

## **INVENTING NEW MEDICINES**

WITH TARGETED PROTEIN DEGRADATION



## **Forward-looking Statements**

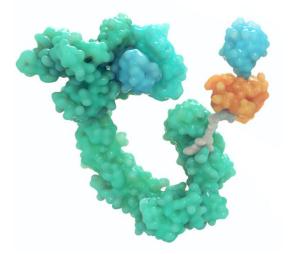
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## Introduction to Kymera

## KYMERA

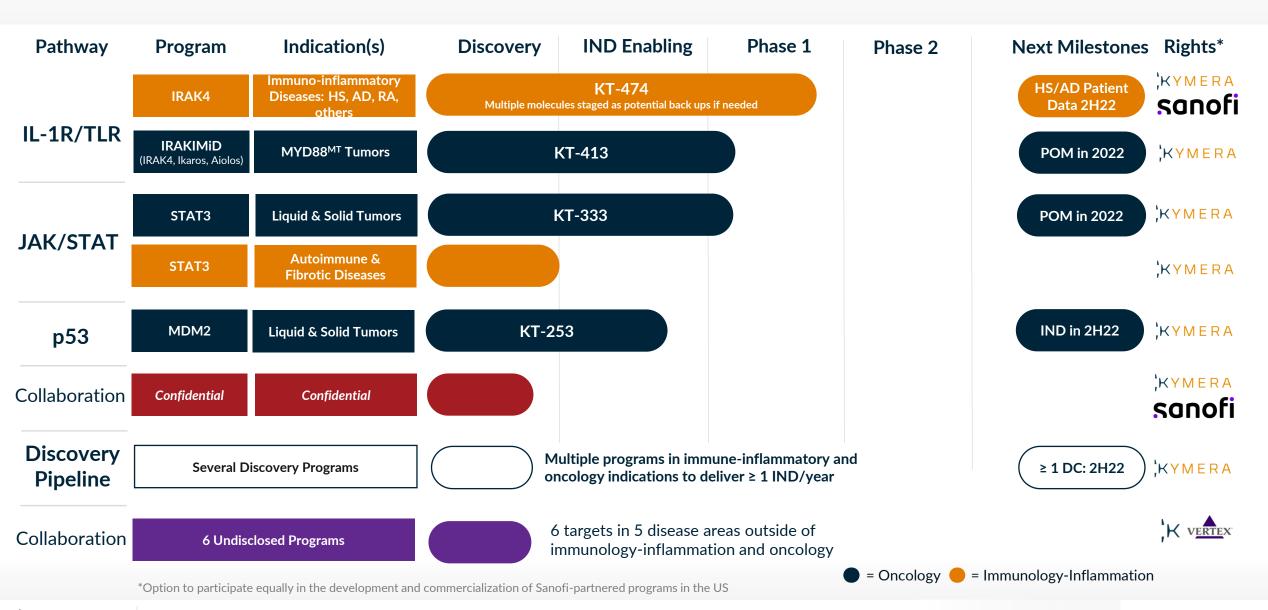


#### **OUR VISION**

To be a disease- and technologyagnostic, fully integrated global biopharmaceutical company, using targeted protein degradation to deliver medicines that will transform patients' lives

- Leader in Targeted Protein Degradation (TPD)
- Building a fully-integrated, global biotech company
- Initial focus in Immunology/Inflammation and Oncology, but already a disease-agnostic platform
- Accelerating forward integration through key strategic partnerships
- Executed many "firsts" for TPD with initial clinical programs
- Three clinical stage programs and a deep pipeline positioned to deliver ≥1 IND/year
- Focused on continued innovation in platform and discovery
- Well capitalized with \$523 million of cash as of 3/31/22

## **Kymera's Pipeline of Novel Protein Degraders**



KYMERA

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## **How We Select Our Targets**

## Drug Development Philosophy



Unmet Medical Need



Validated Biology



Undrugged Node



Precision Medicine Approach

### **Target Types**





Clinically Validated
Targets Enabled by E3
Ligase <u>Tissue</u> Restricted
Expression

### **Therapeutic Profile**

#### Oncology:

- Clear patient stratification
- Clear single agent activity with potential for expansion with combos
- Multiple addressable unmet needs

#### Immunology:

- Address key unmet needs providing game changing oral therapies
- Key validated signaling pathways with clear degrader advantage

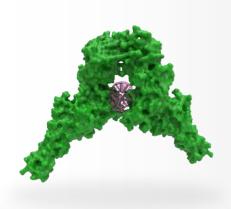
#### **Other Disease Areas:**

- Enabled by E3 ligase differential expression
- Key insights from biology and technology expansion
- Some areas enabled by collaborations

## **Kymera's Differentiated Approach to TPD**

## TARGET SELECTION

Unique approach focused on undrugged or not fully drugged targets with broad indication potentials



### **PLATFORM**

Significantly differentiated investments



Tissueselective E3 Ligases

Enabling a whole new generation of clinical programs



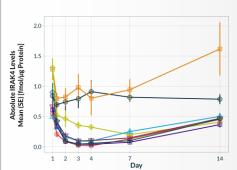
New Molecular Glue Approach

Novel strategy to address undrugged/ un-ligandable targets

### **CLINICAL**

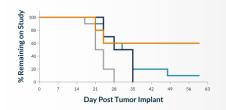
Innovative clinical trial designs for degrader development





## TPD "FIRSTS"

Kymera has accomplished several "firsts" in TPD



#### KT-474/ IRAK4

FIRST randomized, placebocontrolled trial in healthy volunteers

#### KT-333/ STAT3

FIRST
Heterobifunctional
degrader
against an
undrugged
transcription
factor in clinic

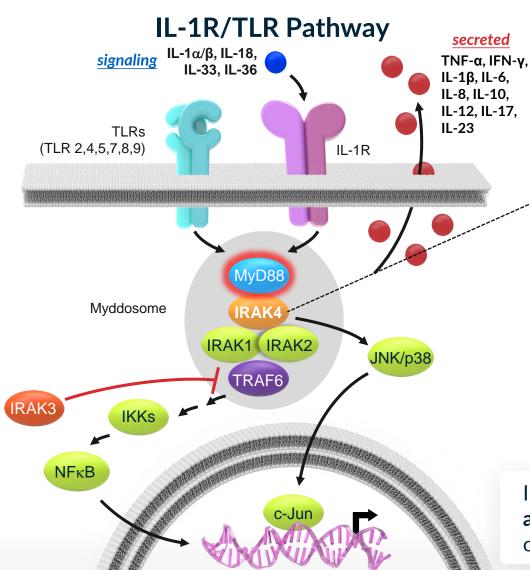
#### **INNOVATION**

Serious commitment to constant evolution of our science

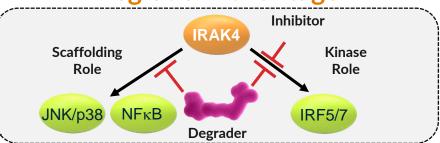




## Degrading IRAK4: Best Approach to Block IL-1R/TLR driven Inflammation



**Degrader Advantage** 



#### **Clinical Pathway Validation**

IL- $1\alpha$ /IL- $1\beta$ : Rheumatoid Arthritis, CAPS, Hidradenitis Suppurativa

**IL-1α:** Atopic Dermatitis

**IL-1β:** Gout; CANTOS Outcomes Data in Atherosclerosis and Lung Cancer

**IL-18:** Macrophage Activation Syndrome

IL-36: Generalized Pustular Psoriasis, Atopic Dermatitis

**IRAK4 SMI**: Rheumatoid Arthritis

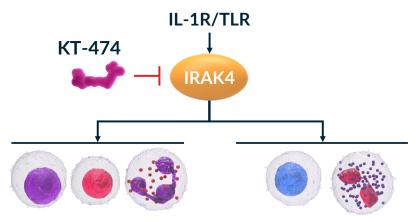
#### **Human Genetics**

Adult humans with IRAK4 Null Mutation are healthy

IRAK4 degrader has potential to achieve a **broad**, **well-tolerated anti-inflammatory effect**, providing multiple development opportunities in autoimmune inflammatory diseases

### Potential Best-in-class Oral Small Molecule Mechanism in I/I

Potential for Broad Activity Across Th1-Th17 and Th2 Diseases



#### Th1-Th17/Neutrophils

- Hidradenitis Suppurativa
- Rheumatoid Arthritis
- Lupus
- IBD
- Gout
- Psoriasis

#### Th2/Eosinophils

- Atopic Dermatitis
- Asthma
- COPD
- CRSwNP

\$ 1	.5	0	B

## Combined global drug sales

Source: EvaluatePharma; GlobalData; Dash. Allied Market Research. 2021; Koto. Modern Rheumatology. 2021; Ahn. JAMA Otolaryngol Head Neck Surg. 2016; UC: Ulcerative Colitis; CD: Crohn's Disease.

Indication	2021 Prevalence US/EU5/JP	2021 Global Sales
AD	~82.5 M	\$5,760 M
HS	~785 K	\$1,106 M
RA	~385 K	\$27,634 M
SLE	~580 K	\$1,333 M
IBD	~3.2 M	\$21,710 M
Gout	~18.2 M	\$1,319 M
Psoriasis	~15.8 M	\$23,268 M
Asthma	~87.3 M	\$15,664 M
COPD	~61.7 M	\$9,960 M
CRSwNP	~20.4 M	\$2,622 M

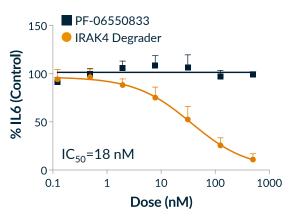
#### **Limitations of Current Therapies**

- Anti-Cytokine/Cytokine Receptor Antibodies
  - Target only 1-2 cytokines
  - Require injection
- Small Molecule Inhibitors
  - Limited pathway blockade (IRAK4 SMI)
  - Safety issues (JAK family)

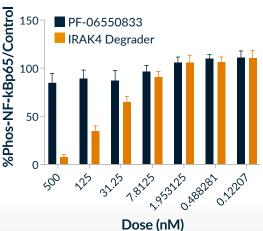
## Scaffolding Function of IRAK4 is Critical for Pathway Signaling

## IRAK4 Scaffolding Function, not Kinase Activity, is Required for TLR9-mediated Activation of NF-kB in Human B cells

#### B Cell CpG-B→IL-6

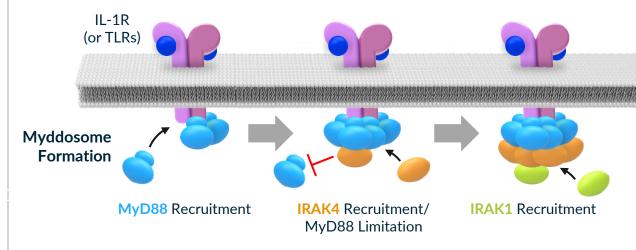


 IRAK4 degradation leads to inhibition of TLR9/CpG-B induced phos-p65 and IL-6

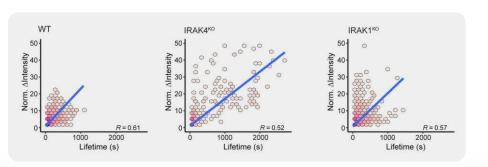


 CpG-B; monomeric and engages TLR9 in the late endosome/ lysosome, resulting in downstream signaling that include NF-kB (not through IRF)

## IRAK4 Scaffolding Role Functions to Limit MYD88 Oligomer Size and Trigger Myddosome Formation



- IRAK4 caps the oligomer size of MYD88 to trigger myddosome formation
- Macromolecular assembly of proteins in itself can be considered a signal transduction step

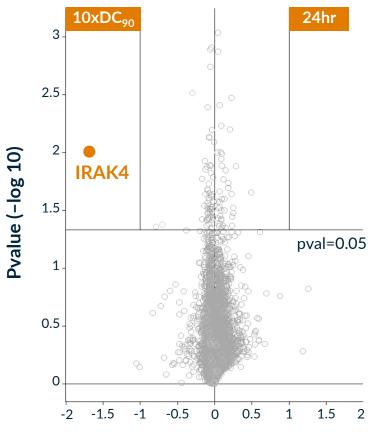


Source: Deliz-Aguirre, et al. J. Cell Biol., 2021



# KT-474: Potent and Specific IRAK4 Degradation with Impact on Cytokines Superior to Kinase Inhibition

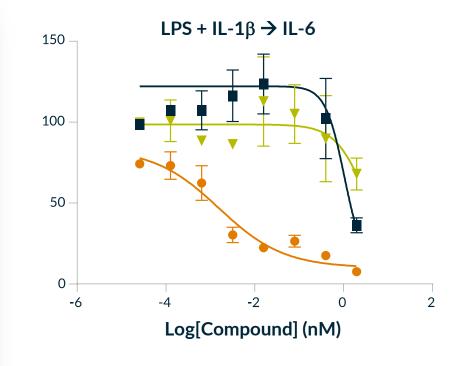
#### **Degradation and Selectivity**



Protein Level Fold Change (log2)

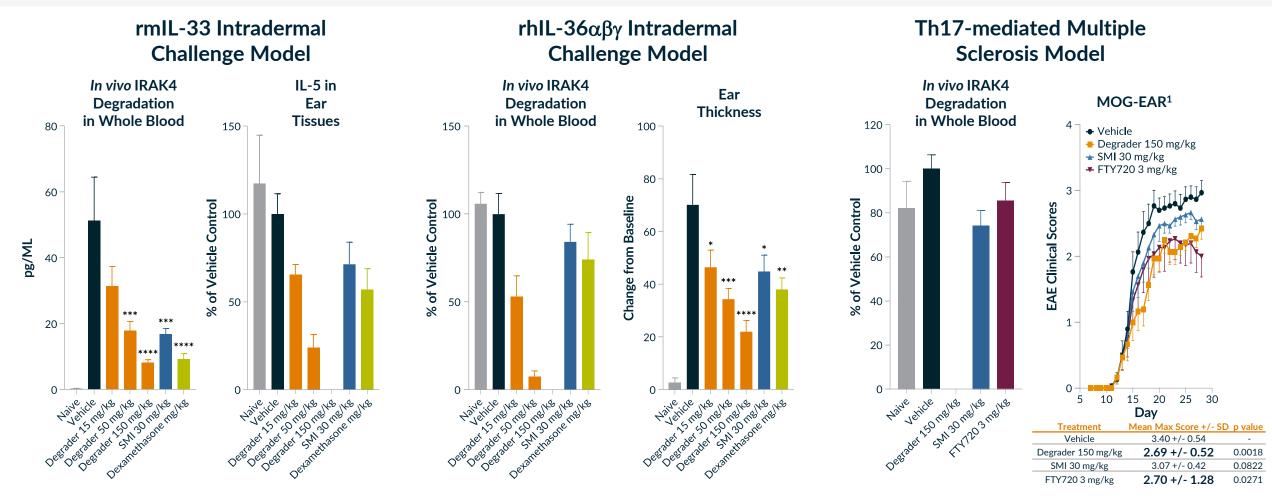
- KT-474 DC<sub>50</sub> = 2.1 nM in human immune cells
- KT-474 only degraded IRAK4 in human immune cells at concentration 10fold above the DC<sub>90</sub>
- KT-474 better able to inhibit IL-6 under both LPS and LPS + IL-1β than clinically active IRAK4 SM kinase inhibitor PF-06550833

#### **Superiority over SM kinase Inhibitor**



Legend	Compound	IL-6 IC <sub>50</sub> (nM)
-	IRAK4 Degrader	0.8
-	Negative control	450
	IRAK4 SMI (PF-06550833)	N/A
-	IRAK4 SMI (PF-06550833)	N/A

# KT-474 is Superior to IRAK4 Small Molecule Inhibitor (SMI) Across Multiple Preclinical Immune-inflammatory *In Vivo* Models



IRAK4 knockdown of ≥85% in whole blood achieved anti-inflammatory effect comparable to potent corticosteroids or approved standard of care drugs in these models as well as in models of TLR4 (MSU-Gout) or TLR7/8 (Imiguimod-Psoriasis) activation that was superior to IRAK4 small molecule inhibitor

1. Myelin Oligodendrocyte Glycoprotein-induced Experimental Autoimmune Encephalomyelitis (MOG-EAR) Model

## KT-474 Updated Phase 1 Includes a 28 Day Patient Study

Double-blind, Placebo-controlled SAD and MAD in HV; Open Label Patient Cohort in HS & AD Patients

new

#### Parts A & B

Healthy Volunteers SAD and MAD

#### 7 SAD cohorts

- 8 subjects per cohort (6:2 randomization)
- 57 adult healthy subjects dosed Single dose (25-1600 mg)

#### 4 MAD cohorts

- 12 subjects per cohort (9:3 randomization)
- 48 adult healthy subjects dosed 14x daily doses (25-200 mg)

#### **Primary**

Safety & tolerability

#### Secondary/ Exploratory

- Pharmacokinetic measures (half-life, bioavailability)
- IRAK4 knockdown in PBMC and skin (MAD only)
- Ex vivo response of whole blood to TLR agonists (SAD & MAD)

### Part C

**HS and AD Patients** 

#### 1 cohort

Up to 20 HS and AD patients

Dose equiv. of 100 mg (fed state)

Open-label

28x daily doses

new

#### **Primary**

Secondary/ Exploratory

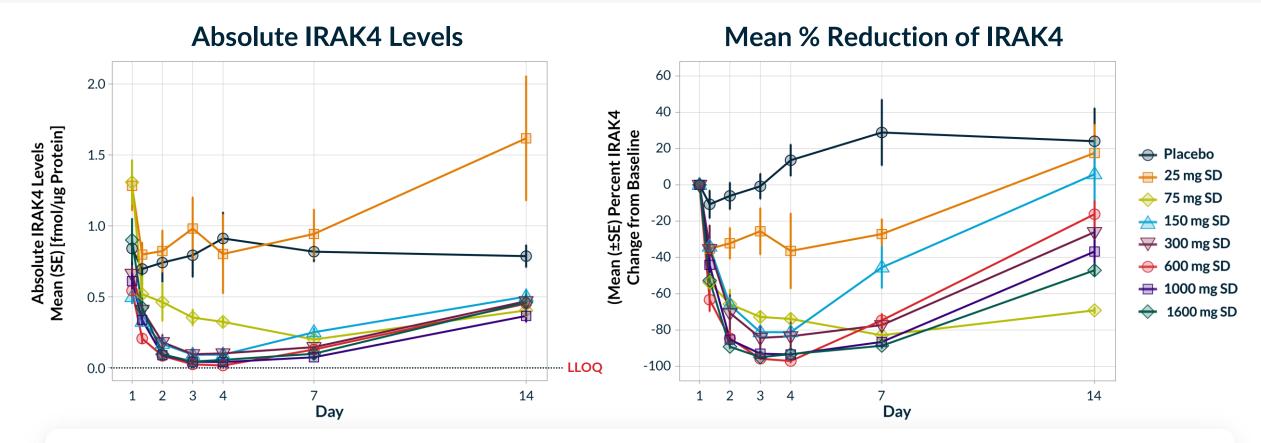
- Safety & tolerability
  - Pharmacokinetic measures (half-life, bioavailability)
- IRAK4 knockdown in PBMC and skin
- Change in systemic inflammatory biomarkers and proinflammatory gene transcripts in skin
- Ex vivo response of whole blood to TLR agonists
- Clinical endpoints: EASI (AD), Total AN Count (HS), symptom scores and global assessments

new

## SAD/MAD Enrollment Status and Demographics

	SAD 1-7 (n=57)	MAD 1-4 (n=48)
Gender		
Female	29	9
Male	28	39
Median age, years (range)	38.0 (20-55)	37.5 (20-55)
Ethnicity		
<ul> <li>Hispanic or Latino</li> </ul>	42	34
<ul> <li>Black or African American</li> </ul>	8	8
<ul> <li>Non-Hispanic or Latino- White</li> </ul>	5	6
<ul> <li>Asian</li> </ul>	2	0

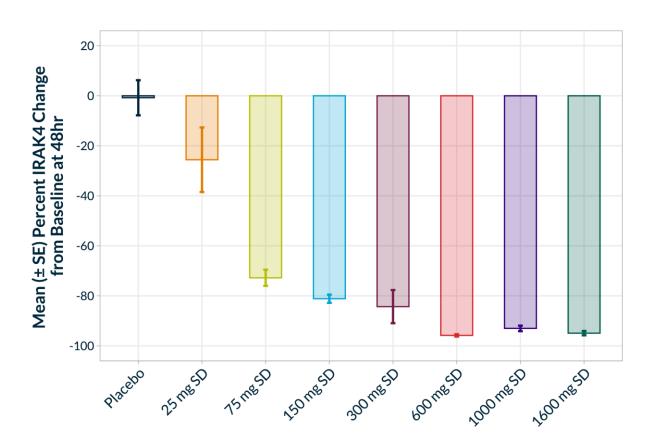
## KT-474 Achieved Deep and Dose-Dependent IRAK4 Degradation after Single Oral Doses that Lasted for at Least 6 Days



- Detected by Mass Spectrometry in circulating PBMC
- IRAK4 levels nadired at 48-72 hours (Day 3-4)
- IRAK4 reduction lasted for at least 6 days post-dose in all dose groups
- SAD 5 through 7 approached or exceeded Lower Limit of Quantitation (LLOQ)

## KT-474 Achieved >95% IRAK4 Degradation After Single Dose

#### Percent IRAK4 Reduction in PBMC at 48 Hours Post-Dose Using Mass Spectrometry

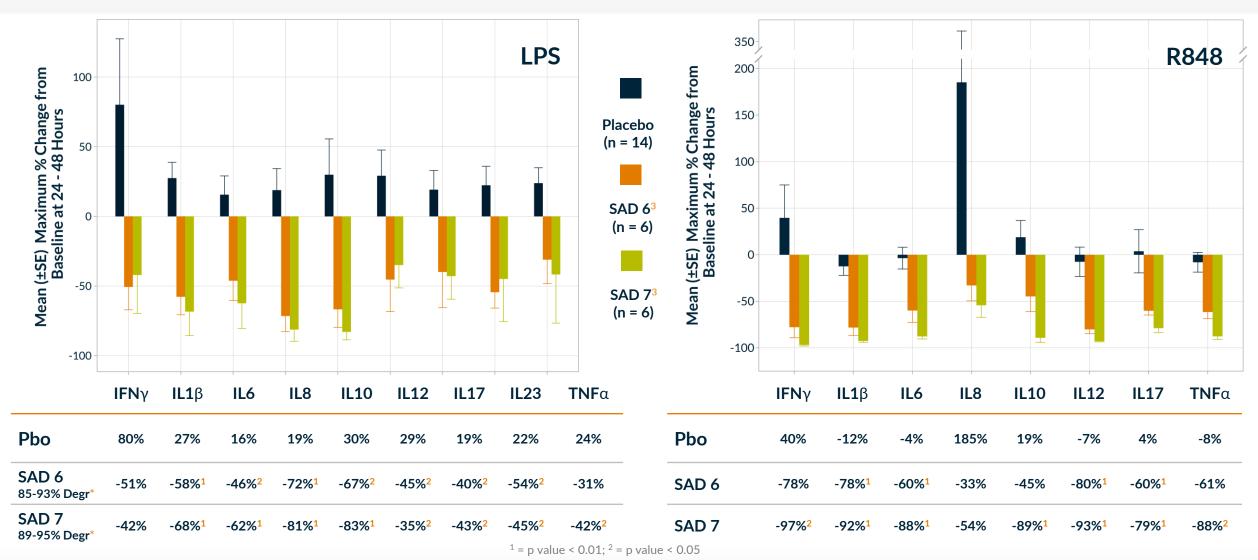


	N	Mean IRAK4 Change	Median IRAK4 Change	p value
Placebo	13	-1%	-2%	
25 mg	6	-26%	-39%	0.1
75 mg	6	-73%	-75%	<0.0001
150 mg	6	-81%	-82%	<0.0001
300 mg	6	-84%	-89%	<0.0001
600 mg	7	-96%	-96%	<0.0001
1000 mg	5	-93%	-94%	<0.0001
1600 mg	6	-95%	-95%	<0.0001

<sup>\*</sup> p-values relative to placebo

## **Broad and Deep Inhibition of Disease Relevant Cytokines**

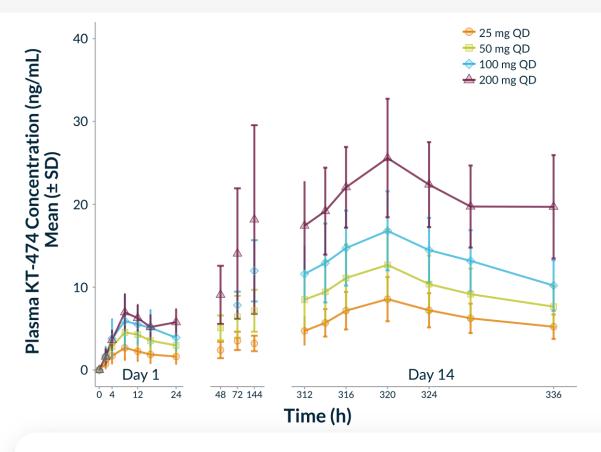
Effect Against LPS (TLR4)- or R848 (TLR7/8)-Stimulated Cytokine Induction in Whole Blood



<sup>\*</sup>Mean IRAK4 degradation in PBMC at 24-48h

<sup>3</sup>Ex vivo cytokine assay was performed at 48h nadir (maximal degradation) only in cohorts 6-7

## MAD Study: Once Daily Dosing Resulted in High Steady-State Exposures



#### **Steady-State (Day 14) PK Parameters**

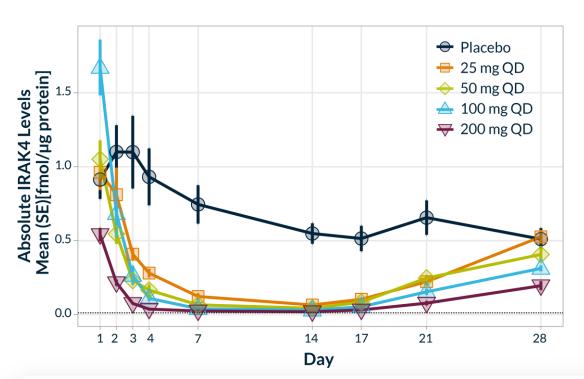
PK Parameter	25 mg QD (n = 9)	50 mg QD (n = 9)	100 mg QD (n = 9)	200 mg QD (n = 9)
C <sub>max</sub> (ng/mL)	8.20 (34.5)	12.0 (39.1)	16.1 (32.0)	25.2 (26.7)
t <sub>max</sub> (h) <sup>a</sup>	8.00 (4.0 - 8.0)	8.00 (8.0 - 8.0)	8.00 (8.0 - 12)	8.00 (8.0 - 12)
AUC <sub>24</sub> (ng*h/mL)	153 (30.8)	224 (39.4)	314 (29.9)	498 (24.0)
C <sub>trough</sub> (ng/mL)	5.03 (30.3)	7.28 (35.1)	9.81 (30.1)	18.8 (32.6)
Day 14/1 Ratio <sub>Cmax</sub>	3.73 (47.1)	2.64 (26.3)	2.92 (37.7)	3.51 (34.7)
Day 14/1 Ratio <sub>AUC</sub>	4.01 (41.2)	2.97 (23.2)	3.29 (38.9)	4.22 (28.8)

Geometric Mean (%CV) reported for all parameters, except  $t_{max}$  where median(range) are presented Accumulation Ratio represents fold change in exposure from Day 1 to Day 14

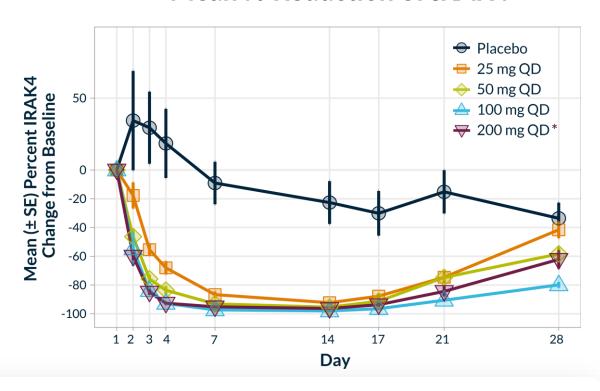
- High steady-state exposures with QD dosing, 3- to 4-fold increase in exposure on Day 14
  - Day 14 Ctrough in range where >90% IRAK4 degradation is expected
- Steady-state reached by Day 7 of dosing

# KT-474 Achieved Robust and Sustained IRAK4 Degradation with Multiple Daily Oral Doses (14 Days)

#### **Absolute IRAK4 Levels**



#### Mean % Reduction of IRAK4

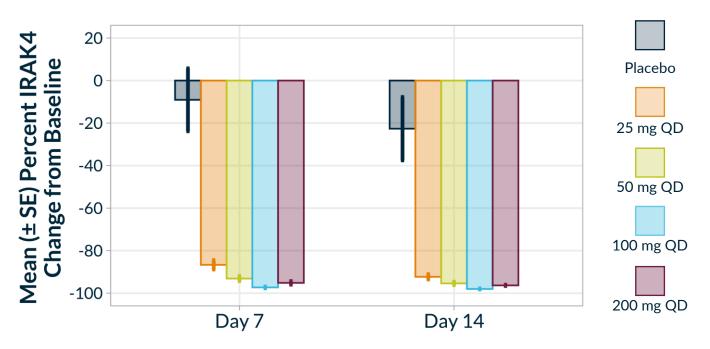


- Detected by mass spectrometry in circulating PBMC
- Steady state IRAK4 reduction achieved between Days 7 and 14
- Recovery towards baseline by Day 28 (2 weeks after last dose)
- MAD 2 through 4 approached Lower Limit of Quantitation (LLOQ)

## Lower Daily Doses of KT-474 Achieved >98% IRAK4 Degradation (MS)

Plateau in IRAK4 Reduction after 14 days in PBMC after 100 mg

#### Percent IRAK4 Reduction in PBMC by Mass Spectrometry

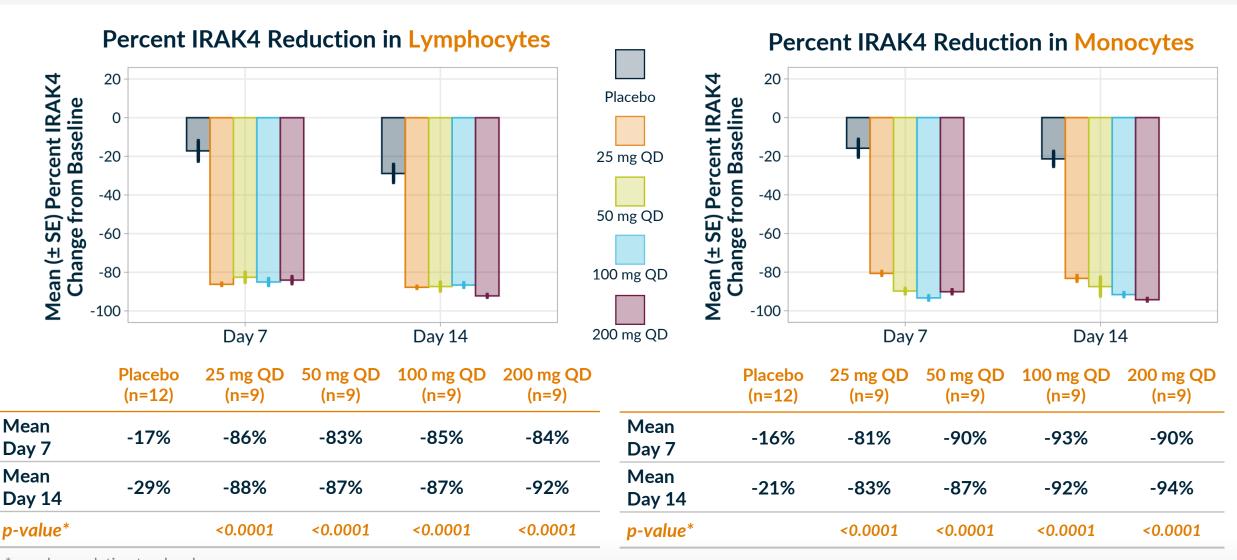


	Placebo (n=12)	25 mg QD (n=9)	50 mg QD (n=9)	100 mg QD (n=9)	200 mg QD (n=9)
Mean Day 7	-9%	-87%	-93%	-97%	-95%
Mean Day 14	-23%	-92%	-95%	-98%	-96%
p value*		<0.0001	<0.0001	<0.0001	<0.0001

<sup>\*</sup> p-values relative to placebo

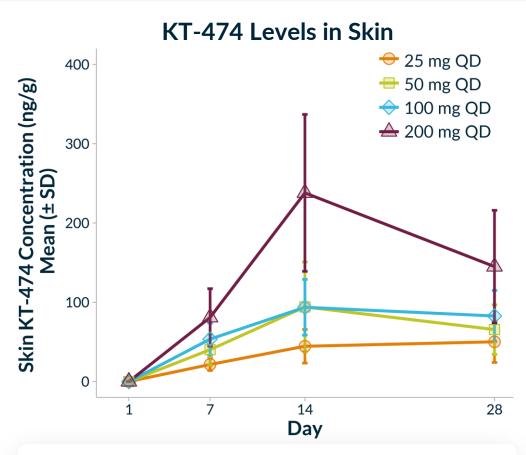
## KT-474 Achieved >90% Degradation in Monocytes at ≥ 100 mg (FLOW)

Maximal Degradation in Monocytes in MAD4/200mg at Day 14



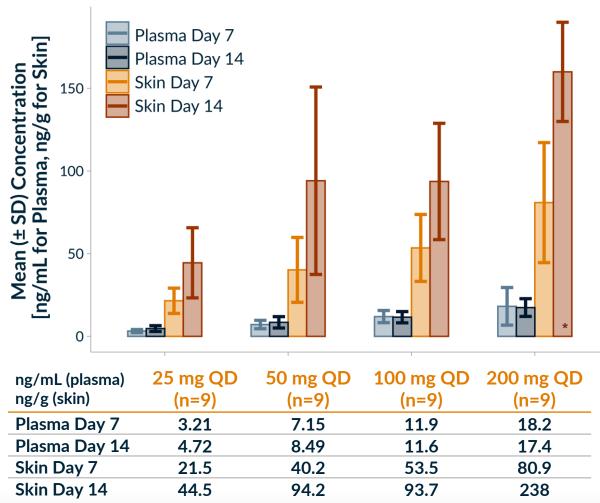
<sup>\*</sup> p-values relative to placebo

## Once Daily Dosing Resulted in High Skin Exposures Exceeding Plasma



- Increasing exposures through Day 14
- C<sub>trough</sub> levels in skin ~10-14 fold higher than plasma on Day 14

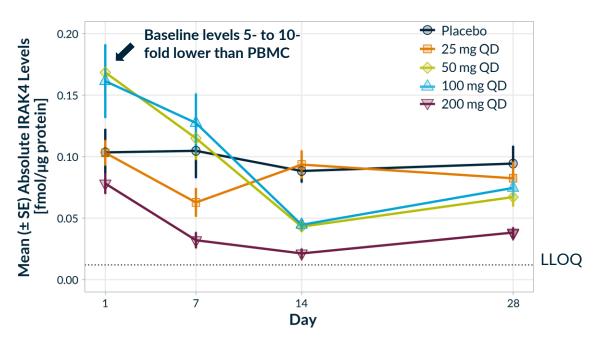
#### Substantially Larger Skin vs Plasma Exposures at Ctrough

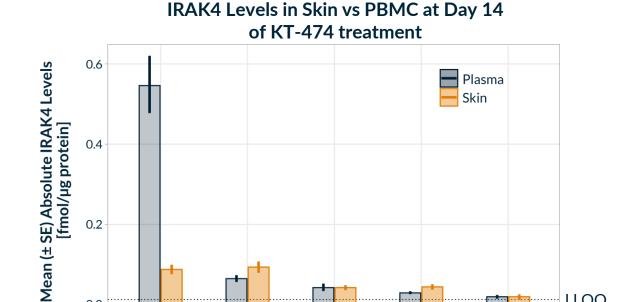


C<sub>trough</sub> concentrations shown for Days 1, 7 and 14.

## KT-474 Reduced IRAK4 to Near LLOQ in the Skin (MS)







50 mg QD

100 mg QD

Placebo

25 mg QD

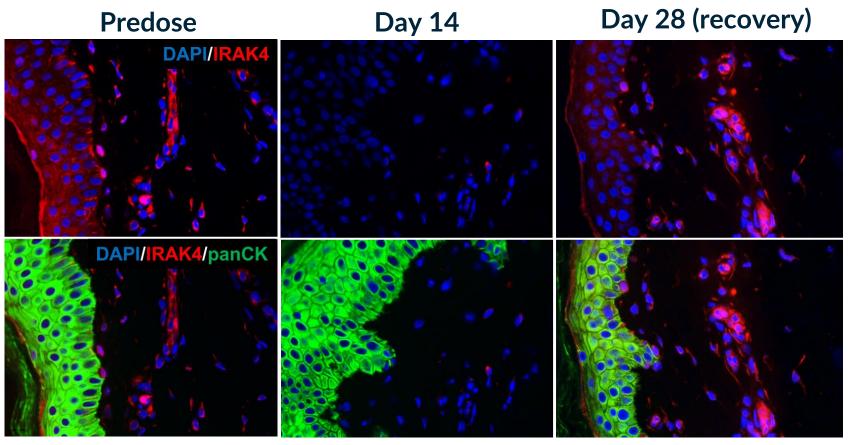
- Baseline IRAK4 levels in skin substantially lower compared to PBMC
- Dose-dependent IRAK4 degradation in skin by mass spectrometry
- Steady-state not yet reached at day 14
- Mean IRAK4 levels at 200 mg dose nearing LLOQ by Day 14, with knockdown up to 90% at 200 mg
- Comparable degradation in PBMC shows that effect of KT-474 is independent of baseline expression level

LLOO

200 mg QD

## Substantial IRAK4 Degradation in Skin Observed in Dermis and Epidermis

IRAK4 = Red

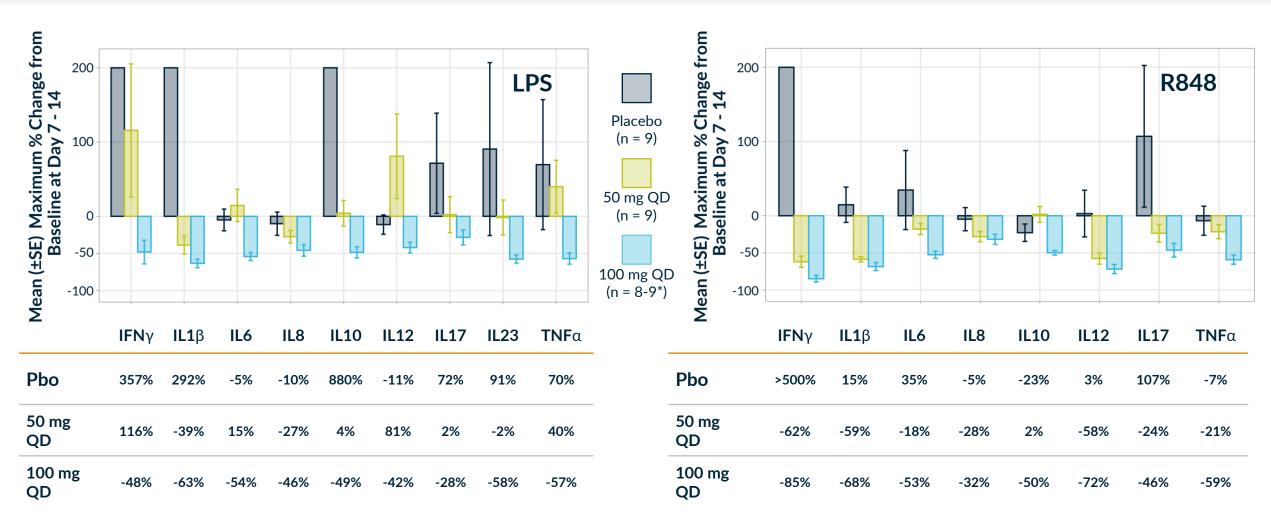


Pan cytokeratin (panCK) is used as the epidermal marker

Representative images from subject in 50 mg cohort

## Ex Vivo Inhibition of 9 Disease-Relevant Cytokines, Day 7-14

Results through MAD3 Showed Dose-Dependent Effect Tracking with Extent of Monocyte IRAK4 Degradation



50 mg QD: 93-95% PBMC degradation at Day 7-10; 87-90% Monocyte degradation at Day 7-14 100 mg QD: 97-98% PBMC degradation at Day 7-10; 92-93% Monocyte degradation at Day 7-14

\*n=8 for LPS, n=9 for R848

Mean values > 200% have been replaced by 200 for visualization purposes

# KT-474 Demonstrates Broadest Anti-inflammatory Effect Compared to Other Clinical Agents

Inhibition of Ex Vivo Disease Relevant Cytokine/Chemokine Stimulation by Anti-Inflammatory Agents in Ph1 Studies

Agent/Stimulus	<b>Target</b>	IFNγ	TNFα	IL-1β	IL-6	IL-8	IL-17	IL-12	IL-23	IL-10
KT-474/LPS	IRAK4 (degrader)	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>
KT-474/R848	IRAK4 (degrader)	✓	<b>√</b>	$\checkmark$	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>		<b>√</b>
CA-4948/R848	IRAK4* (inhibitor)				<b>√</b>					
GS-5718/R848	IRAK4 (inhibitor)		<b>√</b>							
ATI-450/LPS	MK2		<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>				
ATI-450/IL-1β	MK2		<b>√</b>		<b>√</b>	<b>√</b>				
LY2775240/LPS	PDE4		<b>✓</b>							
Iberdomide/LPS	Ikaros/ Aiolos			<b>√</b>						
JNJ-61803534/ T cell activation	RORγ						<b>√</b>			

<sup>\*</sup> Non-selective

Iberdomide: Schafer PH, et al. Ann Rheum Dis 2018;77:1516–1523; LY2775240: Patel DR, et al. Clin Transl Sci. 2021;14:1037–1048; JNJ61803534: Xue X, et al. Sci Rep 2021;11:11066-80; MK2: Aclaris 2021 Company Overview; CA-4948: Booher RN, et al. ASH Annual Meeting 2018, Poster #4168; GS-5718: Roedder S, et al. ACR Convergence 2021, Poster #0185

## **KT-474 Safety Summary**

- Phase 1 Healthy Volunteer study enrolled 105 subjects
- KT-474 was generally well tolerated in all cohorts with no serious adverse events in the study.
- MAD Treatment Emerging Adverse Events (TEAEs) in 2 or more subjects possibly/probably drug related:
  - Headache (n=5), Palpitations (n=3), Nausea (n=2) in KT-474-treated subjects (total n=36)
    - TEAEs were mild, except two deemed moderate (1 Headache at 50 mg and 1 Palpitations at 200 mg dose levels)
  - No TEAEs in 2 or more Placebo-treated subjects (total n=12)
- A non-adverse, non-dose-dependent mean 10-20 msec prolongation of QTc was identified after multi-dosing in MAD, with QTc remaining <450 msec
- Profile, shared with FDA, supports advancement of KT-474 in further stages of development across immune-inflammatory diseases, starting with upcoming 28-day HS and AD patient cohort

## **KT-474 Phase 1 Healthy Volunteer Summary**

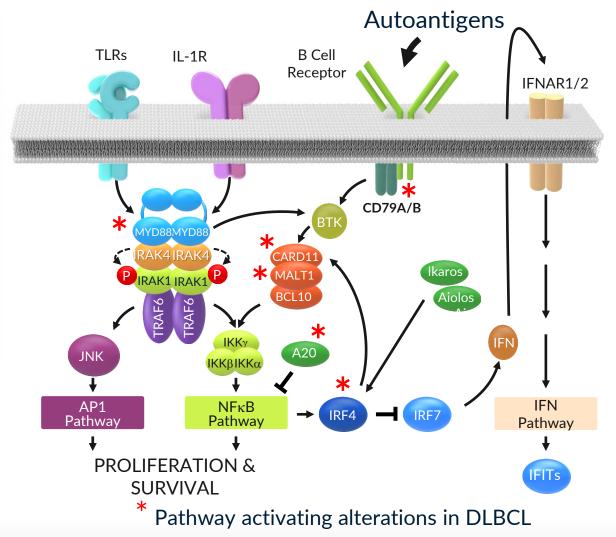
- Dose escalation completed for healthy volunteer portion of SAD and MAD portions of trial
- Proof of mechanism (POM) and proof of biology (POB) established in SAD, and at substantially lower doses in MAD
  - POM: IRAK4 degradation in blood and skin to near LLOQ of highly quantitative and sensitive mass spectrometry assay, with 95-98% mean IRAK4 reduction in blood at day 14 in top 3 MAD doses (50mg, 100mg, 200mg)
  - POB: Strong and broad inhibition of whole blood ex vivo disease relevant cytokine induction, with over 50% inhibition of up to 9 cytokines and maximum inhibition of 85% at 100 mg MAD dose
- Safety analysis of cohorts showed KT-474 to be safe and well-tolerated, with no serious adverse
  events
- Upcoming patient cohort study extended to 28 days to explore not only PK, PD and biomarker impact but also exploratory clinical efficacy endpoint in HS and AD patients.



# IRAKIMiDs are Potent Degraders of IRAK4 and IMiD Substrates Targeting Redundant Pro-survival Pathways in MYD88<sup>MT</sup> DLBCL

- Single-agent therapies that target activated NFKB signaling in DLBCL show limited activity in preclinical or clinical settings
- Redundant NFKB pathway activation and downregulation of Type 1 IFN is common in MYD88<sup>MT</sup> lymphoma, supporting need to seek combination therapies
- Targeting simultaneous degradation of IRAK4 and IMiD substrates Ikaros and Aiolos shows synergistic activity in MYD88<sup>MT</sup> models, supporting this targeted combination





Adapted from Yang et al. (2012) Cancer Cell 21, 6, pp723-737

### **IRAKIMiD: First Precision Medicine in MYD-88 Mutated Cancers**

MYD88-mutant DLBCL

Waldenström's Macroglobulinemia

Primary Central Nervous System Lymphoma Patient Impact<sup>1</sup>

~8k US ~37k ROW\*

~10k US

~26k ROW\*

per year

~3k US ~12k ROW\*

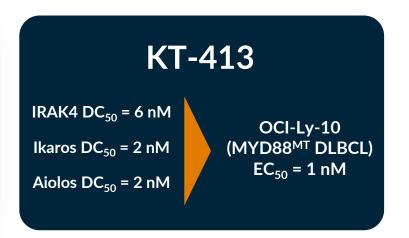
\*EU, UK, Japan, China

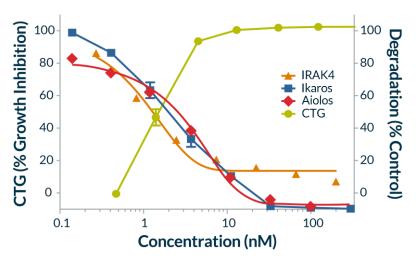
<sup>1</sup>Bionest

- MYD88 is mutated in ≥ 25% of DLBCL patients, the most common subtype of non-Hodgkin's lymphoma
- DLBCL **5-year survival rate is ~64%**, and MYD88 mutations are associated with poorer survival following frontline R-CHOP chemotherapy
- SOC in relapsed/refractory DLBCL, which includes CAR-T therapy, antibody drug conjugates (ADC), and anti-CD19 and CD20 compounds, are associated with ORR of 40-80%
- There are no treatments indicated specifically in MYD88 mutant DLBCL
- MYD88 is mutated in approximately 90% of Waldenström's macroglobulinemia (WM) cases.
- Standard therapy includes ibrutinib-based or zanubrutinib with overall response rates of 80-90% and major response rates (≥ partial response) of approximately 73%
- MYD88 is mutated in approximately 70% of primary central nervous system lymphoma (PCNSL)
- Standard therapy in 1L includes high-dose (HD) methotrexate combinations result in overall response rates (ORR) of 53-87%, complete response (CR) in 23-49%, and 2-year PFS rates of 36-61%.
- Approximately 20-30% of patients with PCNSL experience tumor progression within first 6 months of treatment.
- There is no standard of care therapy in relapsed disease

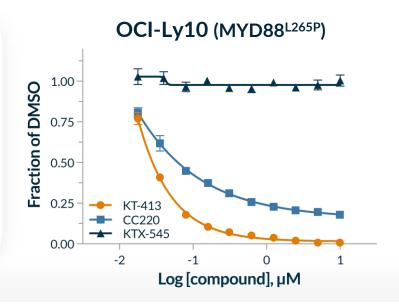
## KT-413 is a Potent Degrader of IRAK4 and IMiD Substrates with Potent Activity in MYD88<sup>MT</sup> Cell lines

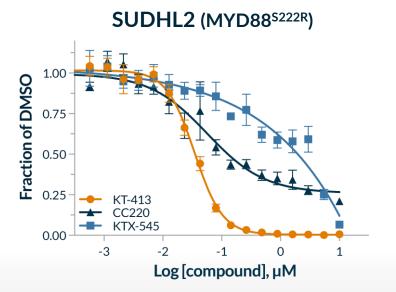
 KT-413 selectively degrades both IRAK4 and IMiD substrates which leads to a profound antitumor effect in vitro and in vivo





 KT-413 is more active in MYD88<sup>MT</sup> DLBCL cells than the clinically active IMiD, CC-220, and IRAK4-selective degrader, KTX-545



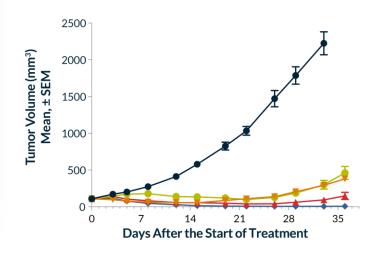


## KT-413 is Highly Active on Intermittent Dosing Regimens

- In the OCI-LY10 MYD88<sup>MT</sup> xenograft model, intermittent dosing of KT-413 induced strong antitumor activity, including complete or partial regressions.
  - Superior activity compared to the clinically active IRAK4-inhibitor CA-4948 or the IMiD CC-220 alone

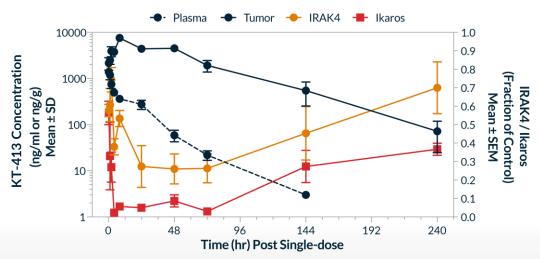
- Single 10 mg/kg dose showed extended tumor exposure and strong degradation of both IRAK4 and IMiD substrates that was maintained for least 72hr
- Single 10 mg/kg dose Q3W had robust anti-tumor activity

## Superior Anti-tumor activity OCI-Ly-10 Tumor Volume



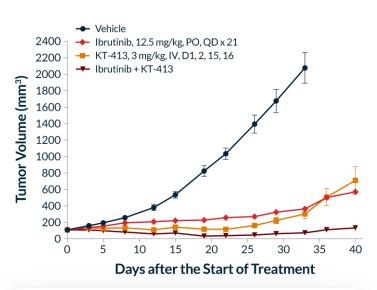
- IV Vehicle
- CA-4948, 150 mg/kg, PO, QD x 37
- CC-220, 3 mg/kg, PO, QD x 21
- ★ KT-413, 5 mg/kg, IV, D1,2,15,16
- → KT-413, 10 mg/kg, IV, D1,2,21,22

Drug (day 33)	T/C% (REG%)	CR	PR	SD	PD
CA-4948	9	0	0	0	7
CC-220	9	0	0	0	7
KT-413 5mg/kg	(14)	1	0	3	3
KT-413 10 mg/kg	(94)	5	2	0	0



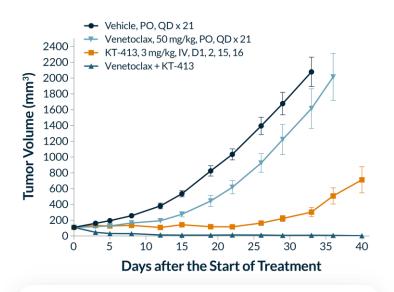
# KT-413 Has Strong Activity in Combination in MYD88<sup>MT</sup> OCI-Ly10 Xenografts

#### with BTK Inhibitor



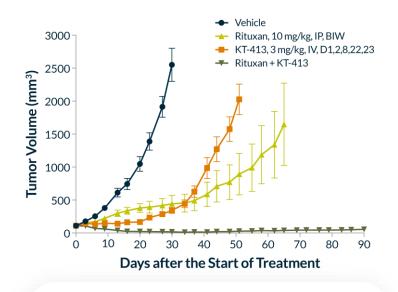
 KT-413 administered on intermittent schedules leads to strong regressions in combination with the BTK inhibitor Ibrutinib

#### with BCL-2 Inhibitor



 KT-413 administered on intermittent schedules leads to deep and durable regressions in combination with the BCL-2 inhibitor, Venetoclax

#### with Rituxan



 KT-413 administered on intermittent schedules leads to deep and durable regressions in combination with Rituxan

Data support potential for KT-413 in combination in earlier lines of therapy

## **KT-413: Ongoing Clinical Study Design**

#### **Key Eligibility Criteria:**

R/R B-cell lymphoma

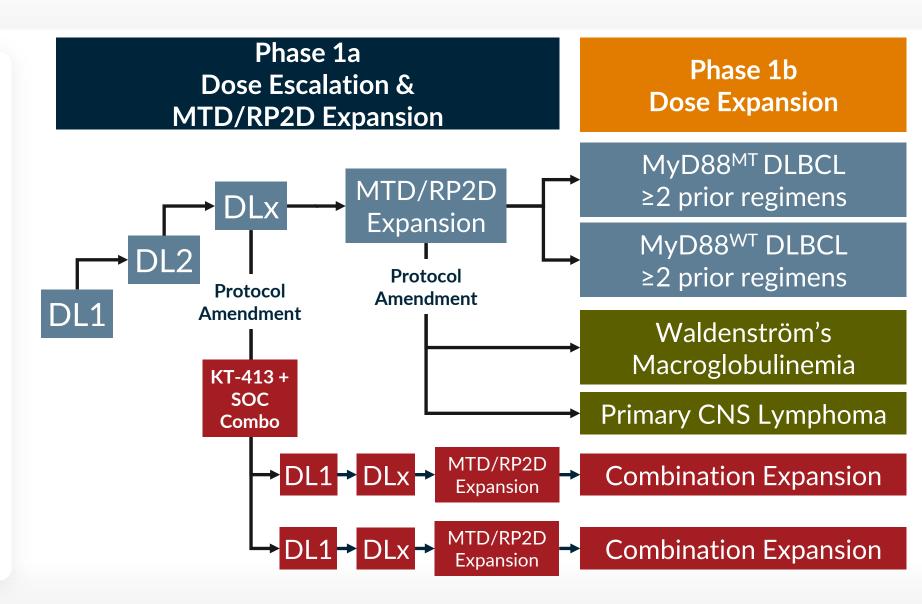
- ≥ 2 prior systemic regimens
- Ineligible or refused CAR-T or ASCT

#### **Primary Objective:**

 To evaluate safety, PK/PD, and preliminary efficacy in MYD88 mutant and MYD88 wild-type R/R DLBCL

#### **Study Endpoints:**

- Primary: Safety, tolerability, MTD/RP2D
- Secondary: PK, preliminary efficacy
- Exploratory: Target (IRAK4/Ikaros/Aiolos) knockdown and downstream effects in PBMC, and tumor



## IRAKIMiD Degrader KT-413 has Potential to be First Precision Medicine in DLBCL to Target a Genetically-defined Population (MYD88MT)

- Profound antitumor activity in preclinical models both in single agent and combination
- Clinical strategy in place to enable accelerated approval:

### **Monotherapy**

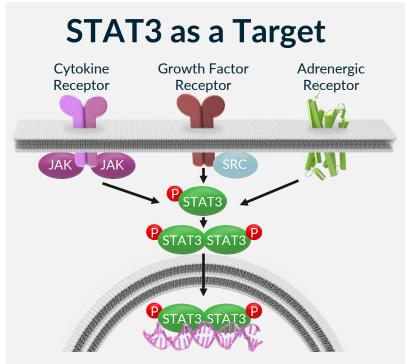
- MYD88<sup>MT</sup> DLBCL for most direct path to registration
- Other MYD88<sup>MT</sup> lymphomas of interest include PCNSL, WM

#### **Combinations**

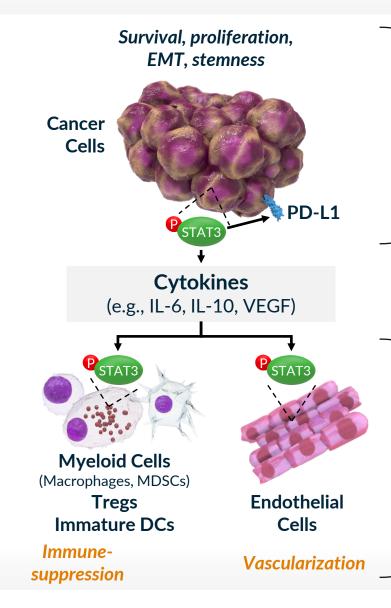
With SOC agents in MYD88<sup>MT</sup> DLBCL to enable earlier line therapy



# STAT3 Has Unique Tumor Cell Intrinsic and Extrinsic Mechanisms



- High degree of validation of JAK-STAT pathway in oncology and immunooncology supported by >25k publications
- Traditionally undrugged target
- First-in-class opportunity to address
   STAT3 driven pathology across large and diverse indications



### **Tumor Cell Intrinsic**

- Hyperactivation of STAT3 via either receptor signaling, or hotspot mutations promotes gene expression programs involved with survival, proliferation, stemness and metastasis of tumor cells
- Opportunities in STAT3-dependent malignancies (e.g., T cell malignancies, DLBCL, AML) and drug resistant tumors (e.g., TKI resistant oncogene-driven solid tumors)

### **Tumor Cell Extrinsic**

- STAT3 promotes the differentiation and activity of immunosuppressive and endothelial cells, resulting in an immunosuppressive tumor microenvironment.
- Opportunities in multiple heme and solid tumor indications that are not responsive to immune checkpoint inhibitors.

# First-in-class Opportunity to Address STAT3-driven Pathology **Across Diverse indications**

Peripheral T-cell Lymphoma (PTCL)

**Cutaneous T-cell** Lymphoma (CTCL)

**Large Granular** Lymphocytic Leukemia (LGL-L)

**Solid Tumors PD-1** Combo: e.g.

Stage IV CRC - MSI-H

Patient Impact (Global)<sup>1</sup>

~13k US

~27k ROW\* per year

~30k US

~67k ROW\* per year

~4.5k US

~25k ROW\*

per year

~26k US

~96k ROW\*

per year

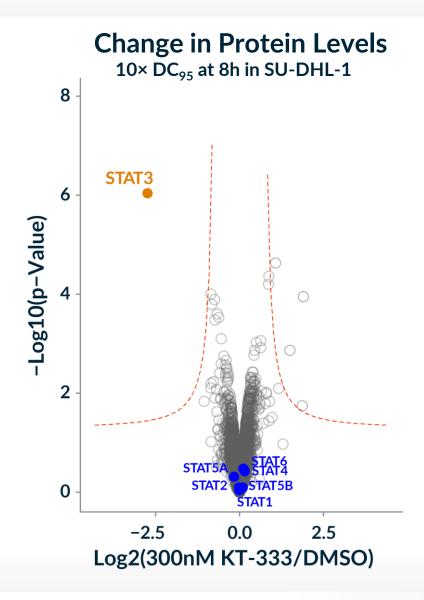
EU. UK. Japan. China

<sup>1</sup>Bionest

- Abnormal activation of JAK/STAT pathway occurs in nearly all T-cell lymphomas
- STAT3 is most frequent mutation among JAK/STAT pathway
- Standard therapies in relapsed/refractory PTCL including result in ORRs ~25%, CR rate of ~10% and mDOR of approximately 9 months
- Advanced stages of disease associated with constitutively activated STAT3
- Standard therapies in relapsed/refractory CTCL result in ORRs of ~30% with few CRs and mPFS of 5-8 months
- STAT3 mutations in up to 70% cases
- Constitutively active STAT signaling in nearly all cases
- No approved agents in LGL-L; SOC in 1L which includes methotrexate and cyclophosphamide result in ORRs ~60%
- No SOC in ≥2L
- STAT3 decreases inflammatory state in tumor, degradation of STAT3 sensitizes to PD1/L1 activity
- PD1 inhibitors approved as single agents or in combination with CTLA4 inhibitor in 1L and in later lines following chemotherapy in patients with metastatic MSI-H CRC

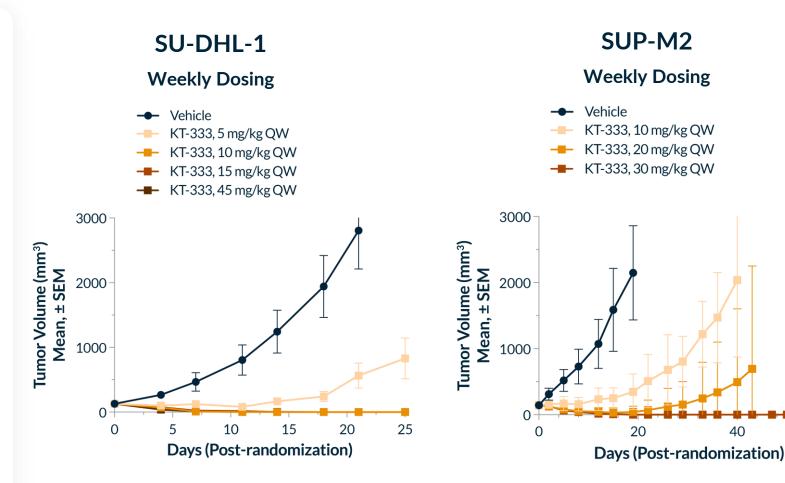
# **KT-333 Demonstrates Highly Selective Degradation of STAT3**

- Deep mass spectrometry-based proteomics to assess STAT3 selectivity performed
- In hPBMC and SU-DHL-1 cancer line (shown), treatment with KT-333 degrader led to selective degradation of only STAT3 protein



# Full and Durable Regressions Across Multiple in vivo Preclinical Tumor Models

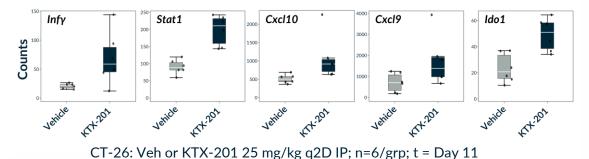
- Mice bearing STAT3dependent ALK+ ALCL SU-DHL-1 or SUP-M2 tumor xenografts dosed with STAT3 degrader
- Dose- and degradation dependent tumor growth inhibition observed with oncea-week dosing
- 10 mg/kg sufficient to drive full tumor regression in SU-DHL- 1 that was durable for multiple weeks after the last dose (on day 14)



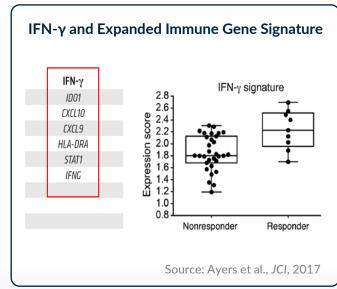
60

# STAT3 Degrader's Role in Immuno-Oncology: Sensitization of Tumors to Anti PD-1

# IFNγ-dependent Gene Signature Induced by STAT3 Degrader Monotherapy in CT-26 Tumors

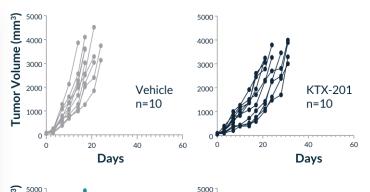


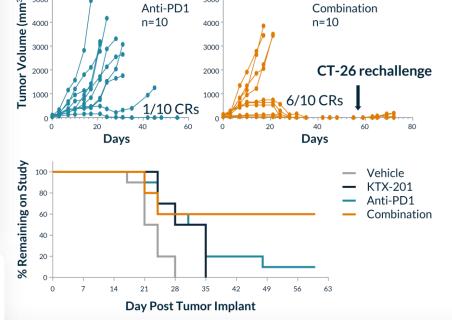
 STAT3 degradation remodels the CT-26 TME to be more immune-favorable with upregulation of anti-tumor immunity genes previously identified as predictors of clinical response to pembrolizumab



### STAT3 Degradation and Anti-PD-1 Synergy

- KTX-201 synergizes with anti-PD-1 leading to 60% complete responses in CT-26 model
- Complete
   responders reject
   tumor
   rechallenge
   demonstrating
   development of
   long-term
   immune memory
- Combination extends survival





## KT-333: Ongoing Clinical Study Design

### **Key Eligibility Criteria:**

R/R B-cell lymphoma

- ≥ 2 prior systemic regimens
- Ineligible or refused CAR-T or ASCT

Advanced solid tumors

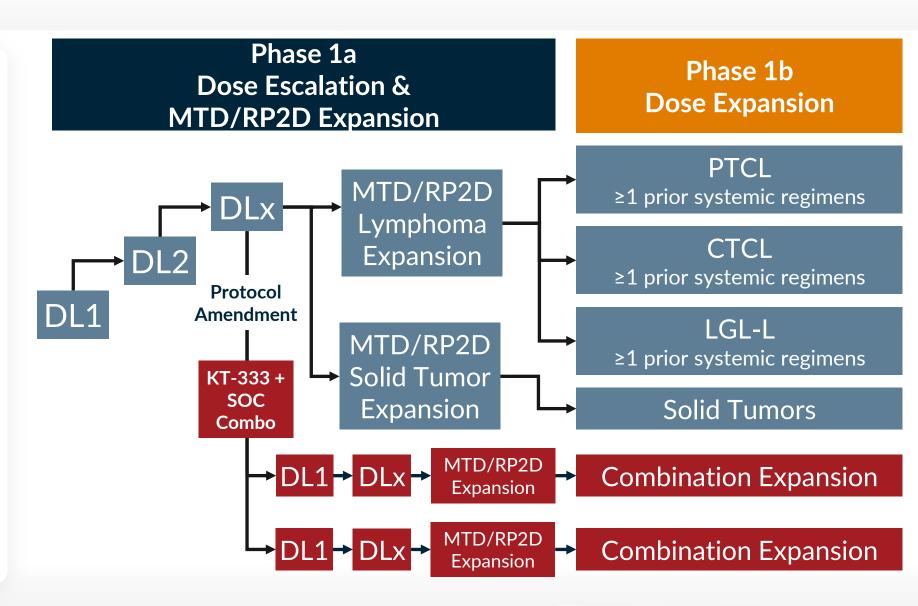
 ≥ 2 prior systemic regimens or no available SOC

#### **Primary Objective:**

 To evaluate safety, PK/PD, and preliminary efficacy in PTCL, CTCL, LGL-L and solid tumors

#### **Study Endpoints:**

- Primary: Safety, tolerability, MTD/RP2D
- Secondary: PK, preliminary efficacy
- Exploratory: STAT3
   knockdown and downstream
   effects in PBMC and tumor

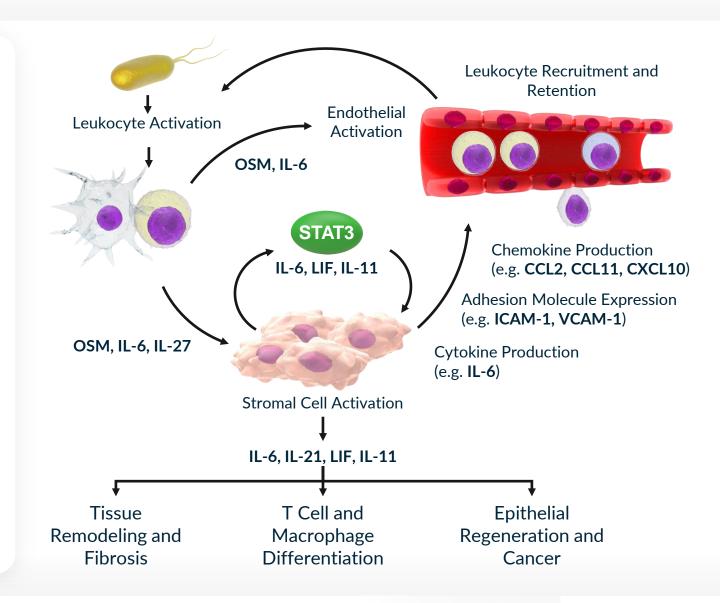


# STAT3 Degrader KT-333, First-in-class Opportunity to Address STAT3-driven Pathology Across Diverse Indications

- First heterobifunctional degrader against an undrugged target in the clinic
- Profound single agent activity in liquid tumor and promising combo activity with anti-PD1 in liquid and solid tumors
- Clinical development strategy includes direct registrational path in STAT3 pathway activated heme malignancies
- Opportunity for expansion into solid tumors in combination with immune checkpoint inhibitors

## **Role of STAT3 in Inflammatory Processes**

- STAT3 is activated by multiple tyrosine kinases and plays a critical role in the signaling of cytokines, hormones, and growth factors including IL-6, IL-21, IL-11, OSM, TGF-β, VEGF
- STAT3 gain-of-function mutations lead to a polyautoimmunity with clinical manifestations that include interstitial lung disease (ILD), arthritis, scleroderma and eczema
- Increased STAT3 activation is associated with disease severity in chronic inflammation including SSc, RA, AS, MS, IBD, Psoriasis
- STAT3 activation is also implicated in conditions defined by intense stromal remodeling in the absence of overt inflammation, e.g. IPF, PAH, NAFLD, and Diabetic Kidney Disease



# STAT3 Degraders Have Applicability in Serious Inflammatory and Fibrotic Diseases

Systemic Sclerosis (SSc)

Idiopathic Pulmonary Fibrosis (IPF)

Atopic Dermatitis (AD) moderate-tosevere

Rheumatoid Arthritis (RA)

Patient Impact<sup>1</sup>

~85k US

~200k ROW\*

per year

~80k US

~180k ROW\*

per year

~12m

~60m ROW\*

per year

~2m US

~17m ROW\*

\*EU, UK, Japan, China

<sup>1</sup>Bionest

Fibrosis / Interstitial Lung Disease

- Increased STAT3 and pSTAT3 observed in SSc skin and lung biopsies
- Aberrant IL6/JAK/STAT3 gene signature in biopsies from SSc patients
- Tocilizumab no effect on mRSS but change from baseline in FVC at week 48 (observed FVC and %pFVC) in patients with SSc/ILD
- STAT3 dependent cytokines (e.g. IL-11) upregulated in lung of IPF patients and are associated with disease severity
- IL-6/gp130 stimulation is mitogenic for IPF fibroblasts but no normal fibroblasts
- SoC reduces the annual rate of FVC decline
- STAT3 GoF patients exhibits signs of dermatitis
- TSLP receptor activates STAT3
- Pruritis is linked to mechanical and IL-31R activation of STAT3
- Fibrotic changes associated with AD is associated with STAT3 activation
- STAT3 mRNA and pSTAT3 are significantly higher in blood of RA patients
- STAT3 target genes (BCL3, SOCS3 and PIM1) are upregulated in early RA
- Constitutive STAT3 phosphorylation in circulating CD4<sup>+</sup> T cells correlates to IL-6 levels in recent-onset RA
- ~30% of SoC therapies in moderate to severe RA achieve ACR70 at week 52

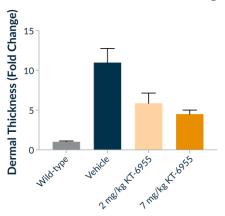
Autoimmune

KYMERA

# Our STAT3 Degraders Robustly Reduce Disease in Models of Systemic Sclerosis, Arthritis and CNS Inflammation

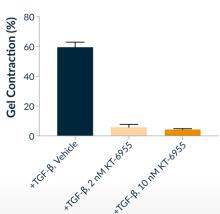
#### In Vivo Tight Skin Model (Fibrosis)

TSK ± Mice (BIW Dosing)



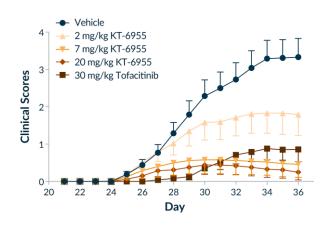
#### Cellular Fibrosis Model

TGF-β Stimulated SSc Fibroblasts (72h)

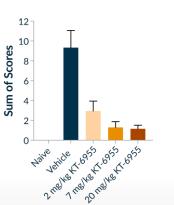


#### In Vivo CIA Model (RA)

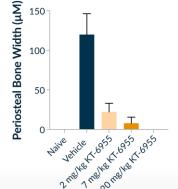
Collagen-induced Arthritis (BIW Dosing)



**Pathology Score** 

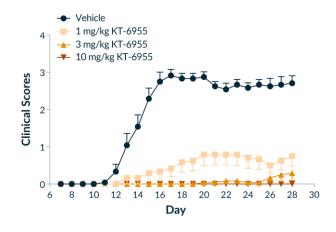


Periosteal Bone Growth



#### In Vivo MS Model

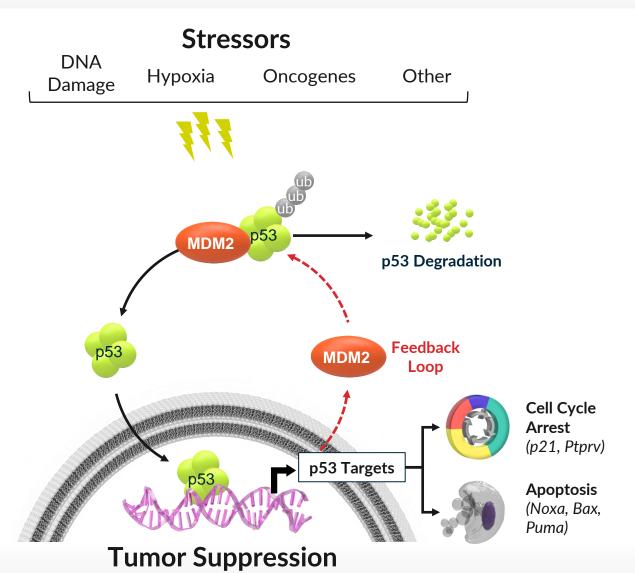
Experimental Autoimmune Encephalomyelitis (BIW Dosing)



Treatment	EAE Incidence (%)	Median Day of Onset	End Score (+/- SD)
Vehicle	100.0%	13.0	2.71 +/- 0.69
1 mg/kg KT- 6955	66.7%	23.0	0.75 +/- 0.92
3 mg/kg KT- 6955	16.7%	>28.0*	0.29 +/- 0.69
10 mg/kg KT- 6955	0.0%	>28.0*	0.00 +/- 0.00

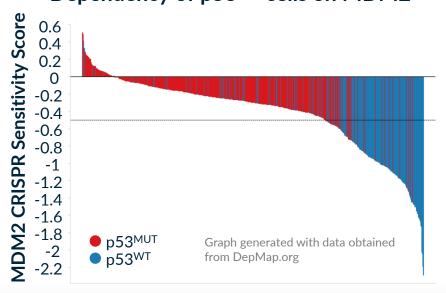


# MDM2 is the E3 Ligase that Modulates P53, the Largest Tumor Suppressor



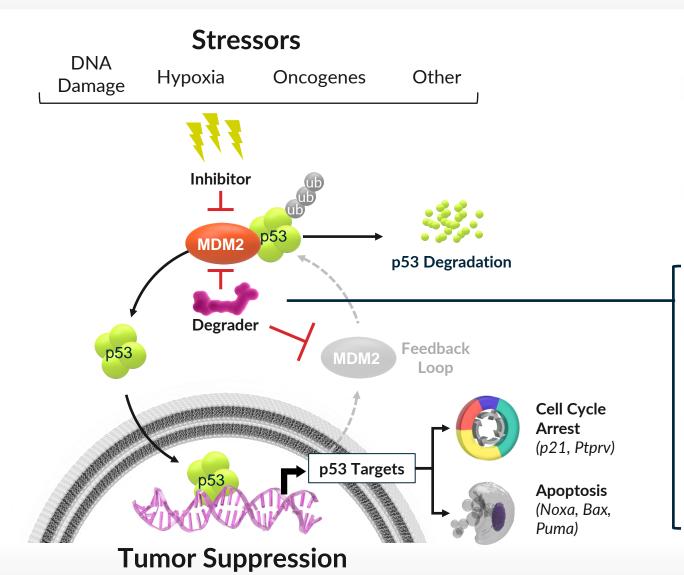
### **Cancer Genetics**

- p53 is NOT mutated in almost 50% of tumors
- MDM2 overexpression and amplification can inactivate p53
- Large opportunity in wide variety of cancers
   Dependency of p53<sup>WT</sup> cells on MDM2



**Cell Line** 

## MDM2 Degradation, Not Inhibition, Efficiently Restores p53



#### Clinical Validation

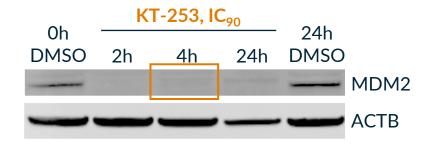
- MDM2 small molecule inhibitors of MDM2/p53 interaction show activity in the clinic..
- ...but they induce MDM2 feedback loop resulting in limited impact on pathway

### **Degrader Advantage**

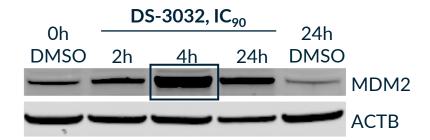
- MDM2 degraders, by removing the protein, can overcome the p53-dependent feedback loop that upregulates MDM2
- MDM2 degrader can induce an acute apoptotic response in tumor cells, increasing efficacy and therapeutic index vs a small molecule inhibitor

# KT-253, Unlike Small Molecule Inhibitors, Overcome the MDM2 and p53 Autoregulatory Feedback Loop

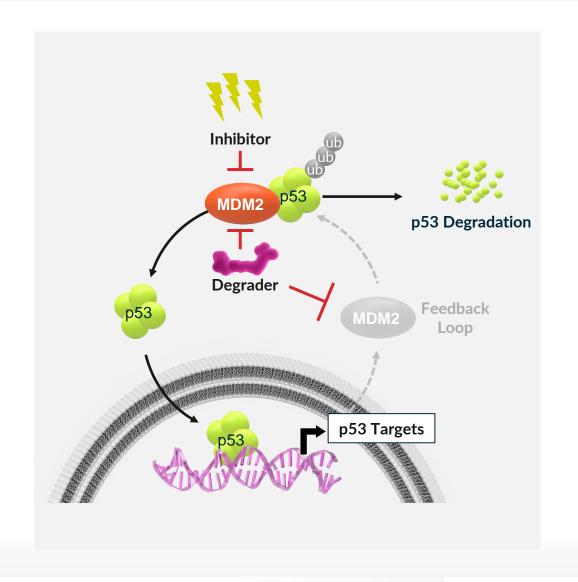
### **Degrader Overcomes MDM2 Feedback Loop**



MDM2 levels are kept at undetectable levels with MDM2 degrader KT-253, leading to p53 stabilization



MDM2 levels are increased by the small molecule inhibitor (feedback loop), impairing p53 stabilization

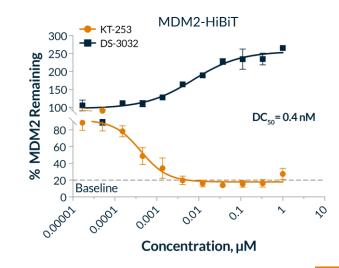


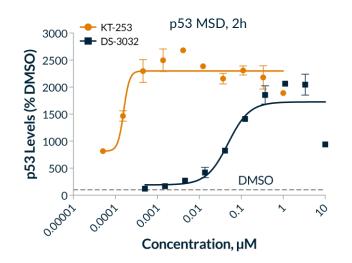
# Kymera's MDM-2 Degrader Development Candidate, KT-253 is Superior to MDM2/p53 Small Molecule Inhibitors

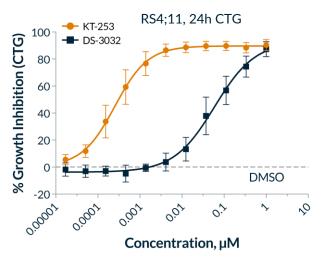


KT-253, unlike SMI's such as DS-3032, strongly stabilizes p53...

... which leads to superior tumor cell killing (pM range)



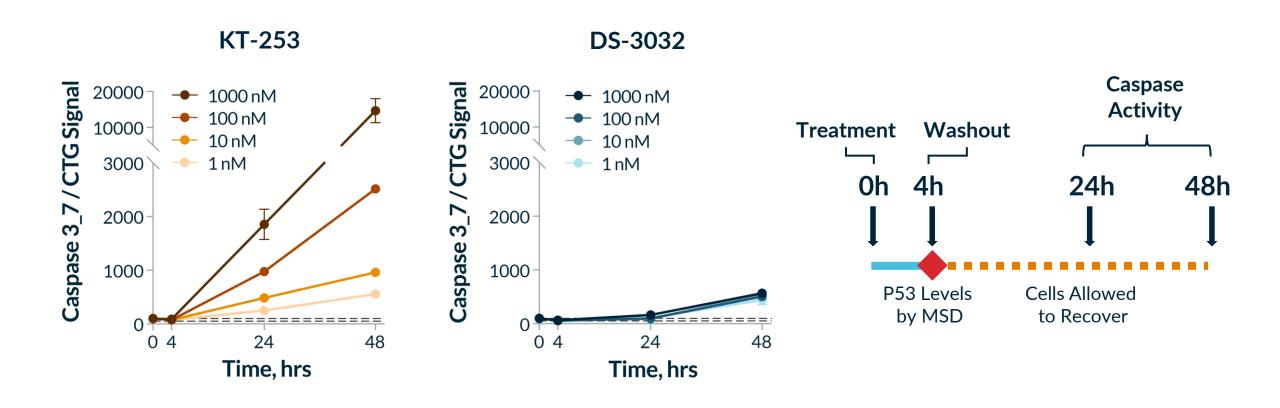




Compound	KT-253	DS-3032	RG7388	SAR405838	HDM201	AMG-232
Company	Kymera	Sankyo/Rain	Roche	Sanofi	Novartis	Amgen/Kartos
Clinical stage	IND enabling	Ph II / combo AML	Ph II / III	Paused	Ph I / II	Multiple Ph II; combo AML
RS4-11 IC <sub>50</sub> (nM) (AML Cell Killing)	0.3	67	220	620	163	280
MDM2-HiBiT, DC <sub>50</sub> (nM) (Degradation)	0.4	-	-	-	-	-

- KT-253 is >200-fold more potent in tumor cell killing assays than SMI's due to its mechanism of action
- Proteomics show selective degradation of KT-253

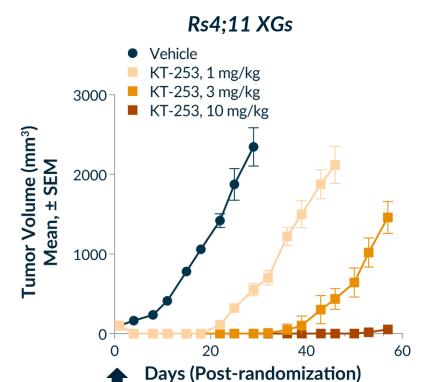
# Short Term Exposure to MDM2 Degrader, but not SMI, is Sufficient to Commit Cells to Undergo Apoptosis



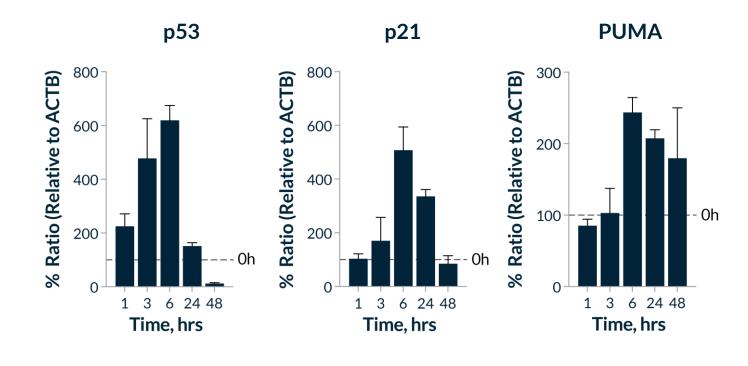
- 4 hr target coverage by KT-253 is sufficient to induce apoptosis in contrast to SMIs
- Supports hypothesis that intermittent dosing schedule of KT-253 can drive efficacy while increasing therapeutic index

# Single Dose of KT-253 Leads to Sustained Tumor Regression

### Single Dose of KT-253 Achieves Sustained Tumor Regression



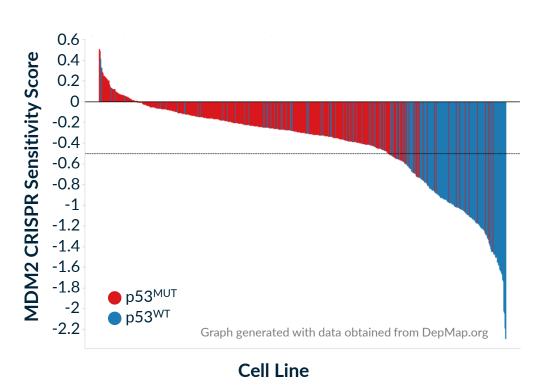
MDM2 Degradation (KT-253, 1 mg/kg) Leads to Fast Increase in p53, p21, and PUMA (Key Apoptotic Biomarker)



Clinical equivalent doses of small molecule inhibitors have no significant in vivo impact in these xenograft models

# MDM2 Dependency Seen Across a Large Subset of Tumor Types Large Franchise Potential in Liquid and Solid Tumors

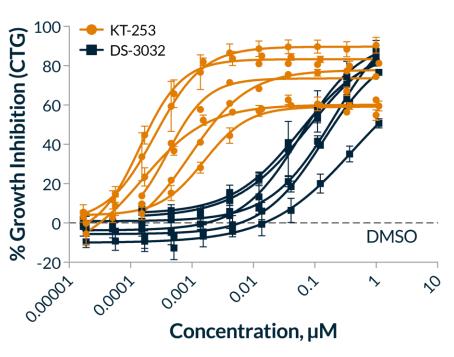
# Dependency of p53<sup>WT</sup> Cell Lines on MDM2



**Tumor Types**: Uveal melanoma, Bile Duct, Bladder, Bone, Brain, Breast, Colon, Endometrial/Uterine, Gastric, Kidney, Liver, Lung, Ovarian, Pancreatic, Rhabdoid, Sarcoma, Leukemia, Lymphoma

# MDM2 Degrader Superior to SMI Across Cell Line Panel

Heme & Solid Cell Lines



**p53WT cell lines sensitive**: ALL, AML, DLBCL, Uveal Melanoma p53 mutant cell lines were not sensitive to KT-253 or DS-3032 as expected

# Focus on Indications Where MDM2 Degradation Leads to Acute Apoptotic Response

# p53 WT in >50% of Tumors

- Mesothelioma
- Melanoma
- DLBCL
- Prostate cancer
- Cholangiocarcinoma
- Cervical cancer
- AML
- Renal cell cancer
- Uveal melanoma
- Thyroid cancer
- Liposarcoma
- HCC
- Breast cancer

MOA-specific Sensitivity (Biomarker-based)

- AML
- Uveal Melanoma
- Lymphomas
- Others will be disclosed in upcoming medical meetings

KYMERA

# MDM2 Amplification

- Liposarcoma (87%)
- Sarcoma (19%)
- Glioblastoma multiforme (7%)
- Bladder (3%)
- Cholangiocarcinoma (3%)



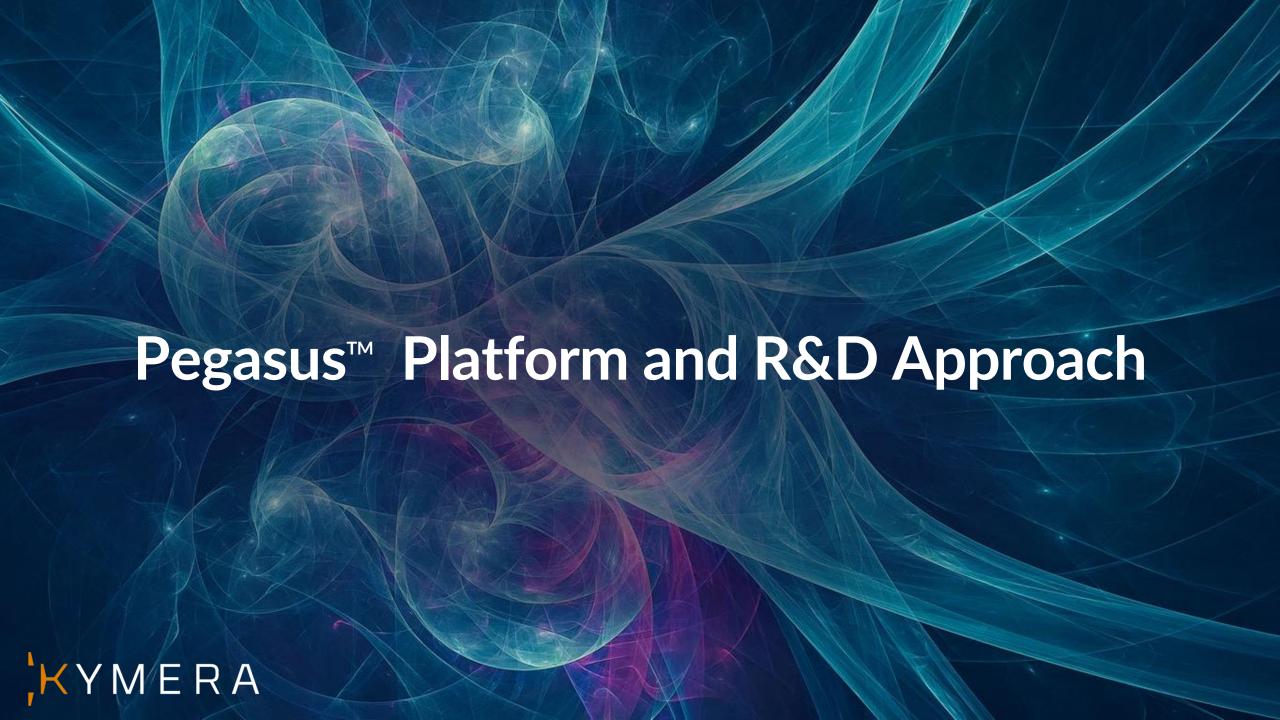
Donehower, et al. 2020

**TCGA** 

Oliner, et al. 2015

# KT-253 is a Potent MDM2 Degrader and a Best-in-Class p53 Stabilizer with Potential to Treat Numerous p53 WT Tumors

- KT-253 inhibits tumor cell growth with picomolar potency and is more than 200-fold more potent than clinically active MDM2 small molecule inhibitors
- KT-253, unlike small molecule inhibitors, blocks the feedback loop which up-regulates
   MDM2 production and in doing so more effectively stabilizes the tumor suppressor p53
- Short term high exposures of KT-253 are enough to induce apoptosis in cell lines and in vivo xenografts, which ensures high activity and improved therapeutic index vs SMI's
- Broad franchise opportunities available for this mechanism (p53 WT is present in >50% tumors), Kymera is focused on indications with specific sensitivity to degrader mechanism, such as AML, Uveal melanoma and others through a biomarker strategy
- Projected IND filing in 2022



## Proteome Editing is the New Frontier of Medicine

# Genome Essentially static Alterations are responsible for **some** diseases Editing is irreversible

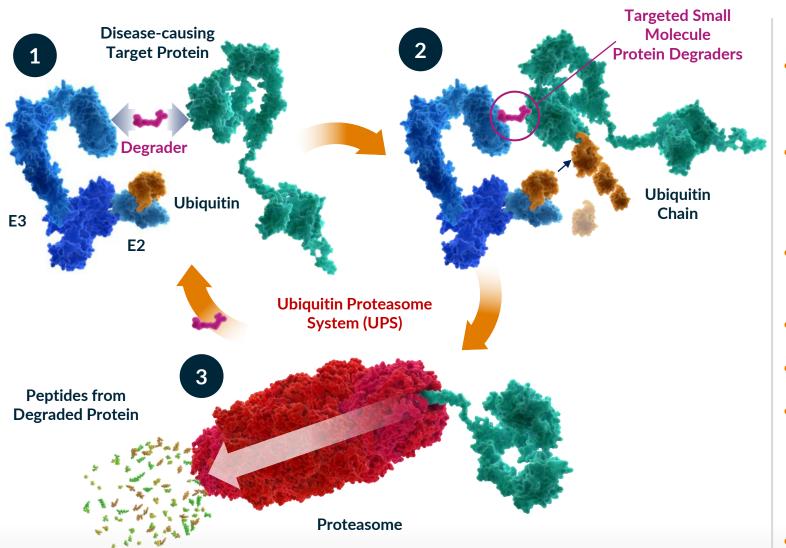
**Encodes** 

# Proteome

- Changes based on internal (genetic) and external (epigenetic) events
- Alterations are responsible for <u>all</u> diseases
- Editing is reversible

## **Proteome Editing with Targeted Protein Degradation**

A Nobel Prize (2004) Inspired Technology

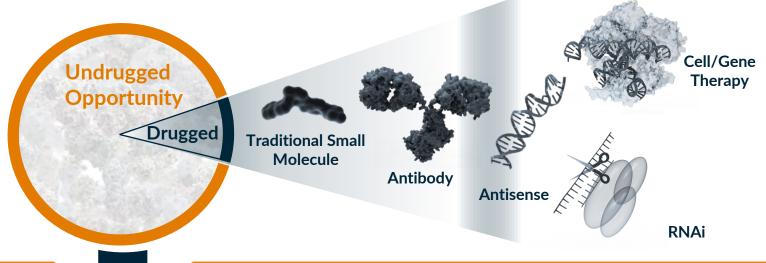


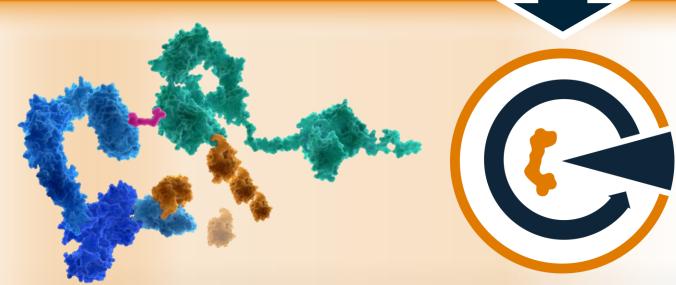
### **Expanded Opportunities**

- Small molecule binds to E3 and target protein to effect its degradation
- Small Molecule only needs to "weakly" bind to protein: Not inhibit function
- Highly potent/catalytic:
   Small amount of drug needed
- Highly specific
- Genetic-like knock-down effects
- Advantage of small molecule development: Route of administration, manufacturing
- Agnostic to protein type and disease

# **Expanding Druggable Proteome with Targeted Protein Degradation**

All therapeutic modalities to date only drug up to 20% of proteome





Kymera is expanding the drugged proteome with Targeted Protein Degradation (TPD)

# **Exponential Clinical Pipeline Growth of Degraders**



# Targeted Protein Degradation

	Drugs FDA Approved	Drugs in Clinical Development
Degraders	4	>15













3 Sam		
Technology (		Į
A-AFD		

2020

2030

#### Therapeutic Modality Drugs FDA Approved

•	•	•	
Small molecule inhibit	or >20	00	
Antibody	>10	0	
ASO	~10	)	
Cell Therapy	~5		
Gene Therapy	~4		
RNAi	~3		
Gene editing	0		

- Elucidation of MOA of thalidomide circa 2010 has profoundly accelerated TPD
- Clinical programs with protein degraders have grown exponentially in the past 12 months
- This growth will continue in foreseeable future

## We Want to Drug All Target Classes



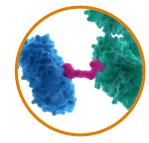
## **Expanding the Druggable Proteome with TPD**



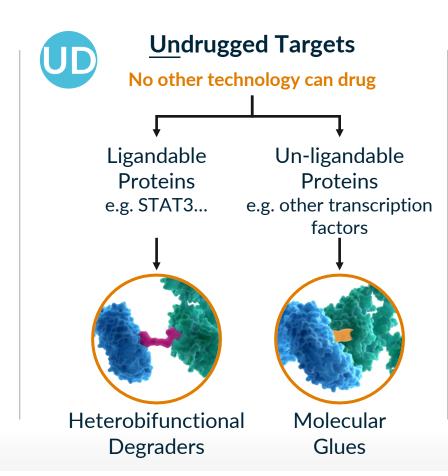
## Inadequately <u>D</u>rugged Targets with Clear Degrader Advantage

Small molecule binders exist but unable to drug target fully e.g. IRAK4, MDM2...





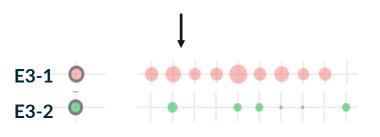
Heterobifunctional Degraders





### Clinically Validated Targets Enabled by E3 Ligase <u>Tissue</u> Restricted Expression

On target unwanted pharmacology limits clinical application



Tissue sparing or selective E3 ligases eliminate unwanted toxicity and allow full clinical potential

## **Proprietary Pegasus™ TPD Platform**

## **Key Capabilities**



- E3 ligase Whole-Body Atlas: Identification of the expression profiles of ~600 unique E3 ligases
- Match target protein with appropriate E3 ligase
- Toolbox of proprietary ligands leverages the E3 Ligase Whole-Body Atlas



- Quantitative System Pharmacology Model
- Understanding and Translating PK/PD from preclinical systems into humans



Proprietary Chemistry

- Comprehensive hit finding technologies toolbox
- Proprietary chemistry expertise, AI enabled optimization
- Ability to convert into degraders with optimal pharmaceutical properties





Center for Molecular Glue Discovery

- Identification of novel E3 ligases to degrade high value "undrugged and un-ligandable" proteins
- With external collaborators enable differentiated approach to molecular glues discovery

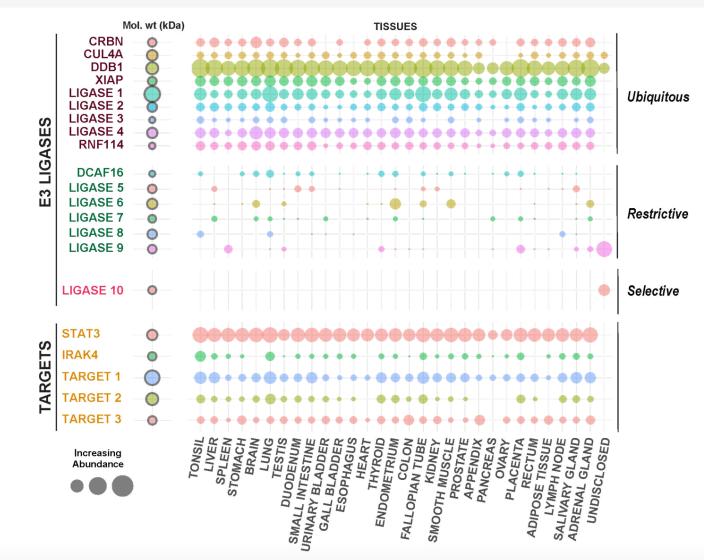
## Novel E3 Ligases to Drug a New Generation of Targets

# TR

# Clinically Validated Targets Unlocked by E3 Ligase Differential Expression

On target unwanted pharmacology limits clinical application

- Focused on determining the expression profiles of ~600 unique E3 ligases
- Patterns mapped in both disease and healthy contexts
- Ability to match a target protein with appropriate E3 ligase based on expression and biology via a machine learning algorithm
- Vision to develop tissue-selective or tissue-restricted degraders to enable novel therapeutic opportunities

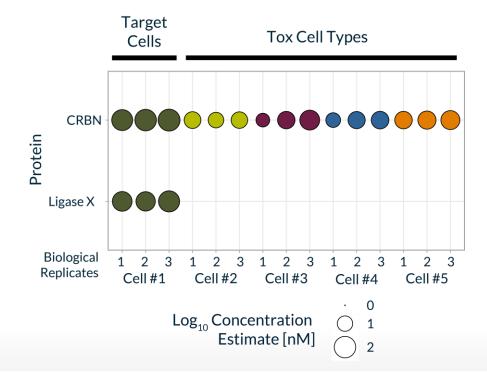


Source: Kymera's Proprietary E3 Expression Atlas

# Kymera has Engaged a Broadly Expressed Protein in Only One Cell Type Using a Tissue Selective E3 Ligase

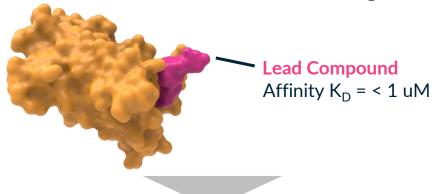
Kymera Has Identified an E3 Ligase that is Expressed Almost Exclusively in One Cell Population

Protein Expression Profile (Proprietary E3 Atlas)

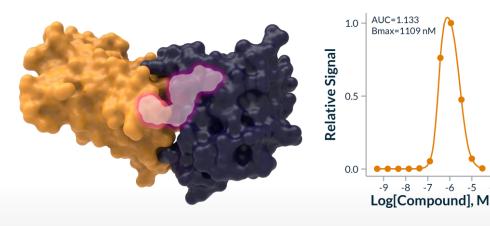


Ligand
Identification
and
Optimization

Small Molecule Ligand Bound to a Tissue-selective E3 Ligase



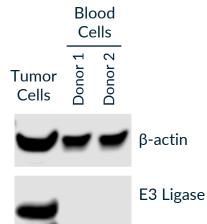
# Leads to an Active Ternary Complex with a Protein of Interest



# Tissue-Selective Degradation Drives Increase of Therapeutic Index

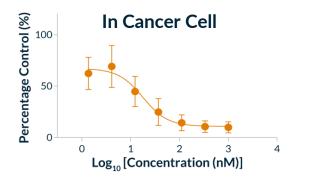
- Kymera has characterized an E3 ligase that is expressed broadly but NOT in ONE blood cell type
- A clinically validated oncology target has dose limiting toxicity driven by on-target pharmacology in the same blood cell type where this E3 ligase is absent/very low



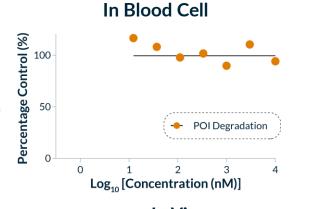


Optimization and Degrader Program

This program is projected to nominate a development candidate in 2022



Kymera's degrader using this E3 ligase degrades target in cancer cells



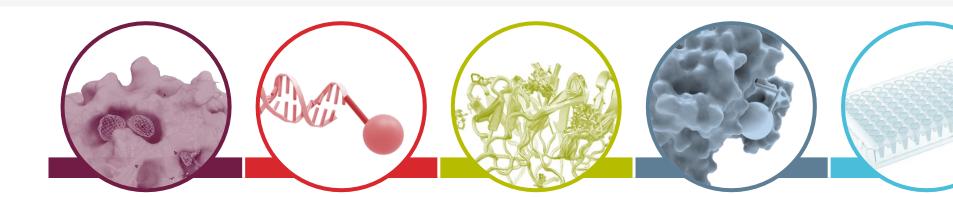
Kymera's degrader using this E3 ligase DOES NOT degrade target in one blood cell type



In a pharmacologically active dose *in vivo* a degrader allows blood cells to survive while SMI leads to substantial cell death

POI = protein target of interest

# A Comprehensive Hit Finding Toolbox Rapidly Enables New Ligand Discovery Against All Target Classes





#### Criteria

 Availability of structure or homology model

#### **Approaches**

- DB ~8 million purchasable cpds
- Cloud enables screen
   24hrs
- Al to improve enrichment

#### **DEL**

#### Criteria

- High quality protein
- Ideal QC profile (single-species by SEC; <5% aggregation by DLS)

# Fragment-Based Screen

#### Criteria

- Availability of high quality (crystallization-grade) protein
- Robust crystallization system

#### **Approaches**

- SPR. NMR
- X-ray
- LC/MS (covalent)

# Cysteine Covalent Screening

#### Criteria

 Proteins have reactive cysteines

#### **Approaches**

- Covalent fragment screening on recombinant protein
- Whole cell covalent fragment screening

### HTS

#### Criteria

 Available highthroughput assay format

#### **Approaches**

- Focused library
- Diversity set

#### **ASMS**

#### Criteria

 Availability of highquality protein



# **Successful Examples of Fragment and Covalent Screens**

## **Fragment Based Virtual Optimization**

Fragment bound X-ray structure

HTRF

 $IC_{50} > 1 \text{ mM}$ 

X-ray with **Fragment** 

X-ray with

**Optimized Ligand** 

Rational design to explore SAR

 $IC_{50} < 30 \,\mu M$ 

*In silico* library evaluation & synthesis

 $IC_{50} < 5 \mu M$ 

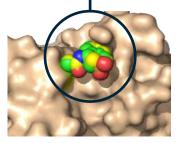
Rational design to optimize library hits MW <400 clogP 0.7

 $IC_{50} = < 0.1 \, \mu M$ 

Total # of virtual compounds evaluated	40K
Total # of crystal structures	18
Total # of compounds made	195

### **Covalent Ligand E3 Ligase Hit Finding**

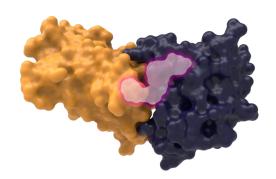




 Novel covalent ligand to bone marrow-sparing E3 ligase for multiple oncology programs

# Kymera Can Develop Degraders with Predictable Drug-Like Properties

Pre-clinical Optimization of Degraders Leads to High Oral Bioavailability Across Pre-clinical Species



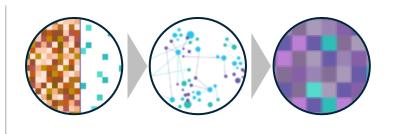
### **Ternary Complex Modeling (TCM)**

Harnessing the power of cloud computing and AI to evaluate millions of TCM models



### **Molecular Chameleonicity**

Accurately capturing the chameleonic nature of degraders to predict ADME/PK profile



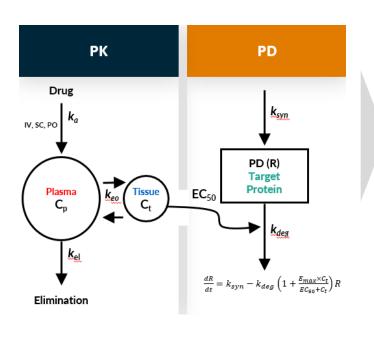
### Al-driven Insights

Leveraging deep-learning to derive design insights from in silico and in vitro data

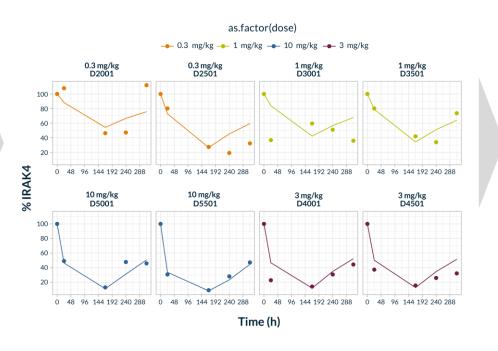
DMPK Properties	Degrader 1	Degrader 2	Degrader 3	Degrader 4
HLM / RLM (μL/min/mg)	317 / 193	74 / 22	<12 / <12	<12 / <12
P <sub>app</sub> (10 <sup>-6</sup> cm/s) / Efflux Ratio	ND / ND	6.0 / 1.3	14 / 21	4.3 / 2.0
Rat CI (mL/min/kg) / Vdss / F%	ND	35 / 9 / 8	19 / 7 / 14	7/3/18
Dog CI (mL/min/kg) / Vdss / F%	ND	69 / 19 / 9	15 / 11 / 58	6 / 4 / 60
Monkey CI (mL/min/kg) / Vdss / F%	ND	129 / 16 / 1	33 / 16 / 45	9 / 6 / 62

# Mechanistic Modeling Allowed Kymera to Accurately Predict Human PK and PD from Preclinical Dog Data for Clinical Candidate KT-474

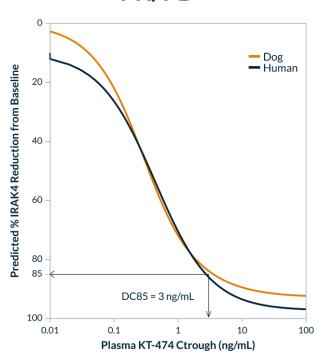
# Mechanistic PK/PD Modeling Describes the MoA of TPD



# Preclinical Species Models for PK/PD KT-474 in Dog

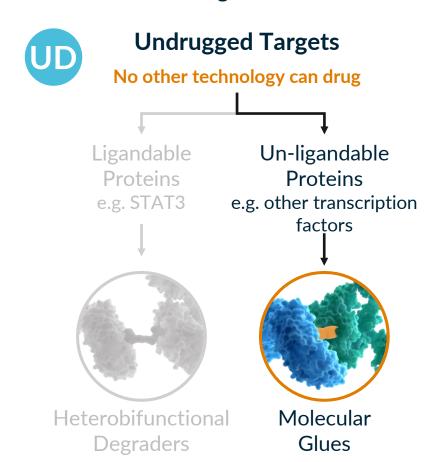


# Model Predicts Human PK/PD



# Rationally Designing Molecular Glues to Drug Historically Undrugged/Unligandable Targets

To drug all genetically validated but undrugged and un-ligandable proteins through the discovery of novel E3 ligases and small molecule glues



## **Our Approach:**

- We are NOT iterating on CRBN/IMiD Scaffold
- Identifying the best matched pairs between targets of interests and E3 ligases exploiting natural affinity augmented with small molecule glues
- Established a platform that uses high content genetic-based screens, structural insights, biological pathways deconvolution, degron discovery, computational knowledge expansion
- Multiple programs in discovery stage
- Strategic partnerships with:









# **Expanding the Druggable Proteome with TPD**

- Kymera intends to drug all target classes using targeted protein degradation
- A comprehensive hit finding toolbox has been developed to identify ligands against novel E3 and undrugged targets
- Our capabilities have evolved to accurately predict human active doses and compound properties
- We have developed know-how and technologies to drug inadequately drugged targets such as IRAK4 and MDM2, undrugged targets such as STAT3 and have for the first time in TPD drugged targets in a tissue selective manner using our E3 ligase toolbox.
- Kymera has established a new discovery unit to identify new molecular glue degrader drugs focused on undrugged/un-ligandable high value protein targets
- Multiple strategic collaborations have been established to enable MG Discovery

# What We Expect in 2022

- Completion of Ph1 patient cohort for KT-474 and transition to Sanofi
- Proof of mechanism in patients for KT-413 and KT-333 oncology Ph1 studies
- IND filing for KT-253
- First tissue restricted E3 ligase enabled program in development
- Additional programs in oncology and immunology reaching development
- Expanded recognition as a leader in TPD with a disruptive innovation engine across the biotech sector
- Multiple scientific contributions in medical meetings and in peer reviewed publications
- Continued investment in providing our employees, collaborator and partners the best experience

# Our Vision: Where Kymera Will Be in 2026



A fully-integrated biotech company with a disease and technology agnostic pipeline and capabilities

Path to NDA for at least 1 program

At least 8 clinical stage programs across different development stages and disease areas

Pipeline positioned to deliver at least 1 new IND per year

Clinical proof-of-concept established in tissue-selective/restricted degradation and undrugged targets

Disease and technology-agnostic pipeline and capabilities

Expand technology platform to wholistically address undrugged proteome Continued commitment to innovation and first-in-class science and medicines

Commercial organization build up in progress



# Thank you

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# Strategic Partnerships to Accelerate Growth

Supports Discovery, Development, and Commercialization Within and Outside of Core Therapeutic Areas

### **Strategic Collaborators**



- Established July 2020; \$150M upfront; >\$2B of potential milestones, plus tiered royalties
- Focused on IRAK4 in I/I + 2<sup>nd</sup> program; KYMR advances IRAK4 through Ph 1; Sanofi Ph 2 and beyond
- KYMR retains U.S. co-dev and coco opt-in rights, and rights to IRAK4 in oncology



- Established May 2019; \$70M total upfront; >\$1B of potential milestones, plus tiered royalties
- **6 targets** in 5 disease areas
- Outside of Kymera's core focus areas in oncology and immuneinflammatory



- Blood-based cancers
- Leveraging patient network and access



- Established October 2021; upfront, research payments, and downstream milestones
- Leverages AlphaSeq platform to discover novel interactions between E3 ligases and undrugged targets for molecular glue discovery

### **Academic Collaborators**













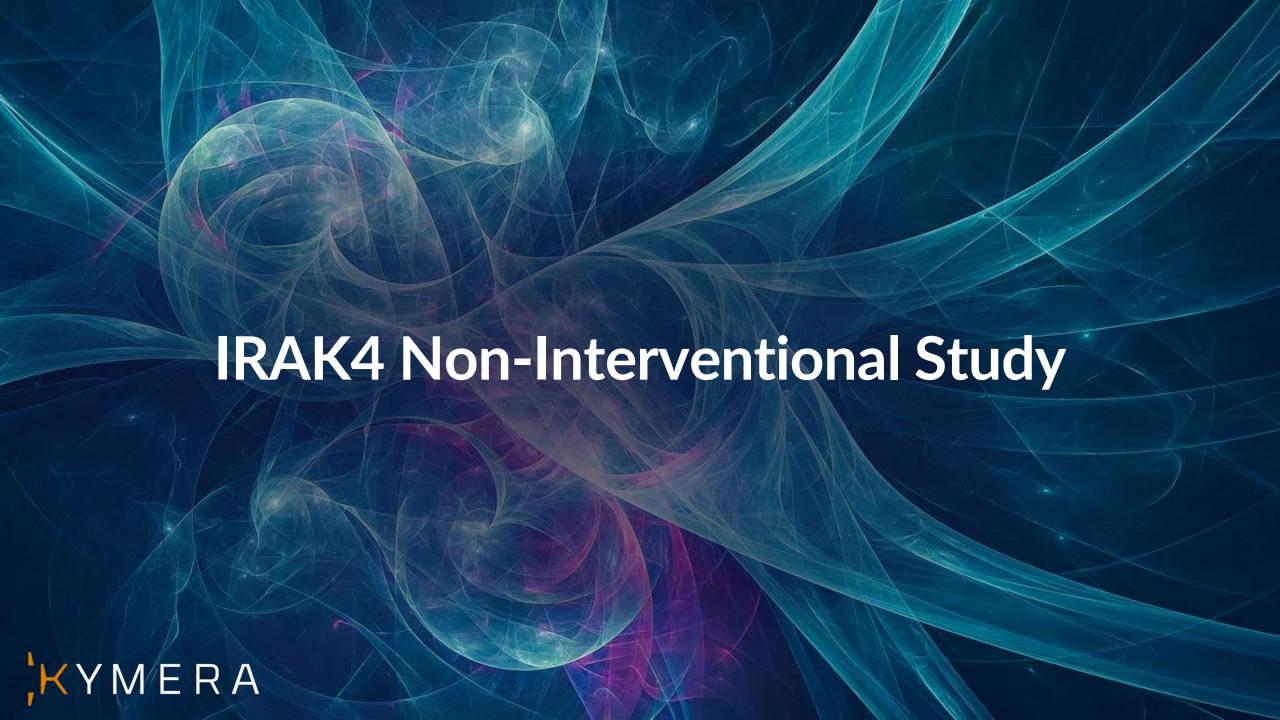












### Non-interventional Study in HS and AD Patients

Designed to Characterize IRAK4 Expression and its Relationship to Inflammatory Biomarkers

### **Study Design**

#### 30 HS: 9 mild, 10 moderate, 11 severe **Patients Enrolled** 10 AD: 8 mild. 1 moderate. 1 severe Age 18 or older Active Hidradenitis Suppurativa (HS) or Atopic Dermatitis (AD) Inclusion Criteria Mild, moderate, and severe HS (IHS4 score) or AD (EASI score) Patients currently on a biologic or other immunosuppressive treatment for HS or AD Use of biologic treatment for HS or AD within 3 months or 5 half-**Exclusion Criteria** lives, whichever is longer Use of non-biologic immunosuppressive treatment in last 4 weeks Targeted MS of IRAK4 in skin biopsies IRAK4 immunofluorescence in skin biopsies Proinflammatory gene transcripts in skin biopsies **Biomarker Endpoints** Flow cytometry for IRAK4 in ex vivo treated whole blood Cytokines from ex vivo treated whole blood Plasma cytokines and acute phase reactants Interim data on IRAK4 expression in HS skin and blood presented in October 2020 at SHSA Meeting **Reporting Status** Updated data presented in May 2021 at SID Meeting on full HS skin dataset for IRAK4 protein and proinflammatory gene transcripts as well as healthy skin and monocyte controls

### **Non-interventional Study Methods**

HS Skin Biopsies (N=30)

Lesion (L), Peri-lesion (PL), Non-lesion (NL)



#### IRAK4

Immunofluorescence (IF)
Localization/ Semi-guant

- 1. Expression in L vs PL vs NL
- 2. Expression by disease severity
- 3. Expression in Epidermis vs Dermis



#### IRAK4

Mass Spectrometry (MS)
Whole Tissue/Quantitative

- 1. Expression in L vs PL vs NL
- 2. Expression by disease severity



- 1. Significantly elevated genes in L vs NL
- Spearman correlation of elevated genes with IRAK4 protein levels by MS and IF

### **Control Methods**

Healthy Subject Skin Biopsies (N=10)



#### IRAK4 Immunofluorescence (IF)

- 1. Expression in Healthy vs HS
- Expression in Epidermis vs Dermis



- IRAK4
  Mass Spectrometry (MS)
  - 1. Expression in Healthy vs HS
- L. Significantly elevated genes in HS vs Healthy
  Spearman correlation of elevated genes with
- Spearman correlation of elevated genes with IRAK4 protein levels by MS and IF

#### Ex-vivo R848-Stimulated Monocyte Methods

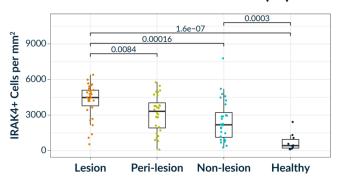
- Mechanistic study designed to evaluate impact of IRAK4 degradation on response of healthy monocytes to TLR7/8
  agonist R848
- Monocytes isolated from blood of healthy donors (N=3), treated overnight with 500nM of IRAK4 degrader KT-474, and then stimulated with R848
- 3. For RNA-seq, cells were collected at 2 hours following stimulation
- 4. Analysis of KT-474 effect on R848 upregulation of subset of genes overexpressed in HS skin lesions that correlate with IRAK4 protein levels

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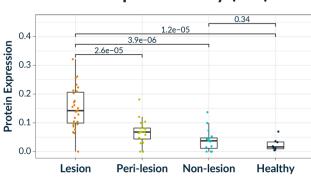
# **IRAK4 Protein Expression in Autoimmune Diseases: Upregulation in Skin of HS Patients Compared to Healthy Subjects**

IRAK4 protein levels overexpressed in **HS** patient skin lesions

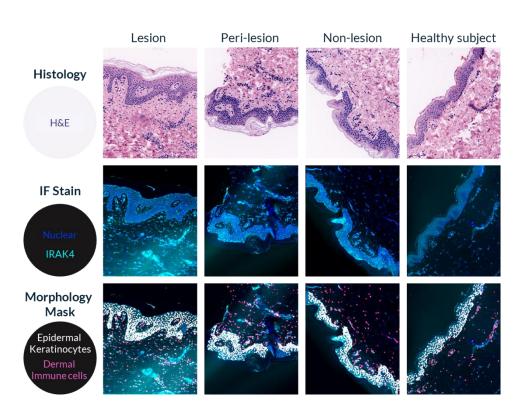
#### Immunofluorescence (IF)



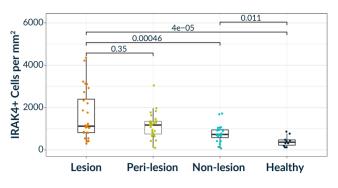
### Mass Spectrometry (MS)



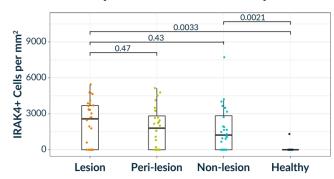
IRAK4 expression is upregulated in dermis and epidermis of HS patients relative to healthy subject skin



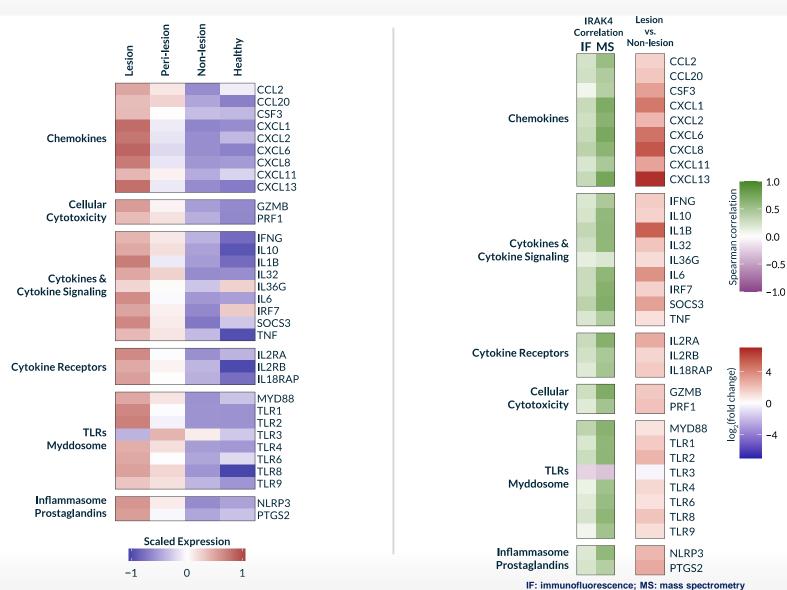
#### **Dermal Immune Cells**



#### **Epidermal Keratinocytes**



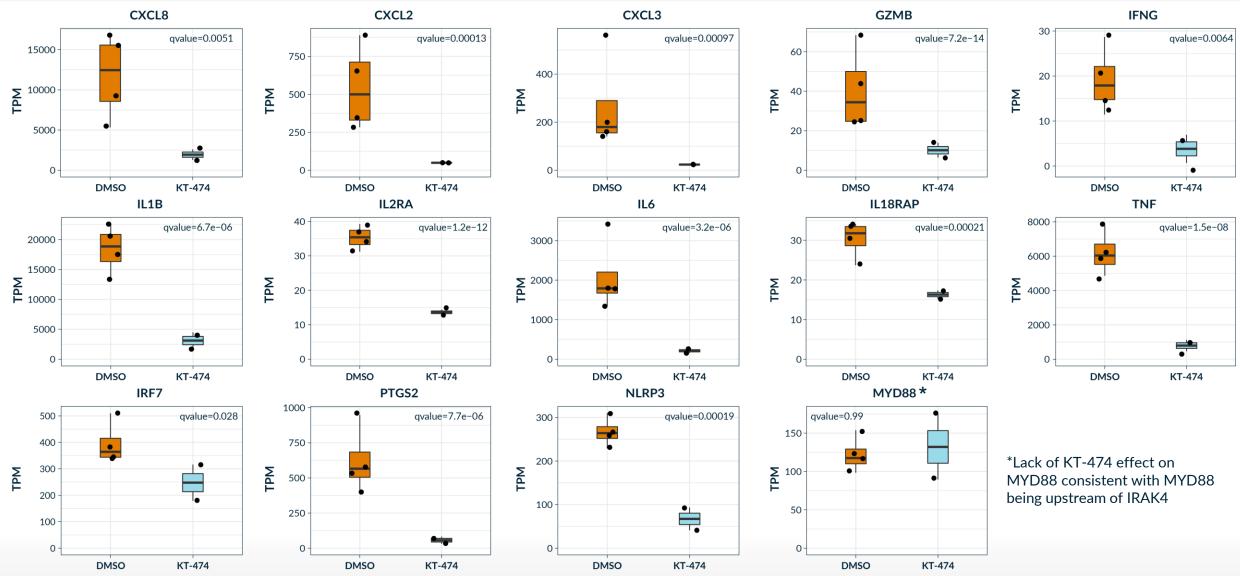
# Multiple Proinflammatory Transcripts Are Upregulated and Correlate with IRAK4 Protein Levels in HS Skin Lesions



- Upregulation of TLRs, IL-1β/IL-36, MYD88, and multiple additional drivers of inflammation that all correlate with IRAK4 protein expression
- Highlights potential of IRAK4 targeting to treat diseases like HS characterized by marked pleiotropic inflammation

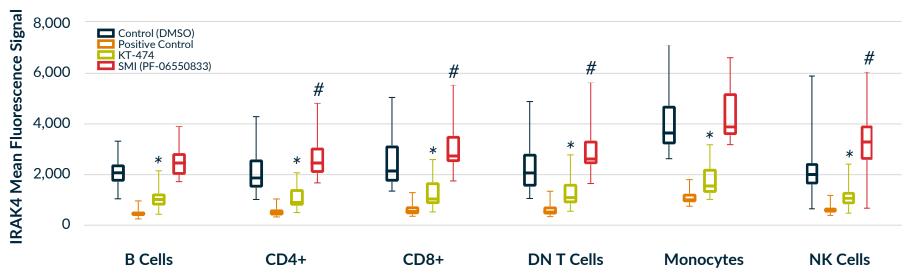
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# IRAK4 Degrader KT-474 Inhibits TLR-Mediated Induction of HS-Overexpressed Proinflammatory Transcripts in Healthy Monocytes



# IRAK4 Degrader Downregulates IRAK4 Expression Across All PBMC Subsets

### IRAK4 Levels Following Treatment with IRAK4 Degrader or Kinase Inhibitor



N=30 patients, One-way ANOVA\* KT-474 vs DMSO Control p≤0.0001, #SMI (PF-06550833) vs DMSO Control p≤0.02 Positive Control: cells treated with IRAK4 blocking antibody prior to IRAK4 staining

### KEY TAKEAWAYS

- Ex vivo incubation of HS blood with KT-474 reduced IRAK4 to a level approaching the lower limits of detection across all PBMC subsets, irrespective of baseline expression intensity, whereas an IRAK4 kinase inhibitor increased IRAK4 levels in T and NK cells
- Treatment with an IRAK4 kinase inhibitor led to an increase in IRAK4 levels of up to 2.6-fold in T and NK cells

# Non-interventional Study Conclusions

- IRAK4 is overexpressed in HS skin relative to healthy subjects due to increase in number of IRAK4+ dermal immune cells and epidermal keratinocytes
  - Higher expression in active HS skin Lesions compared to peri-lesion and/or non-lesion skin associated with increase in infiltrating IRAK4+ dermal immune cells
  - Higher expression in dermis and epidermis of non-lesion skin compared to skin of healthy subjects raises possibility that IRAK4
    overexpression may predispose to inflammatory lesion formation in HS
- Gene expression profiling shows upregulation of multiple mediators of inflammation in HS skin lesions that correlates with IRAK4 protein overexpression
  - Includes genes involved in TLR/myddosome signaling, inflammasome activity, prostaglandin generation, Th1 and Th17 inflammation, and monocyte/neutrophil migration and activation, thereby linking IRAK4 to the pleiotropic inflammation in HS
  - Neither proinflammatory gene expression nor IRAK4 protein expression correlated with disease severity, suggesting common pathophysiology underlying inflammation in active lesions irrespective of disease stage
- IRAK4 degrader KT-474 inhibits TLR-stimulated upregulation of HS-overexpressed inflammatory genes in monocytes from healthy subjects
  - Provides further evidence for role of IRAK4 in overexpression of these mediators of inflammation in HS skin lesions and rationale for targeting IRAK4 with KT-474 for the treatment of patients with HS
  - Phase 1 trial of KT-474 in healthy volunteers and patients with HS or AD is ongoing and includes pre- and post-treatment skin biopsies and blood sampling to assess the effect of KT-474 on the expression of IRAK4 and associated biomarkers of inflammation