transplant scheduled	

EVIDENCE OF CLINICAL BENEFIT: EXAMPLE OF A KMT2A-REARRANGED NON-RESPONDING PATIENT



47 yo female with K Baseline bone marrow b	MT2A-r, TERT and BRAF AML plasts: 52%
Prior therapies	ddAC + paclitaxel, CPX-35, SCT, Aza, FLAG Ida-ven, DLI, RT - gums
Initiated ziftomenib at	200 mg
DS during C1	Muscle and EMD pain, \uparrow temp, \downarrow BP, WBC \uparrow 5.2
Response	 Bone marrow blasts 2% end of Cycle 2 Best overall response for the patient of SD due to residual extramedullary disease

aseline After 2 cycles

Erba et al. ASH 2022 #64 (preliminary data as of October 24, 2022)

SUMMARY: KOMET-001 PHASE 1 CLINICAL TRIAL OF ZIFTOMENIB



Ziftomenib demonstrates an encouraging safety profile and tolerability

- Reported events most often consistent with features and manifestations of underlying disease
 - No evidence of drug-induced QTc prolongation
 - Differentiation syndrome, an on-target effect, manageable with mitigation strategy

Clinical activity of ziftomenib monotherapy is optimal at the 600 mg daily dose

- Positive NPM1-m benefit/risk balance with pronounced activity and 30% CR rate (n=20)
- High levels of ziftomenib tissue penetration likely drive clearance of extramedullary disease

Monotherapy data supportive of combination strategies

- No predicted adverse drug-drug interactions
- Optimization of KMT2A-r benefit/risk planned via rational combination strategies, to maximize patients' time on treatment
- Oral, QD dosing allows for convenient administration and combination with standards of care



ZIFTOMENIB CLINICAL DEVELOPMENT PATH

DEVELOPMENT APPROACH	STUDY STARTUP	PHASE 1	REGISTRATION DIRECTED	TRIAL
MONOTHERAPY (Relapsed/refractory)	NPM1-mutant acute myeloid Non-NPM1-m/KMT2A-r AML KMT2A-rearranged ALL	leukemia (AML)		komet ACUTE LEUKEMIAS KURA KO-MEN-001
COMBINATION WITH VENETOCLAX + AZACYTIDINE (Relapsed/refractory, frontline)	NPM1-mutant AML KMT2A-rearranged AML			
COMBINATION WITH CYTARABINE + DAUNORUBICIN (7+3) (Frontline)	NPM1-mutant AML KMT2A-rearranged AML			KURA KO-MEN- <mark>007</mark>
COMBINATION WITH GILTERITINIB (Relapsed/refractory)	NPM1-mutant AML			
COMBINATION WITH FLAG-IDA (Relapsed/refractory)	NPM1-mutant AML KMT2A-rearranged AML			ACUTE LEUKEMIAS KURA KO-MEN-008
COMBINATION WITH IDAC/LDAC (Relapsed/refractory)	NPM1-mutant AML KMT2A-rearranged AML			
POST-TRANSPLANT MAINTENANCE	NPM1-mutant AML KMT2A-rearranged AML			
COMBINATION WITH FLA (Relapsed/refractory)	Pediatric AML & ALL			Investigator-sponsored studies
COMBINATION WITH BV-DAM (Frontline)	Pediatric ALL			

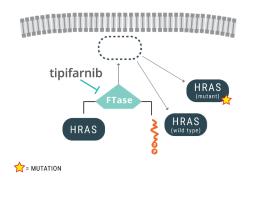


FARNESYL TRANSFERASE INHIBITOR PROGRAMS

EVOLUTION IN THE THERAPEUTIC APPLICATIONS OF FARNESYL TRANSFERASE INHIBITORS



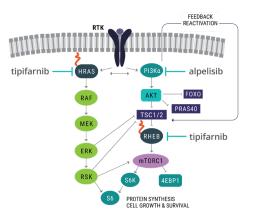




 Monotherapy activity in mutant tumors



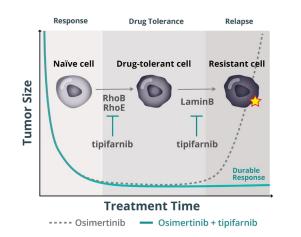
Overcoming Drug Resistance



Overcome drug resistance
 to PI3Ka inhibitor in HNSCC



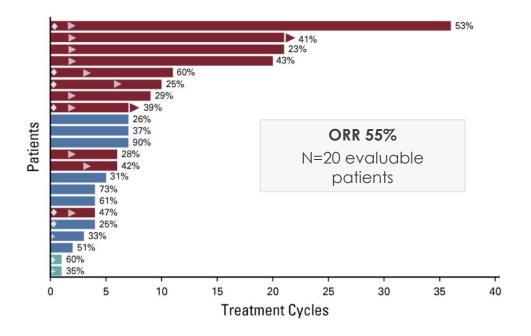
Preventing Emergence of Resistance



• Prevent emergence of resistance to EGFR inhibitor in NSCLC

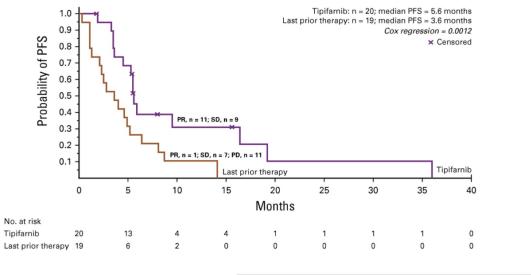


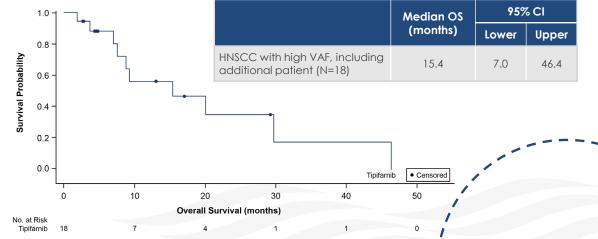
TIPIFARNIB DEMONSTRATES DURABLE ANTI-TUMOR ACTIVITY IN PATIENTS WITH RECURRENT OR METASTATIC HRAS-MUTANT HNSCC



Red, PR; blue, SD; green, not evaluable for efficacy; diamond, patient initiated treatment at 600 mg twice a day; cross, patient withdrew consent; arrow in bar, start of response; arrow, active treatment. Numbers at the end of the bars represent VAF for each patient.

Ho, et al. J Clin Oncol. 2021 June 10;39(17):1856-1864. doi: 10.1200/JCO.20.02903. Ho et al. ASCO 2020 #6504 (preliminary exploratory data as of 9/30/19) Efficacy-evaluable patients with HRAS mutant variant allele frequency (VAF) \geq 20% and serum albumin \geq 3.5 g/dL, or HRAS VAF \geq 35% One patient treated off-protocol through compassionate use







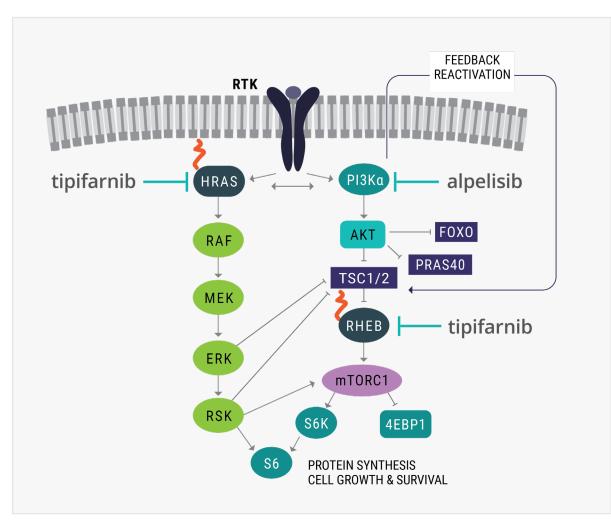
AIM-HN: REGISTRATION-DIRECTED TRIAL OF TIPIFARNIB



- Tipifarnib granted Breakthrough Therapy Designation for the treatment of patients with HRASmutant HNSCC based on data from RUN-HN study
- AIM-HN is a global, multi-center, registration-directed trial in patients with recurrent or metastatic HNSCC after one prior line of platinum therapy
- Evidence of meaningful clinical activity observed in AIM-HN; however, trial closed to further enrollment due to significant feasibility challenges
- Currently evaluating clinical data from RUN-HN and AIM-HN to inform future development of the program
- Given significant overlap between patients with HRAS overexpression and mutation, HRAS-mutant HNSCC patients in the U.S. may be eligible to enroll in ongoing KURRENT-HN study

TIPIFARNIB HAS POTENTIAL TO OVERCOME RESISTANCE TO TREATMENT WITH PI3Ka INHIBITORS IN HNSCC





- The PI3K pathway is the most frequently activated pathway in HNSCC
 - ~30% of tumors harbor *PIK3CA* mutation or amplification
- Feedback reactivation of PI3K –mTOR signaling drives innate resistance to PI3K inhibitors
 - Necessitates development of rational combination strategies
- Tipifarnib blocks hyperactivated growth factor signaling via multiple farnesylation-dependent proteins, including HRAS and RHEB

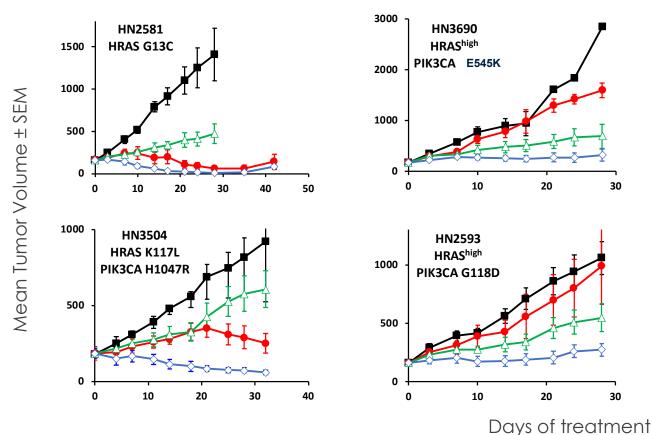
COMBINATIONS OF TIPIFARNIB AND PI3Ka INHIBITOR DEMONSTRATE ROBUST ACTIVITY IN HNSCC PDX MODELS

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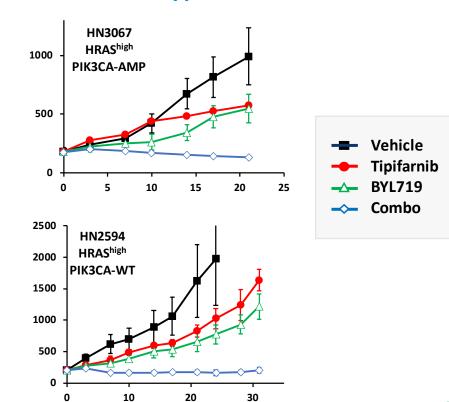
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PIK3CA-mutant

HRAS-mutant



Wild-Type



Malik et al. EORTC-NCI-AACR 2020 #159

Tipifarnib used at reduced dose to simulate potential lower doses in combination ($80 \rightarrow 60$ mg/kg BID) BYL-719 used at reduced dose to simulate potential lower doses in combination ($60 \rightarrow 40$ mg/kg QD)

COMBINATION OF TIPIFARNIB AND PI3Ka INHIBITOR HAS SIGNIFICANT THERAPEUTIC POTENTIAL IN HNSCC



- HRAS-MAPK and PI3K-mTOR are complementary pathways in HNSCC
 - Overexpression of WT HRAS reported to induce resistance to PI3Ka inhibition
 - HRAS is reported to preferentially activate PI3K (vs. KRAS; vs. MAPK)
- HRAS mutation/overexpression and PIK3CA mutations/amplifications account for up to 45% of HNSCC¹
 - PIK3CA mutations/amplification: 30-40% (25% estimated overlap with HRAS-overexpressing tumors)
 - HRAS overexpression: 20-30%
 - HRAS mutations: 4-8% (83% overexpress HRAS)
- Preclinical data is supportive of the combination; enhanced activity observed in both HRASmutant/overexpressed and PIK3CA-mutant/amplified populations of HNSCC
- Preliminary clinical data demonstrate that tipifarnib plus alpelisib can induce a durable clinical response in PIK3CA-dependent HNSCC¹

KURRENT-HN: PHASE 1/2 COMBINATION TRIAL OF TIPIFARNIB AND ALPELISIB IN PATIENTS WITH HNSCC

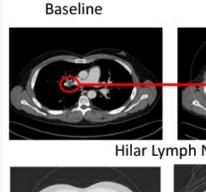


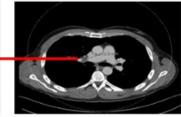


- Clinical collaboration to evaluate tipifarnib in combination with alpelisib for the treatment of patients with HNSCC whose tumors have HRAS overexpression and/or PIK3CA mutation and/or amplification
- Under the collaboration, Kura sponsors the trial and supplies tipifarnib and Novartis supplies alpelisib
- Enrolling patients in PIK3CA-dependent and HRAS-overexpression cohorts

DURABLE CLINICAL RESPONSE OBSERVED IN PATIENT WITH PIK3Ca - DEPENDENT HNSCC

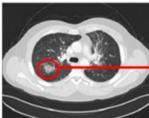






Week 20

Hilar Lymph Node





Right Middle Lobe Lung





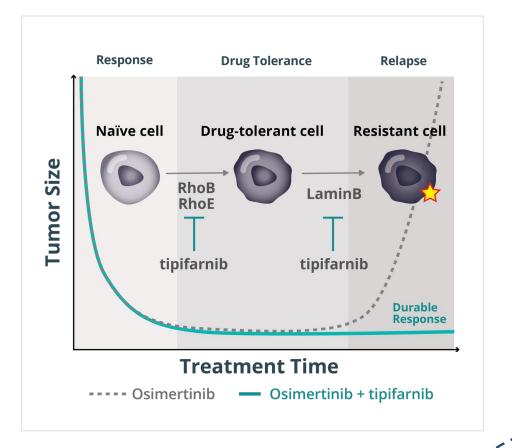
Right Upper Lobe Lung

- 35yo, male, nonsmoker, HPV16 positive
- SCC of tonsil Stage III cT4N2M0; PD-L1 CPS = 60
- Prior Treatments
 - CDDP/rad for 1 mo (Nov-Dec2019), BOR UNK
 - Cemiplimab/ISA101b (Jun-Nov2021), BOR PD
- PIK3Ca R88Q mutation (44%) and HRAS OE (3+ staining in 100%) of tumor cells) by IHC from May 2021 biopsy
- DL1 tipifarnib, DL2 alpelisib; completed 6 cycles •
- G1/2 TRAE, G3 lipase elevation; presented clinical benefit and • improvement in respiratory symptoms
- 81% reduction in target lesions after 1 cycle of treatment
- 84% reduction in target lesions after 3 cycles (BOR)
- Continued on-study for >27 weeks maintaining QoL

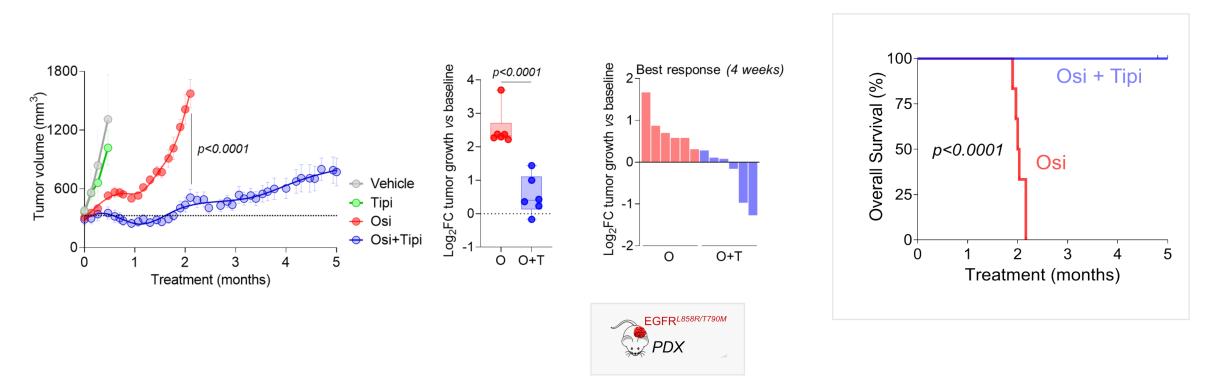
TIPIFARNIB PREVENTS EMERGENCE OF RESISTANCE TO OSIMERTINIB IN VIVO

R

- Drug-tolerant cells (DTCs) arise within days of osimertinib exposure
- DTCs are characterized by Rho pathway activation
- RhoB, RhoE and LaminB are farnesylationdependent proteins that are selectively upregulated in DTCs
- Genetic or pharmacologic inhibition of these targets kills DTCs and prevents the emergence of osimertinib-resistant mutant cells
- Combination of tipifarnib and osimertinib delays
 relapse in vivo



TIPIFARNIB PREVENTS EMERGENCE OF RESISTANCE TO OSIMERTINIB IN VIVO



 Preclinical data generated through a collaboration with INSERM (the French National Institute of Health and Medical Research), suggest the potential to prevent emergence of resistance to EGFR inhibitor, osimertinib

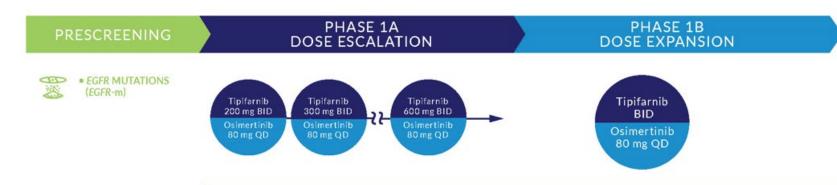
Figarol et al. AACR 2022 #7934







TIPIFARNIB PREVENTS EMERGENCE OF RESISTANCE TO OSIMERTINIB IN VIVO



KURRENT-LUNG TRIAL OBJECTIVES

combination

Primary objectives

Secondary objectives

Pharmacokinetics

of response

Overall response rate
Duration of response

· Progression-free survival

Characterize safety profile of tipifarnib/osimertinib

· Evaluation of circulating tumor DNA as an indicator

· Safety and tolerability per NCI CTCAE v5.0

Evaluate safety/tolerability of tipifarnib/osimertinib combination

Primary objectives

- Recommendation for phase 2 dose (RP2D) of tipifarnib in combination with osimertinib
- Characterization of the safety of the combination (DLTs) per NCI CTCAE v5.0

Secondary objectives

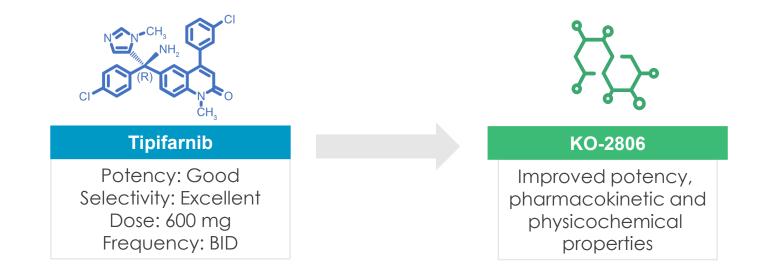
- · Overall response rate
- Duration of response
- Progression-free survival
- Pharmacokinetics
- · Evaluation of circulating tumor DNA as an indicator of response

Phase 1 clinical trial of tipifarnib and osimertinib in patients with treatmentnaïve, locally advanced, or metastatic EGFR-Mutant NSCLC

ORR = overall response rate; DOR – duration of response; PFS = progression-free survival



KO-2806 nominated as development candidate for IND-enabling studies



- FTIs represent an attractive therapeutic target and commercial franchise in oncology with compelling opportunities in combination with other targeted therapies
- Goal is to develop a next-generation FTI with improved potency, pharmacokinetic and physicochemical properties
- IND-enabling studies ongoing; on track for IND application acceptance for KO-2806 in Q1 2023

FORECASTED MILESTONES & FINANCIAL HIGHLIGHTS



PROGRAM	MILESTONE	ESTIMATED TIME OF ACHIEVEMENT
	Dose first patient in Phase 2 registration-directed portion of KOMET-001	Q1 2023
ZIFTOMENIB (KO-539) Menin Inhibitor	Dose first patient in KOMET-007 (venetoclax+azacitidine, 7+3)	1H 2023
	Dose first patient in KOMET-008 (gilteritinib, FLAG-IDA, IDAC/LDAC)	2H 2023
TIPIFARNIB	Dose first patient in KURRENT-LUNG study (osimertinib)	1H 2023
Farnesyl Transferase Inhibitor (FTI)	Determine OBAD* for PIK3CA cohort in KURRENT-HN study (alpelisib)	Mid-2023
KO-2806 Next-Generation FTI	Acceptance of Investigational New Drug application	Q1 2023

Financial	\$438M in Cash as of December 31, 2022**	
Highlights* Nasdaq: KURA	Shares outstanding: 68.3M basic; 9.3M options, RSU's & warrants	

* Optimal biologically active dose

** Unaudited, preliminary cash, cash equivalents and short-term investments as of 12/31/2022



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Corporate Presentation – January 2023