



# INVENTING NEW MEDICINES

WITH TARGETED PROTEIN DEGRADATION

The bottom half of the slide features a wide banner. On the left, the Kymera logo is displayed with the 'K' in orange and 'YMER A' in white. The background of the banner is a dark night sky with a prominent constellation of stars connected by thin white lines. Below the stars, the silhouettes of mountains and a forest are visible against a dark horizon. The overall color palette is dark with blue, orange, and white accents.

February 2022

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# Proteome Editing is the New Frontier of Medicine

## Genome

- Essentially static
- Alterations are responsible for some diseases
- Editing is irreversible

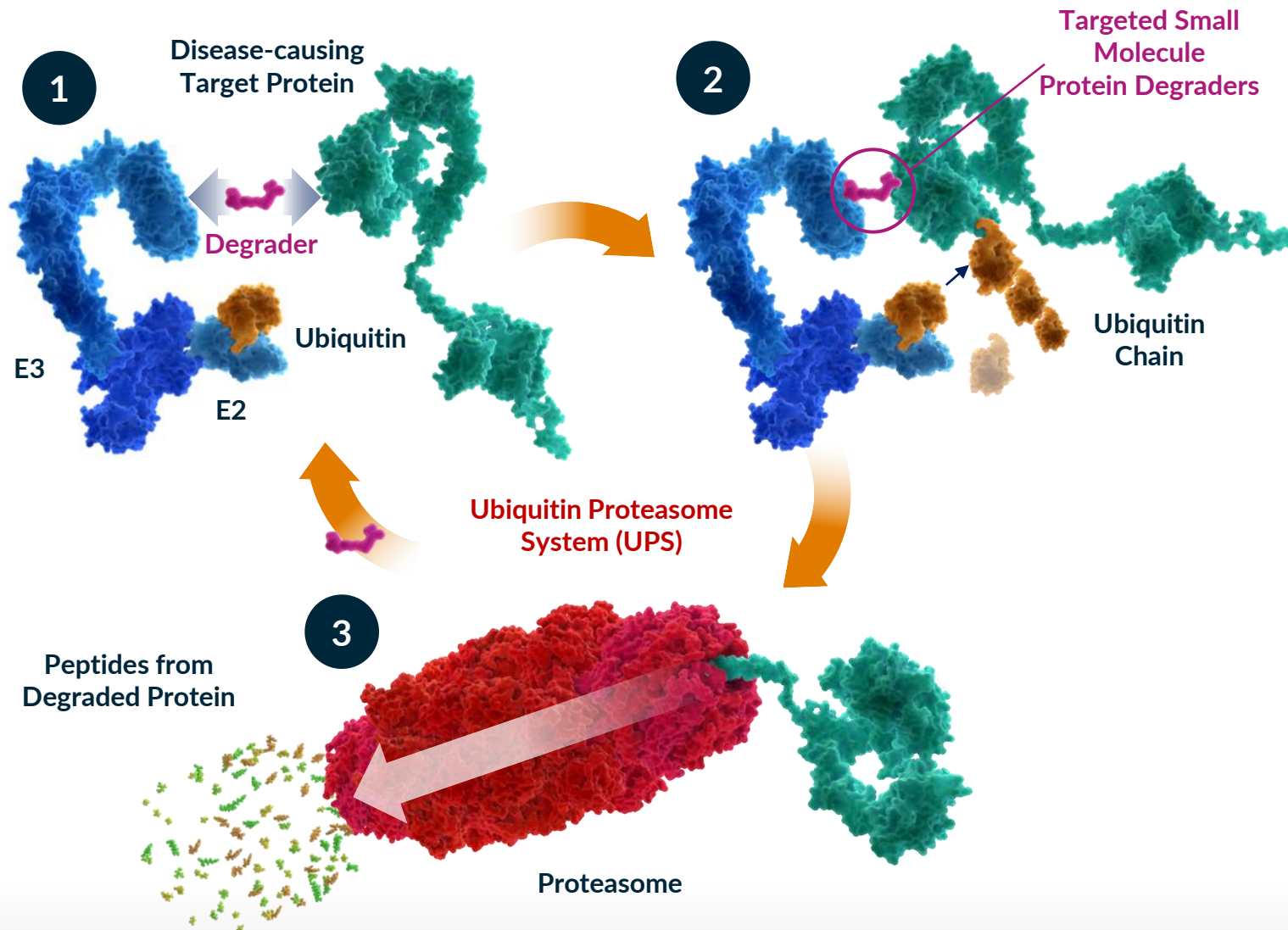
Encodes

## Proteome

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

# Proteome Editing with Targeted Protein Degradation

## A Nobel Prize (2004) Inspired Technology



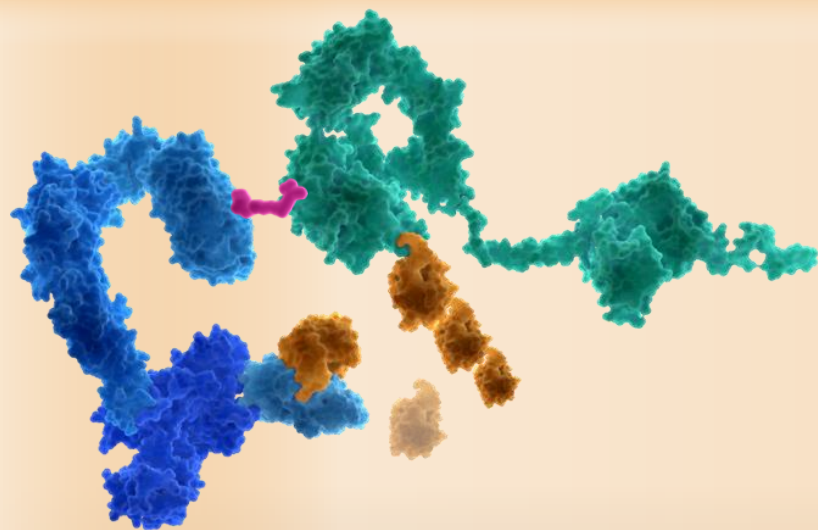
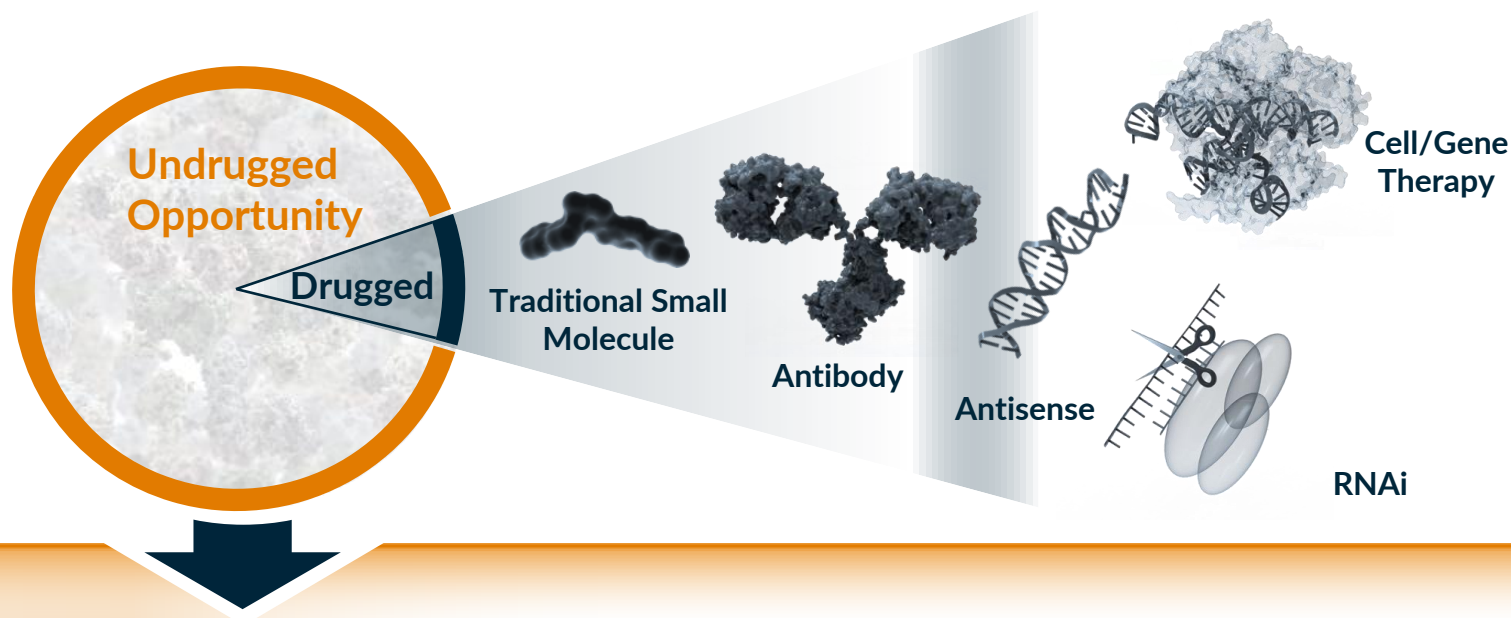
### Expanded Opportunities

- 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



## Existing Modalities



Therapeutic Modality	Drugs FDA Approved
Small molecule inhibitor	>2000
Antibody	>100
ASO	~10
Cell Therapy	~5
Gene Therapy	~4
RNAi	~3
Gene editing	0

## Targeted Protein Degradation

	Drugs FDA Approved	Drugs in Clinical Development
Degraders	4	>15

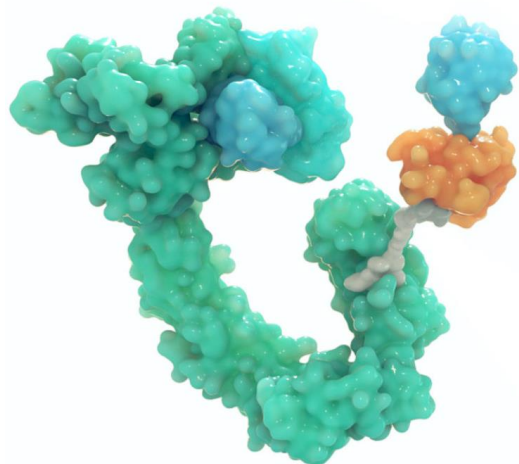
2010

2020

2030

- 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

# Introduction to Kymera



## OUR VISION

To be a disease- and technology-agnostic, 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**
- Establishing **many “firsts”** for TPD with initial programs
- Three clinical stage programs and **a deep pipeline positioned to deliver  $\geq 1$  IND/year**
- Focused on **continued innovation** in platform and discovery
- Well capitalized with **\$568 million of cash** as of 12/31/21

# Kymera's Pipeline of Novel Protein Degraders

Pathway	Program	Indication(s)	Discovery	IND Enabling	Phase 1	Phase 2	Next Milestones	Rights*
IL-1R/TLR	IRAK4	Immuno-inflammatory Diseases: HS, AD, RA, others	<div>KT-474</div> <div>Multiple molecules staged as potential back ups if needed</div>				<div>P1 Patient POB in 2H22</div>	<div>KYMERASanofi</div>
	IRAKiMiD (IRAK4, Ikaros, Aiolos)	MYD88 <sup>MT</sup> Tumors	<div>KT-413</div>				<div>POM in 2022</div>	<div>KYMERASanofi</div>
JAK/STAT	STAT3	Liquid & Solid Tumors	<div>KT-333</div>				<div>POM in 2022</div>	<div>KYMERASanofi</div>
	STAT3	Autoimmune & Fibrotic Diseases						<div>KYMERASanofi</div>
p53	MDM2	Liquid & Solid Tumors	<div>KT-253</div>				<div>IND in 2H22</div>	<div>KYMERASanofi</div>
Collaboration	Confidential	Confidential						<div>KYMERASanofi</div>
Discovery Pipeline	Several Discovery Programs			Multiple programs in immune-inflammatory and oncology indications to deliver ≥ 1 IND/year			<div>≥ 1 DC: 2H22</div>	<div>KYMERASanofi</div>
Collaboration	6 Undisclosed Programs			6 targets in 5 disease areas outside of immunology-inflammation and oncology				<div>KYMERASanofi</div>

\*Option to participate equally in the development and commercialization of Sanofi-partnered programs in the US

● = Oncology ● = Immunology-Inflammation



# How We Select Our Targets

## Drug Development Philosophy



Unmet  
Medical  
Need



Validated  
Biology



Undrugged  
Node



Precision  
Medicine  
Approach

## Target Types



Inadequately Drugged  
Targets with Clear  
Degrader Advantage  
e.g. IRAK4, MDM2



Undrugged Targets by  
any other technology  
e.g. STAT3



Clinically Validated  
Targets Enabled by E3  
Ligase Tissue 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

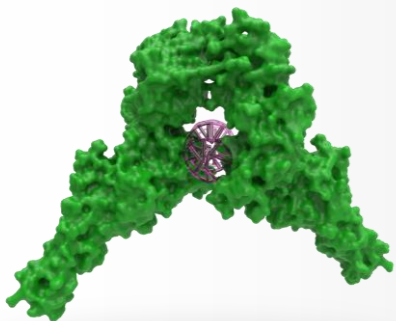
### Other Disease Areas:

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

# Kymera's Differentiated Approach to TPD

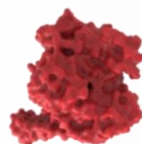
## TARGET SELECTION

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



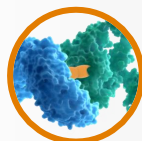
## PLATFORM

Significantly differentiated investments



**Tissue-selective E3 Ligases**

Enabling a whole new generation of clinical programs

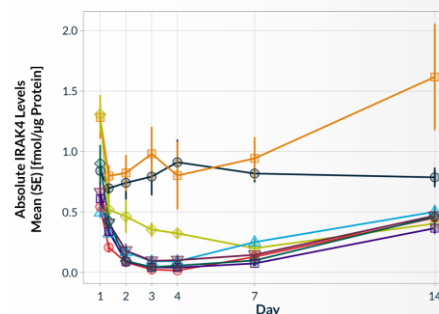


**New Molecular Glue Approach**

Novel strategy to address undrugged/un-ligandable targets

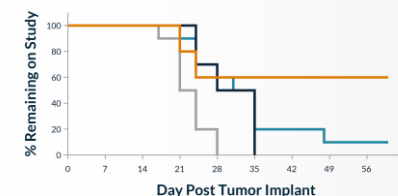
## CLINICAL

Innovative clinical trial designs for degrader development



## TPD "FIRSTS"

Kymera has accomplished several "firsts" in TPD



**KT-474/ IRAK4**

**FIRST** randomized, placebo-controlled trial in healthy volunteers

**KT-333/ STAT3**

**FIRST** Hetero-bifunctional degrader against an undrugged transcription factor in clinic

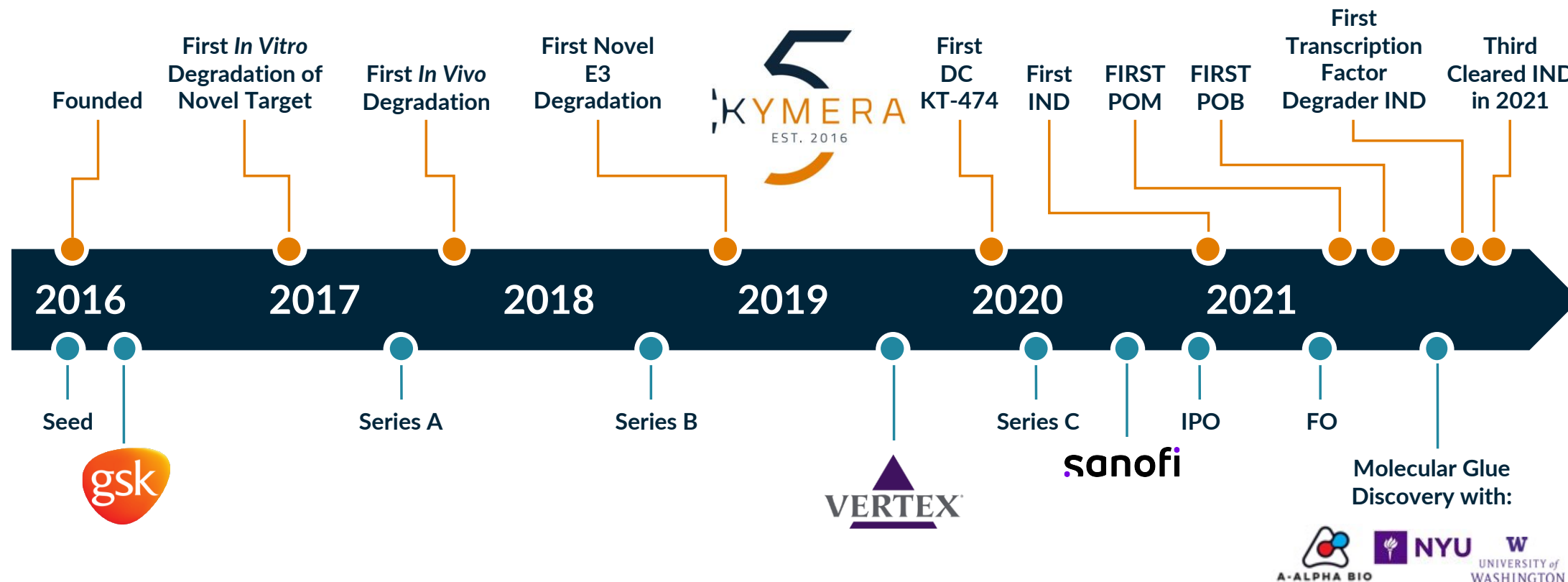
## INNOVATION

Serious commitment to constant evolution of our science



# Our First 5 Years, a Foundation for the Future

Drug Development → 3 Cleared IND's in first 5 years



Financing and Partnerships → > \$850MM raised

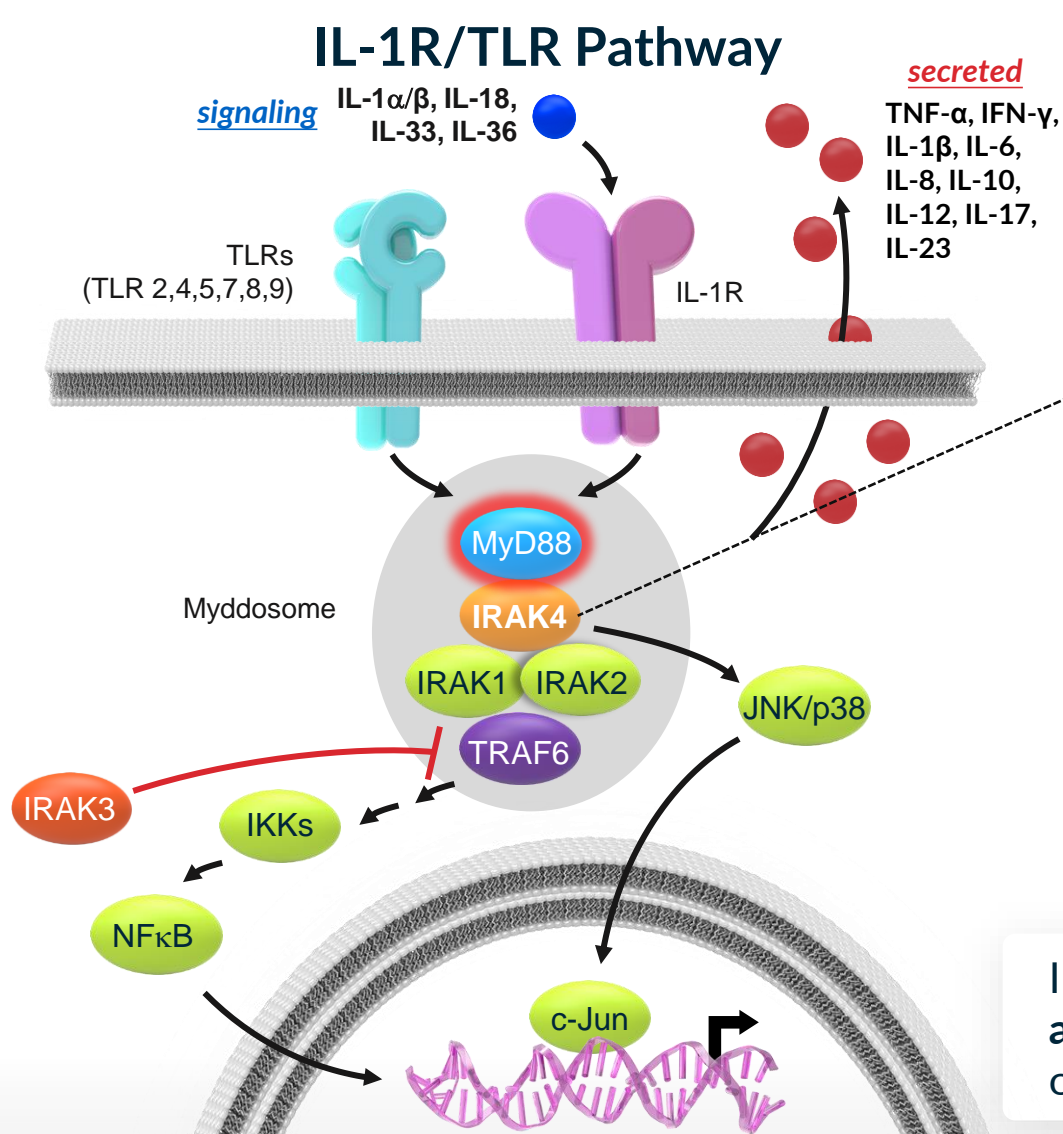




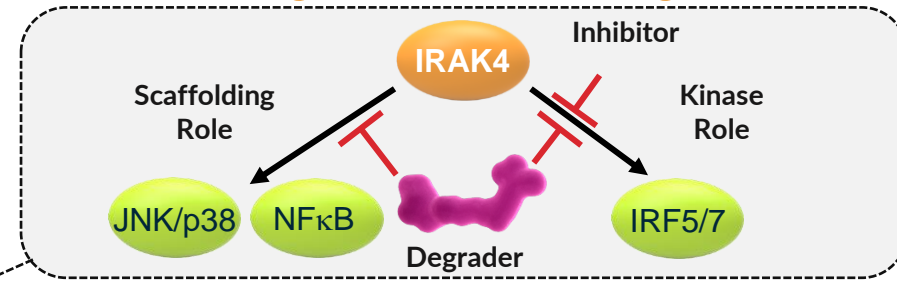
# IRAK4



# IRAK4 Targeting: Degradation Advantage, Clinical Validation, and Human Genetics De-risking



## Degradation Advantage



## Clinical Pathway Validation

IL-1α/IL-1β : 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

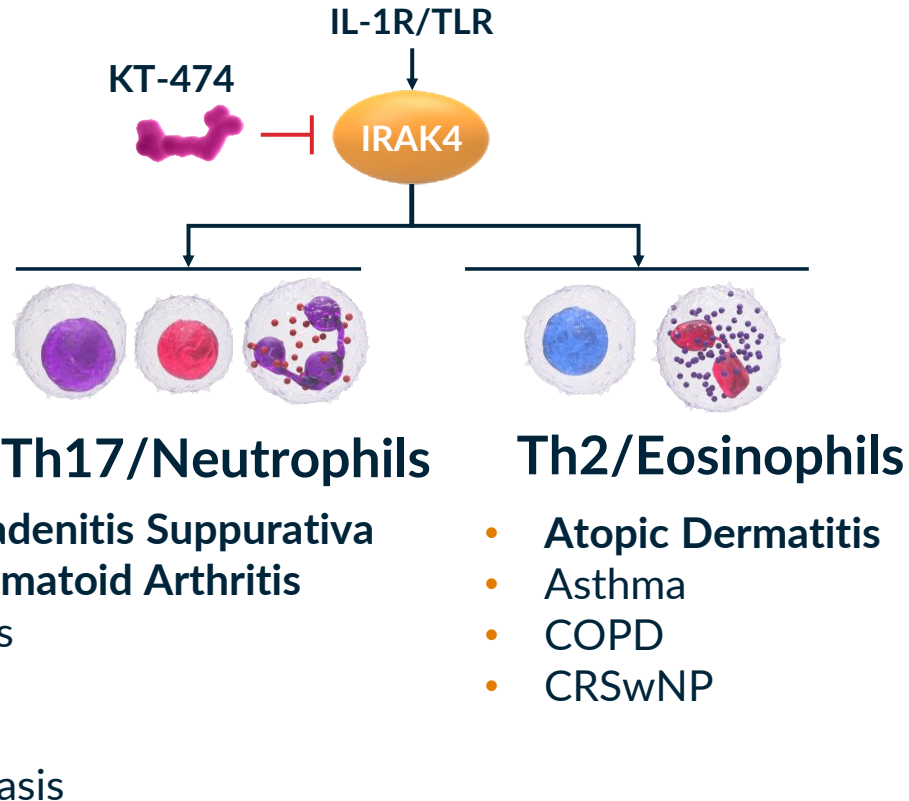
## Human Genetics

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

# Development Opportunities for IRAK4 Degradar in Inflammation

## Potential for Broad Activity Across Th1-Th17 and Th2 Diseases



**\$ 150B** 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)

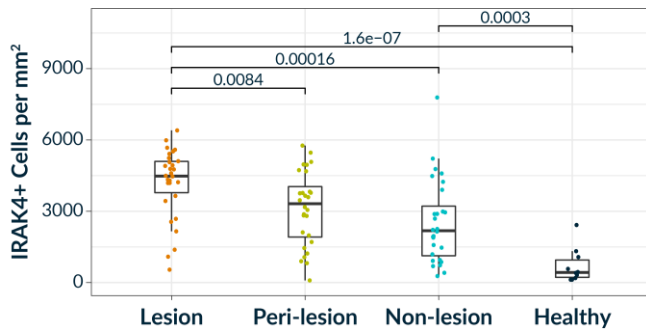
# IRAK4 Protein Expression in Autoimmune Diseases

## Upregulation in Skin of HS Patients Compared to Healthy Subjects

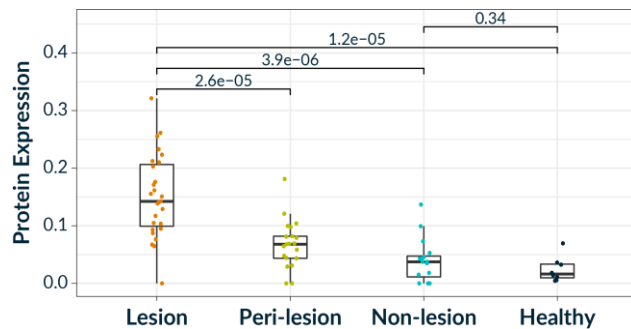
IRAK4 protein levels overexpressed in HS patient skin lesions

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

### Immunofluorescence (IF)



### Mass Spectrometry (MS)



### Histology

H&E

### IF Stain

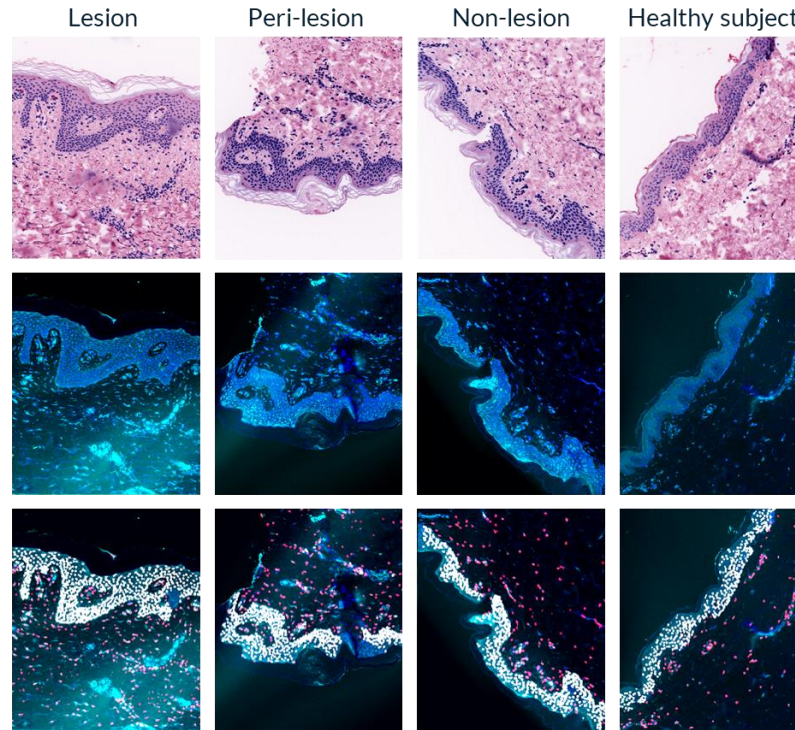
Nuclear

IRAK4

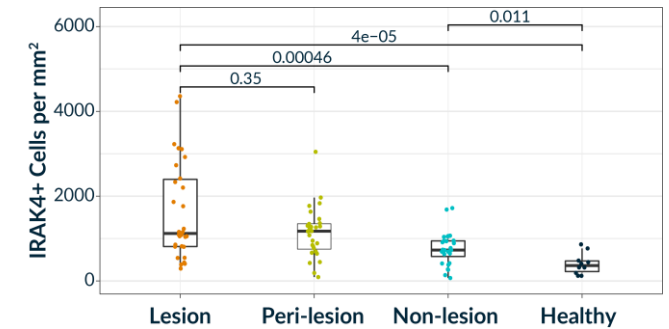
### Morphology Mask

Epidermal Keratinocytes

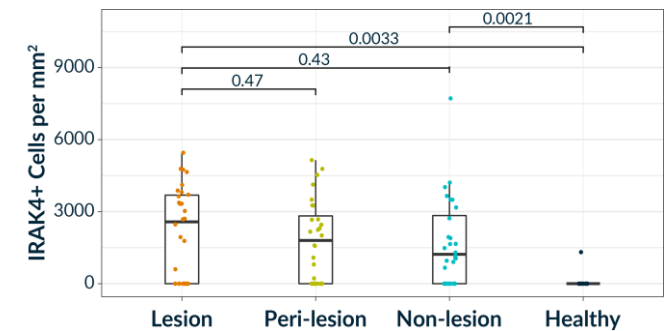
Dermal Immune cells



### Dermal Immune Cells

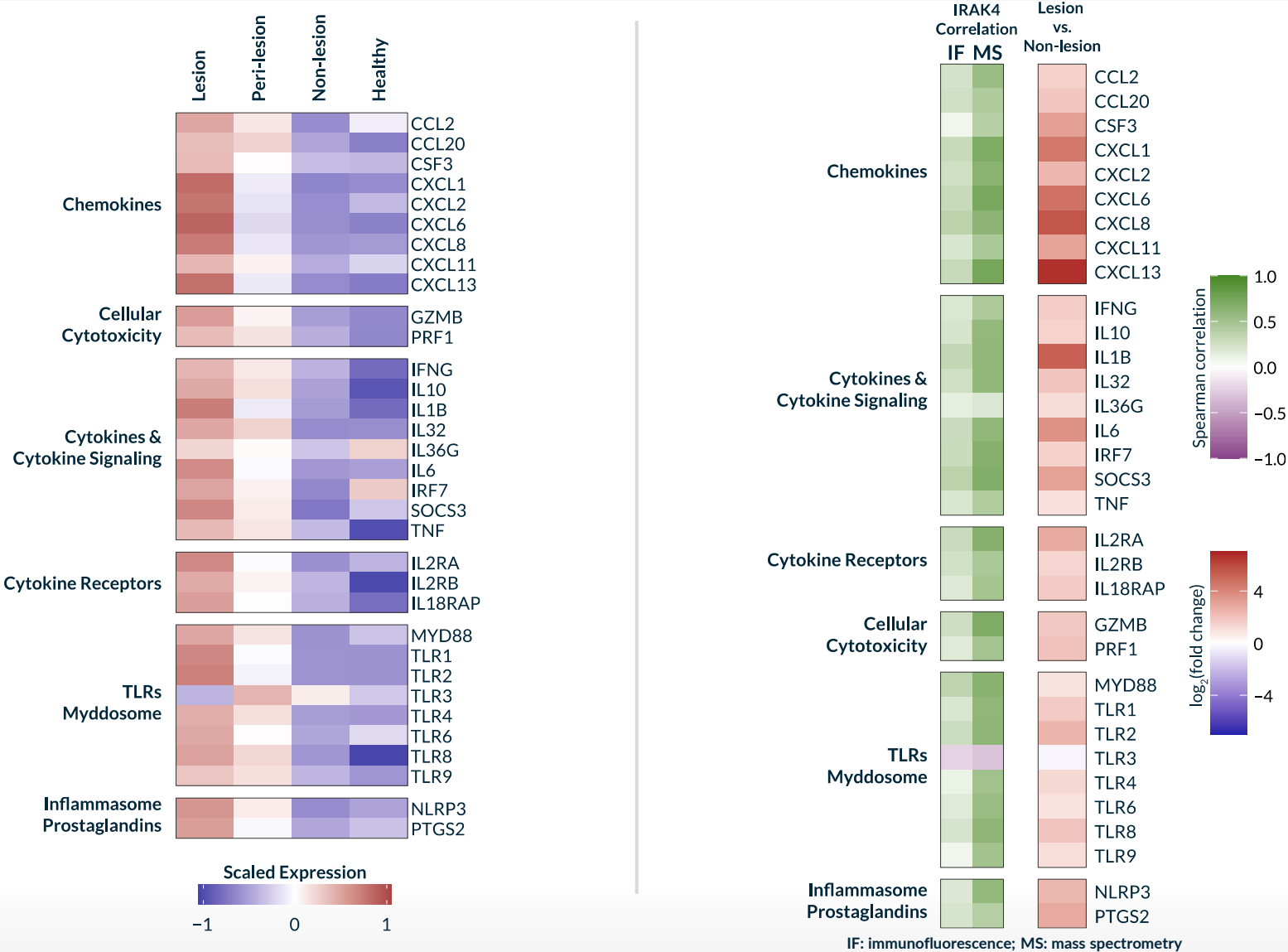


### Epidermal Keratinocytes



Alavi et al., Society for Investigative Dermatology Annual Meeting, 2021

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

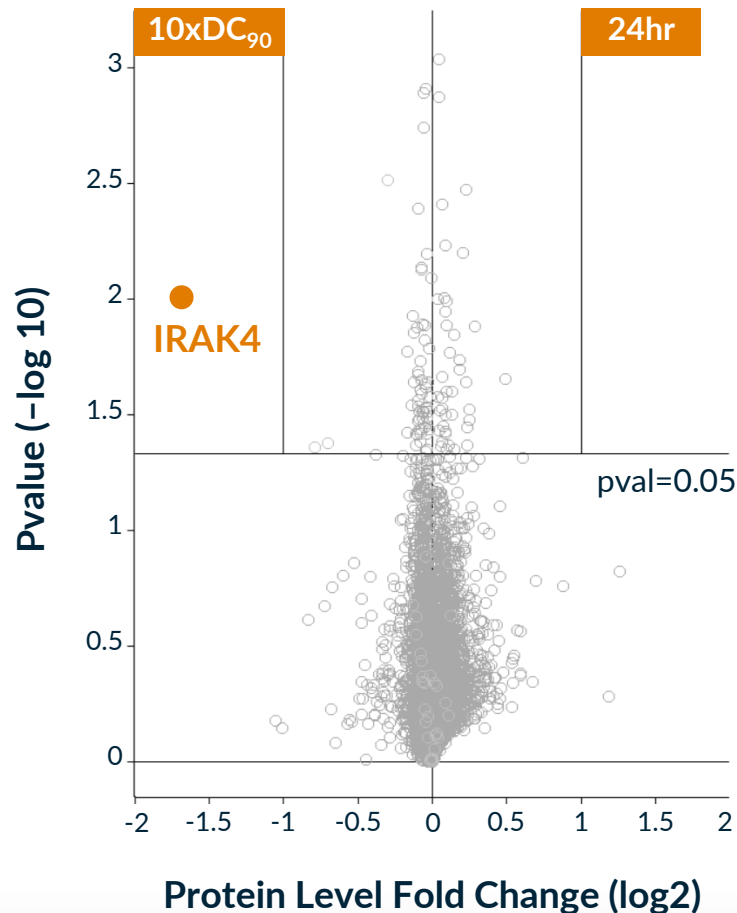


- Upregulation of TLRs, IL-1 $\beta$ /IL-36, MYD88, and multiple additional drivers of inflammation that all correlate with IRAK4 protein expression
- Highlights potential of IRAK4 targeting to treat diseases like HS characterized by marked pleiotropic inflammation



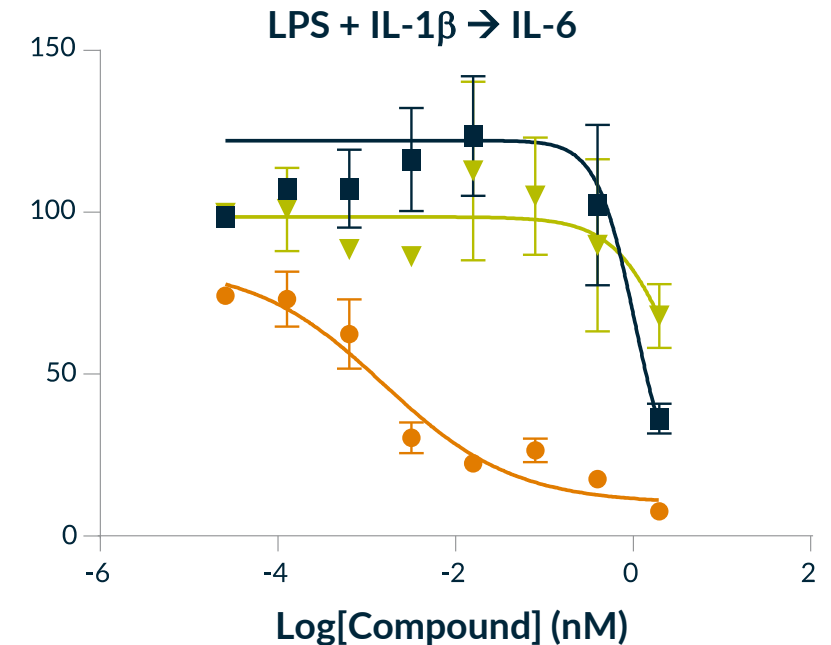
# KT-474: Potent and Specific IRAK4 Degradation with Impact on Cytokines Superior to Kinase Inhibition

## Degradation and Selectivity



- KT-474  $DC_{50}$  = 2.1 nM in human immune cells
- KT-474 only degraded IRAK4 in human immune cells at concentration 10-fold above the  $DC_{90}$
- KT-474 better able to inhibit IL-6 under both LPS and LPS + IL-1 $\beta$  than clinically active IRAK4 SM kinase inhibitor PF-06550833

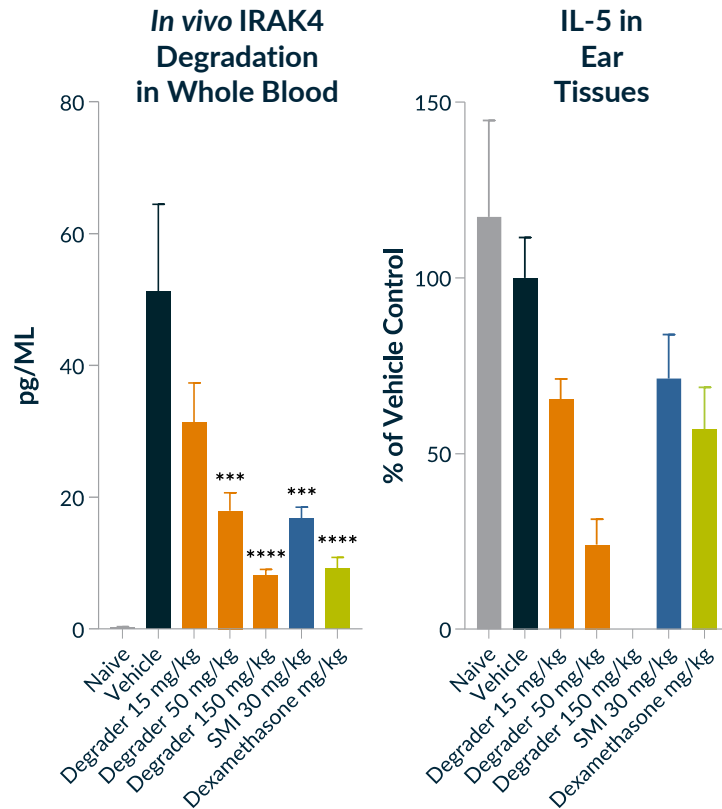
## Superiority over SM kinase Inhibitor



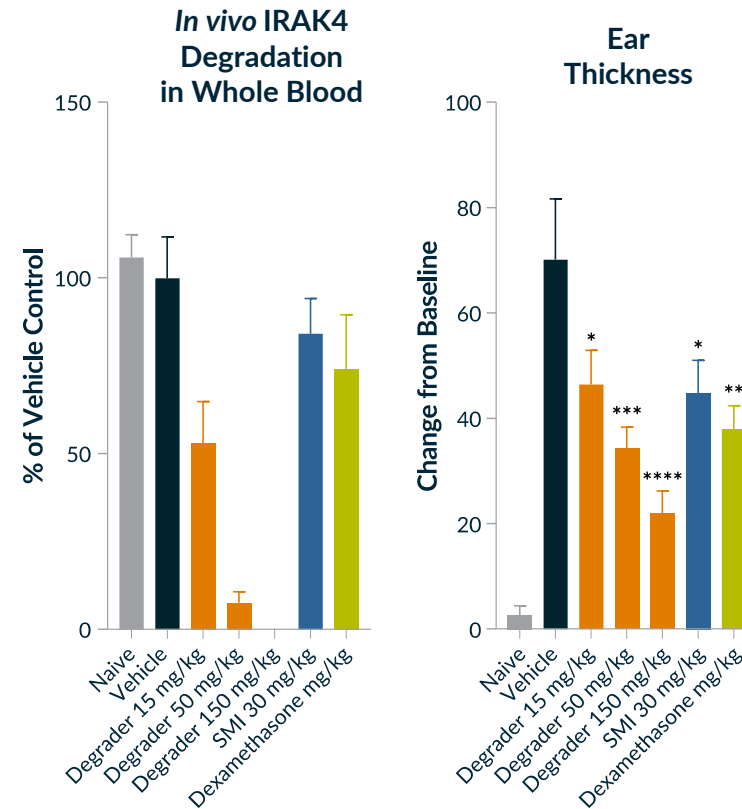
Legend	Compound	IL-6 $IC_{50}$ (nM)
●	IRAK4 Degradation	0.8
■	Negative control	450
▼	IRAK4 SMI (PF-06550833)	N/A

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

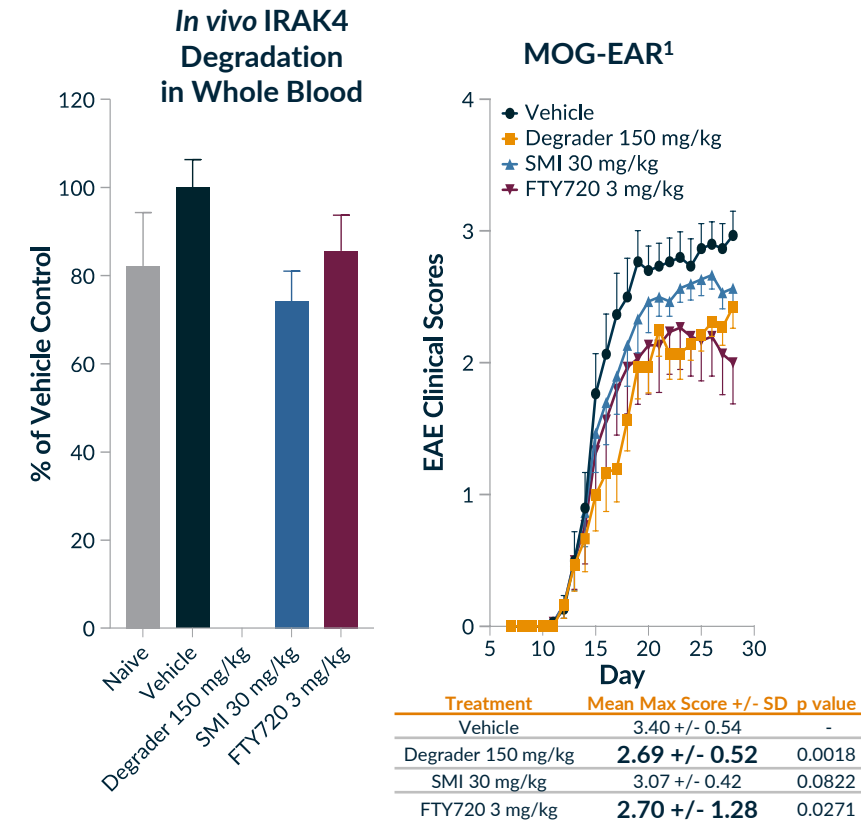
## rmIL-33 Intradermal Challenge Model



## rhIL-36 $\alpha\beta\gamma$ Intradermal Challenge Model



## Th17-mediated Multiple Sclerosis Model



IRAK4 knockdown of  $\geq 85\%$  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 (Imiquimod-Psoriasis) activation that was superior to IRAK4 small molecule inhibitor

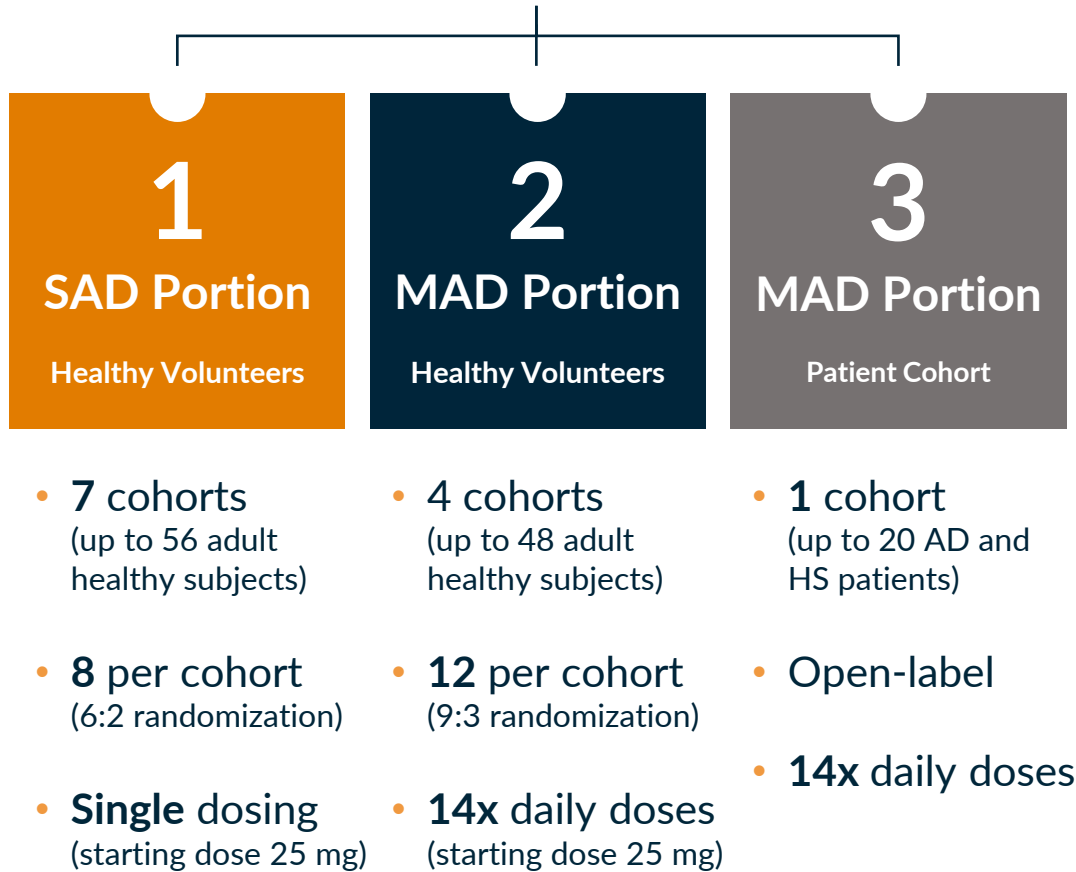
1. Myelin Oligodendrocyte Glycoprotein-induced Experimental Autoimmune Encephalomyelitis (MOG-EAR) Model

# KT-474 Phase 1 Trial Design Includes HV and Patients

Double-blind, Placebo-controlled, Single Ascending Dose (SAD) and Multiple Ascending Dose (MAD) trial

## Endpoints

## Three-part Phase 1 Design



### Primary

- Safety & tolerability

### Secondary/ Exploratory

SAD & MAD

- Pharmacokinetic measures (half-life, bioavailability)
- IRAK4 knockdown in PBMC

### Exploratory

SAD & MAD

- Ex vivo response of whole blood to TLR agonists (SAD & MAD) and IL-1 $\beta$  (MAD only)

### Exploratory

MAD Only

- IRAK4 knockdown in skin biopsies
- Proinflammatory cytokine and chemokine levels in skin biopsies (Patients only)
- Plasma C-reactive protein (HV and Patients) and cytokine levels (Patients only)

# SAD/MAD Enrollment Status and Demographics

**SAD 1-7 (n=57)**

**MAD 1-4 (n=48)**

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## Gender

Female

29

9

Male

28

39

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## Median age, years (range)

38.0 (20-55)

37.5 (20-55)

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## Ethnicity

- Hispanic or Latino
- Black or African American
- Non-Hispanic or Latino- White
- Asian

42

34

8

8

5

6

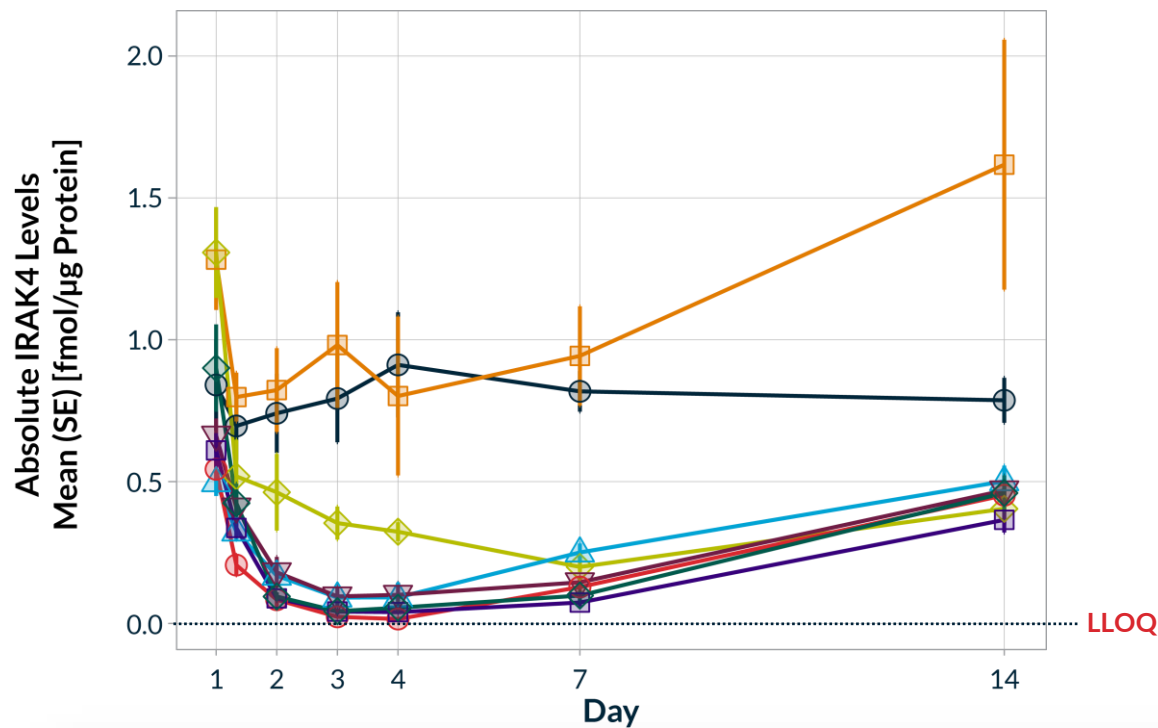
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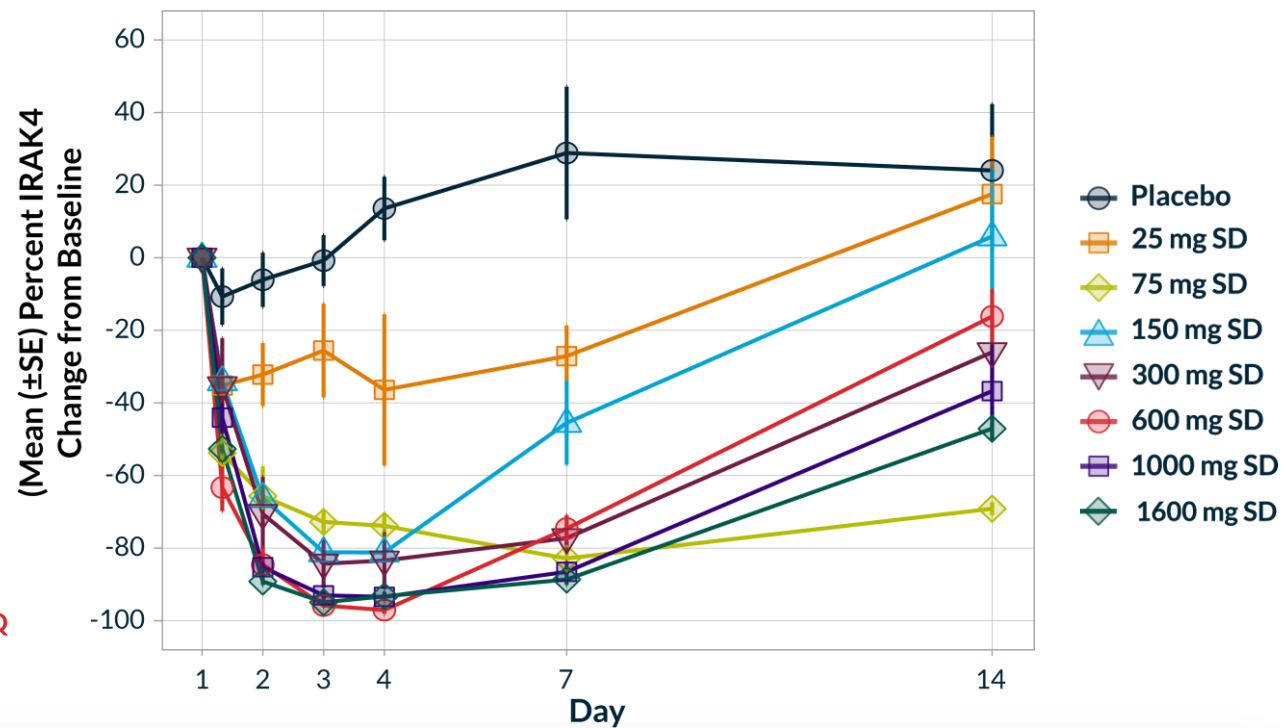


# KT-474 Achieved Deep and Dose-Dependent IRAK4 Degradation after Single Oral Doses that Lasted for at Least 6 Days

## Absolute IRAK4 Levels



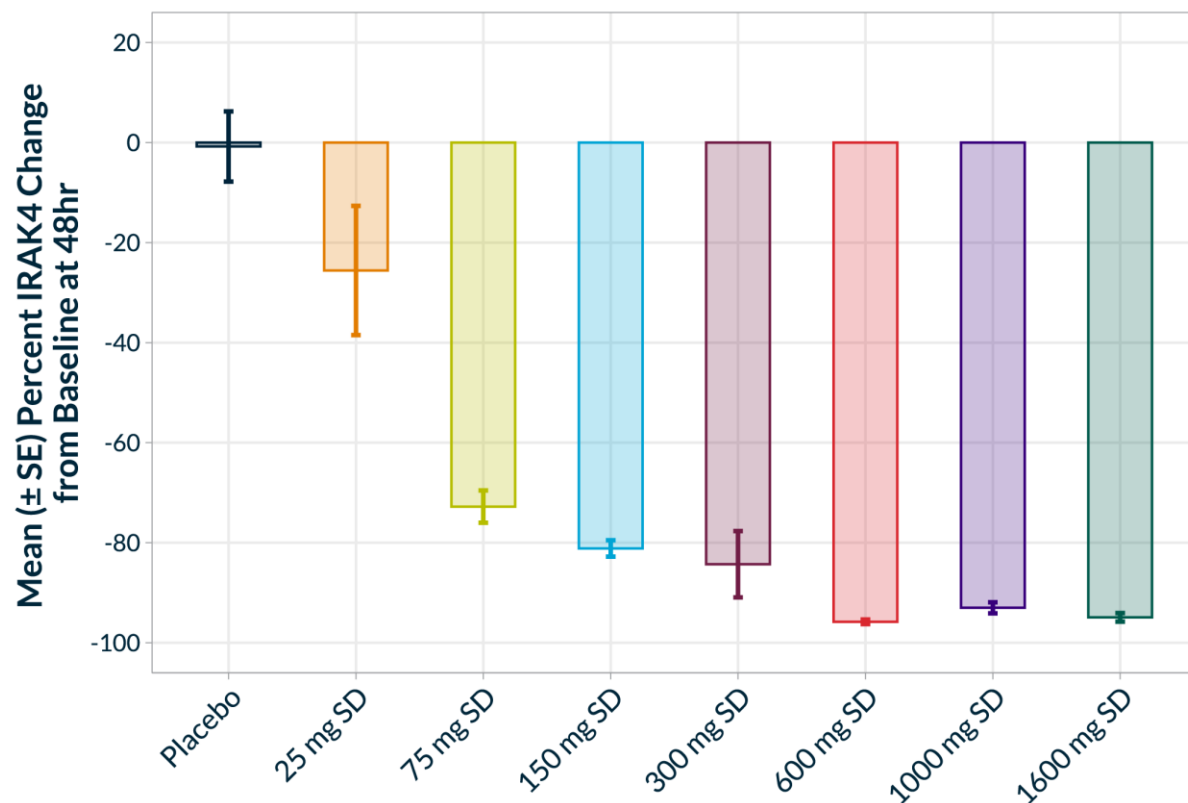
## Mean % Reduction of IRAK4



- 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

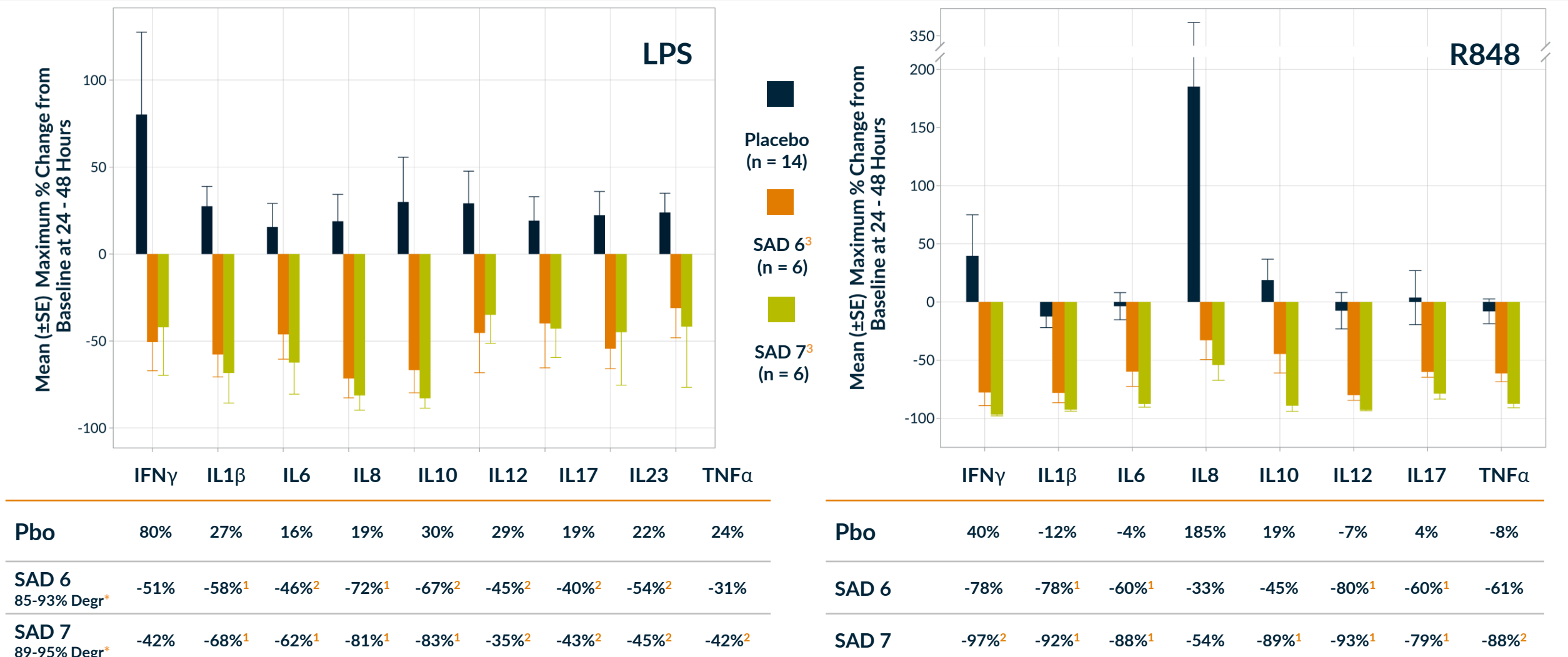


	N	Mean IRAK4 Change	Median IRAK4 Change	p value
Placebo	13	-1%	-2%	--
25 mg	6	-26%	-39%	0.1
75 mg	6	-73%	-75%	<0.0001
150 mg	6	-81%	-82%	<0.0001
300 mg	6	-84%	-89%	<0.0001
600 mg	7	-96%	-96%	<0.0001
1000 mg	5	-93%	-94%	<0.0001
1600 mg	6	-95%	-95%	<0.0001

\* 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



# 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

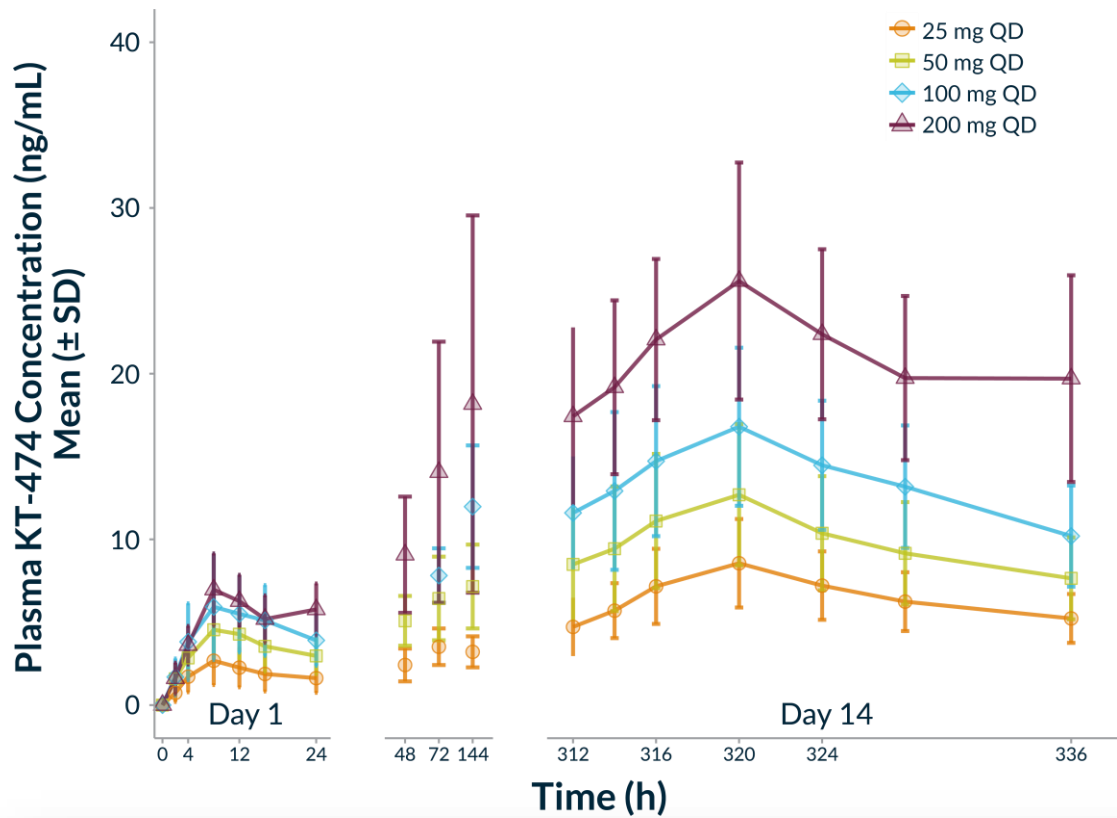
Agent/Stimulus	Target	IFN $\gamma$	TNF $\alpha$	IL-1 $\beta$	IL-6	IL-8	IL-17	IL-12	IL-23	IL-10
KT-474/LPS	IRAK4 (degrader)	✓	✓	✓	✓	✓	✓	✓	✓	✓
KT-474/R848	IRAK4 (degrader)	✓	✓	✓	✓	✓	✓	✓		✓
CA-4948/R848	IRAK4* (inhibitor)				✓					
GS-5718/R848	IRAK4 (inhibitor)		✓							
ATI-450/LPS	MK2		✓	✓	✓	✓				
ATI-450/IL-1 $\beta$	MK2		✓		✓	✓				
LY2775240/LPS	PDE4		✓							
Iberdomide/LPS	Ikaros/ Aiolos			✓						
JNJ-61803534/ T cell activation	ROR $\gamma$						✓			

\* 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



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



Steady-State (Day 14) PK Parameters

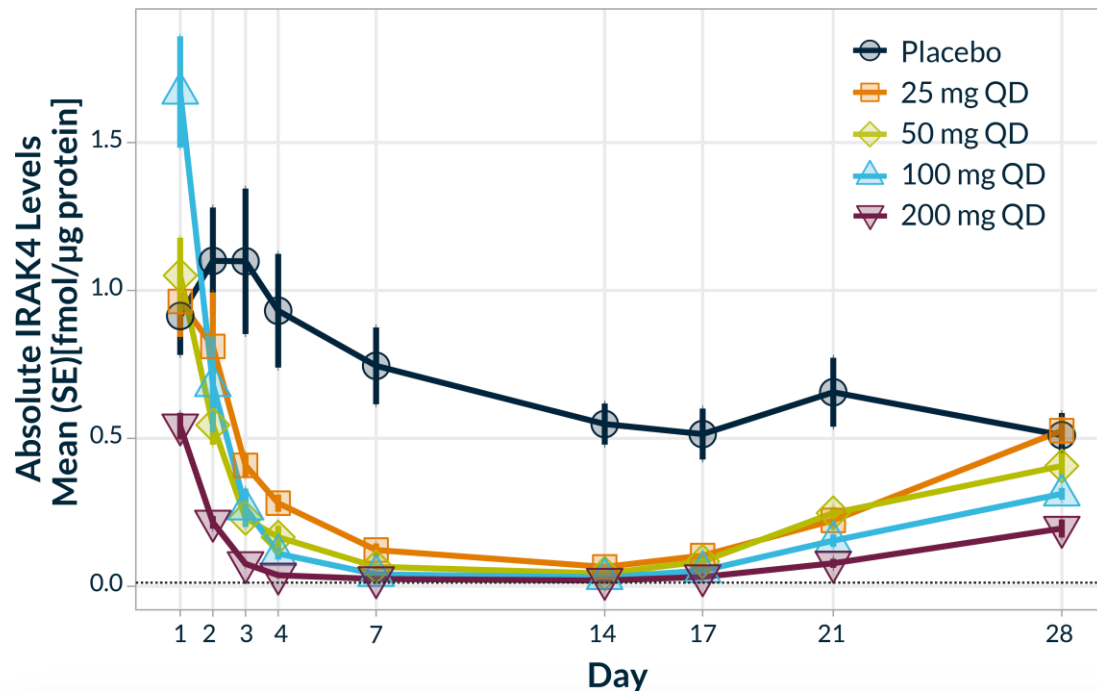
PK Parameter	25 mg QD (n = 9)	50 mg QD (n = 9)	100 mg QD (n = 9)	200 mg QD (n = 9)
C <sub>max</sub> (ng/mL)	8.20 (34.5)	12.0 (39.1)	16.1 (32.0)	25.2 (26.7)
t <sub>max</sub> (h) <sup>a</sup>	8.00 (4.0 – 8.0)	8.00 (8.0 – 8.0)	8.00 (8.0 – 12)	8.00 (8.0 – 12)
AUC <sub>24</sub> (ng*h/mL)	153 (30.8)	224 (39.4)	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>C<sub>max</sub></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<sub>max</sub> where median(range) are presented  
Accumulation Ratio represents fold change in exposure from Day 1 to Day 14

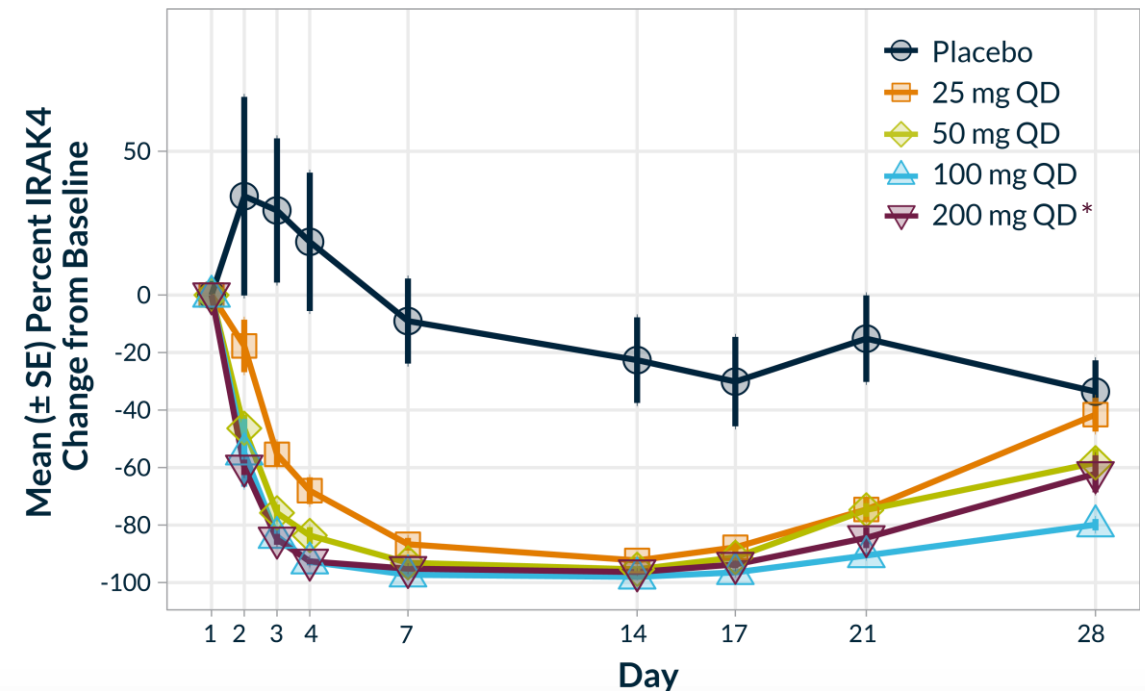
- High steady-state exposures with QD dosing, 3- to 4-fold increase in exposure on Day 14
  - Day 14 C<sub>trough</sub> in range where >90% IRAK4 degradation is expected
- Steady-state reached by Day 7 of dosing

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

## Absolute IRAK4 Levels



## Mean % Reduction of IRAK4

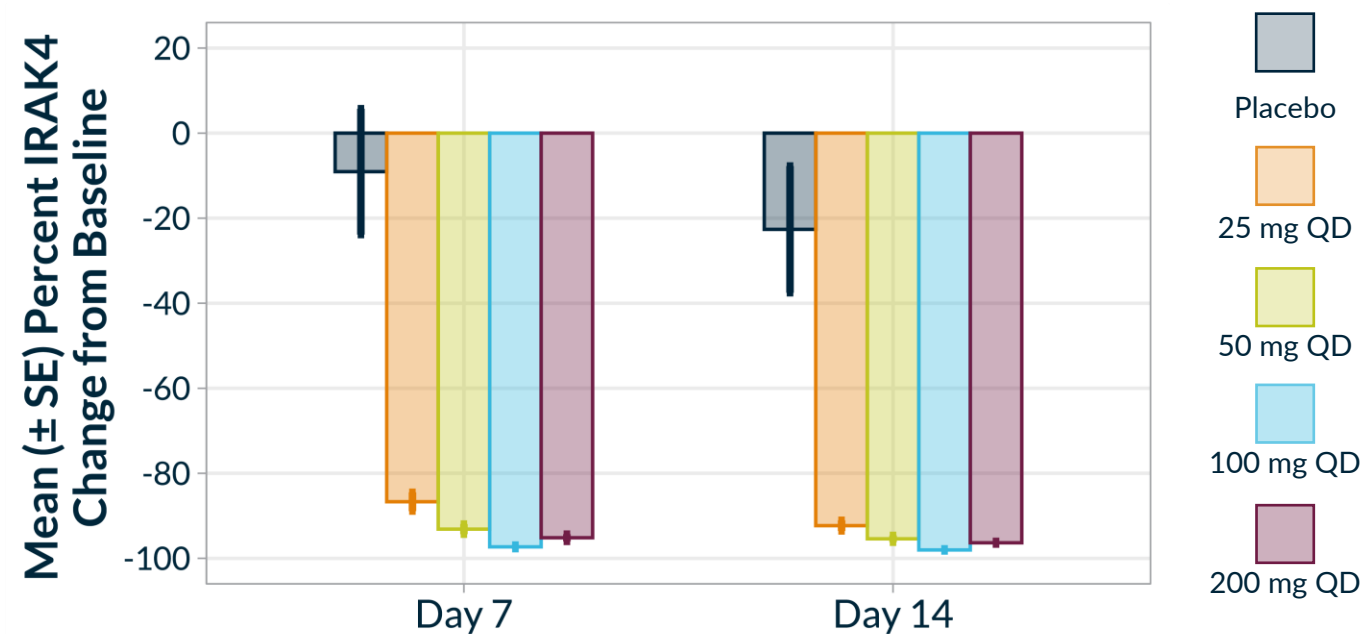


- Detected by mass spectrometry in circulating PBMC
- Steady state IRAK4 reduction achieved between Days 7 and 14
- Recovery towards baseline by Day 28 (2 weeks after last dose)
- MAD 2 through 4 approached Lower Limit of Quantitation (LLOQ)

# 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



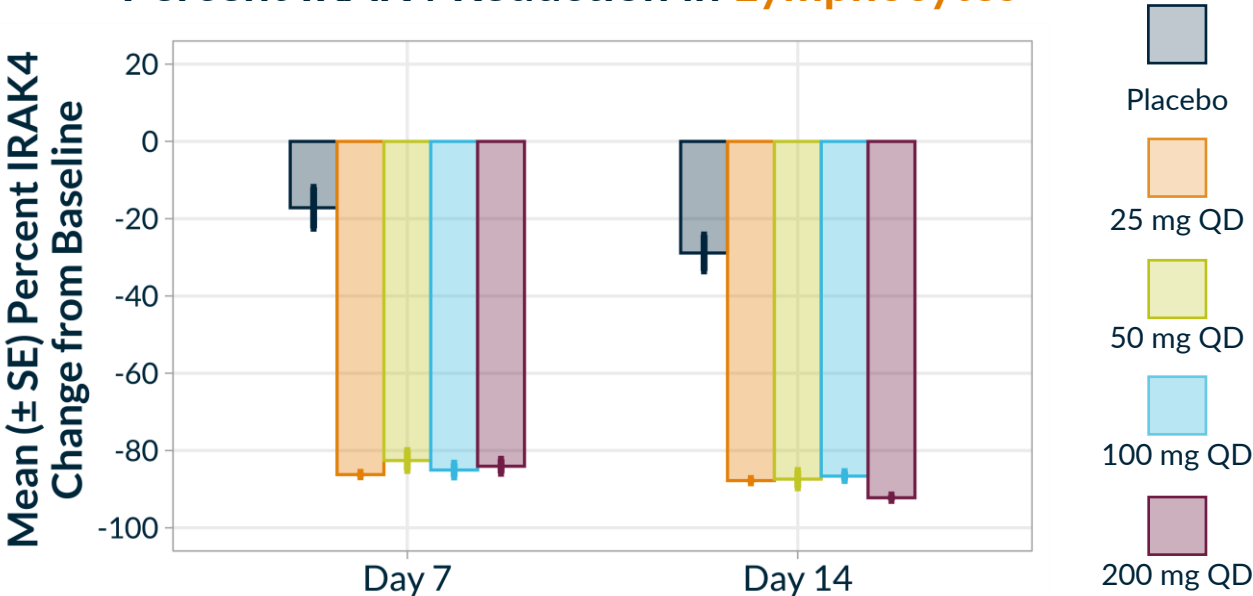
	Placebo (n=12)	25 mg QD (n=9)	50 mg QD (n=9)	100 mg QD (n=9)	200 mg QD (n=9)
Mean Day 7	-9%	-87%	-93%	-97%	-95%
Mean Day 14	-23%	-92%	-95%	-98%	-96%
p value*		<0.0001	<0.0001	<0.0001	<0.0001

\* 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

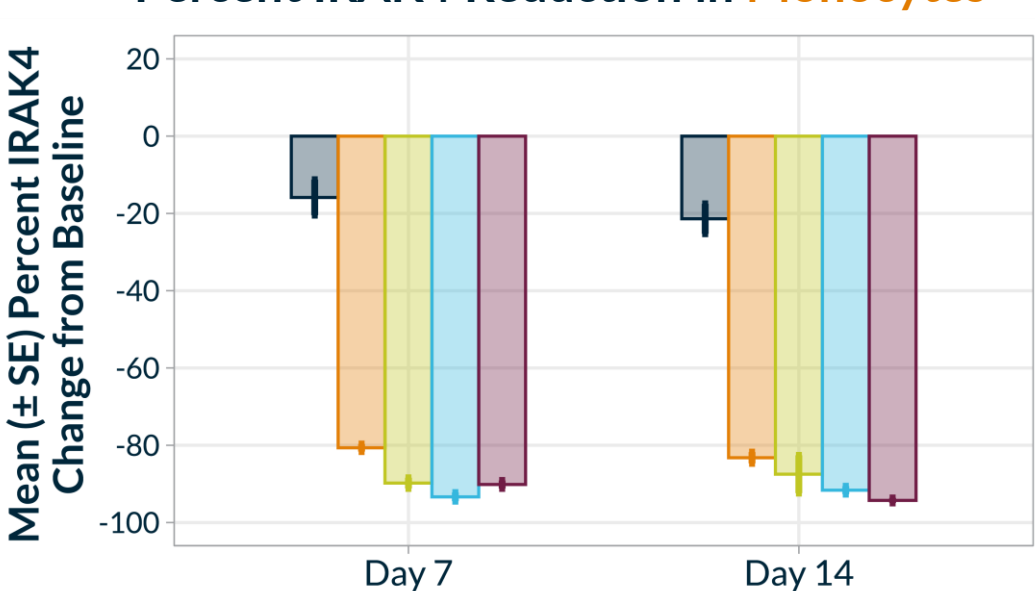
Percent IRAK4 Reduction in **Lymphocytes**



	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	-17%	-86%	-83%	-85%	-84%
Mean Day 14	-29%	-88%	-87%	-87%	-92%
<i>p-value*</i>		<0.0001	<0.0001	<0.0001	<0.0001

\* p-values relative to placebo

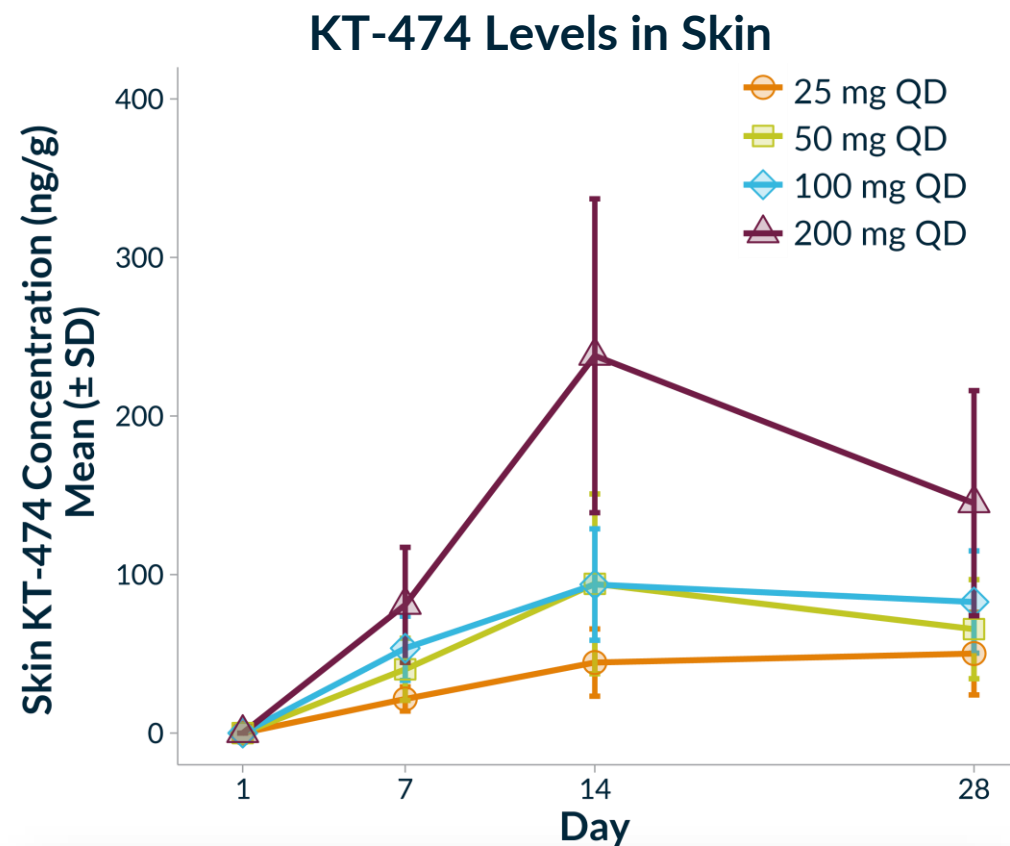
Percent IRAK4 Reduction in **Monocytes**



	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	-16%	-81%	-90%	-93%	-90%
Mean Day 14	-21%	-83%	-87%	-92%	-94%
<i>p-value*</i>		<0.0001	<0.0001	<0.0001	<0.0001

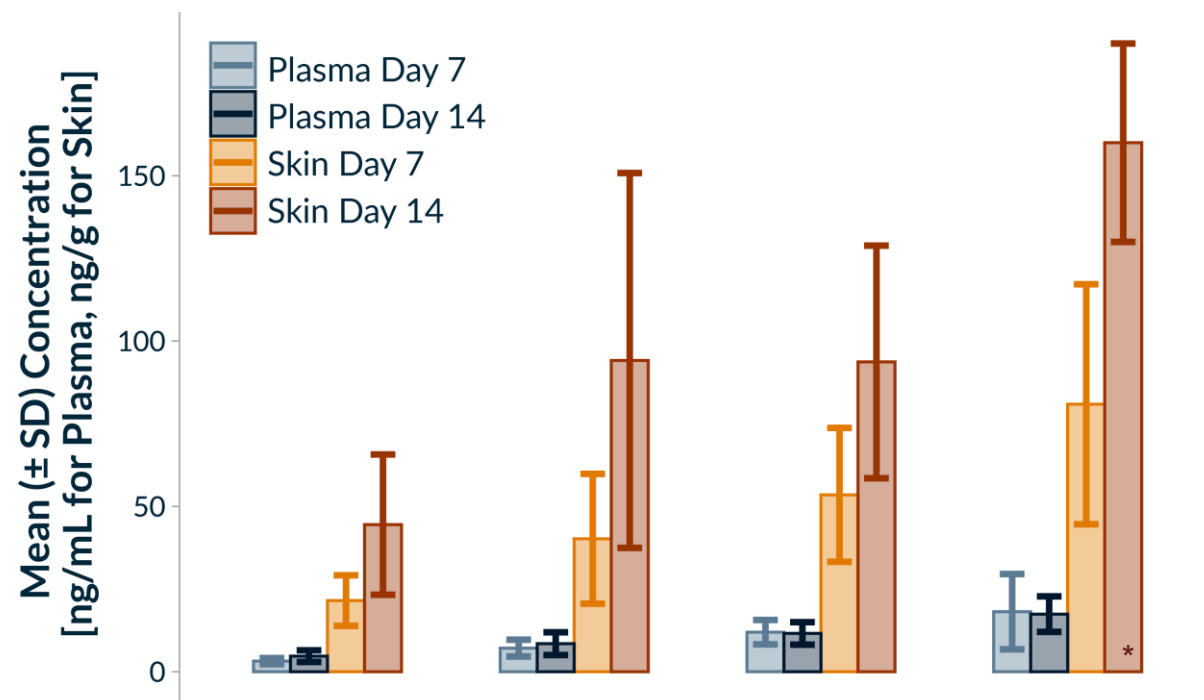


# Once Daily Dosing Resulted in High Skin Exposures Exceeding Plasma



- Increasing exposures through Day 14
- $C_{trough}$  levels in skin ~10-14 fold higher than plasma on Day 14

### Substantially Larger Skin vs Plasma Exposures at $C_{trough}$

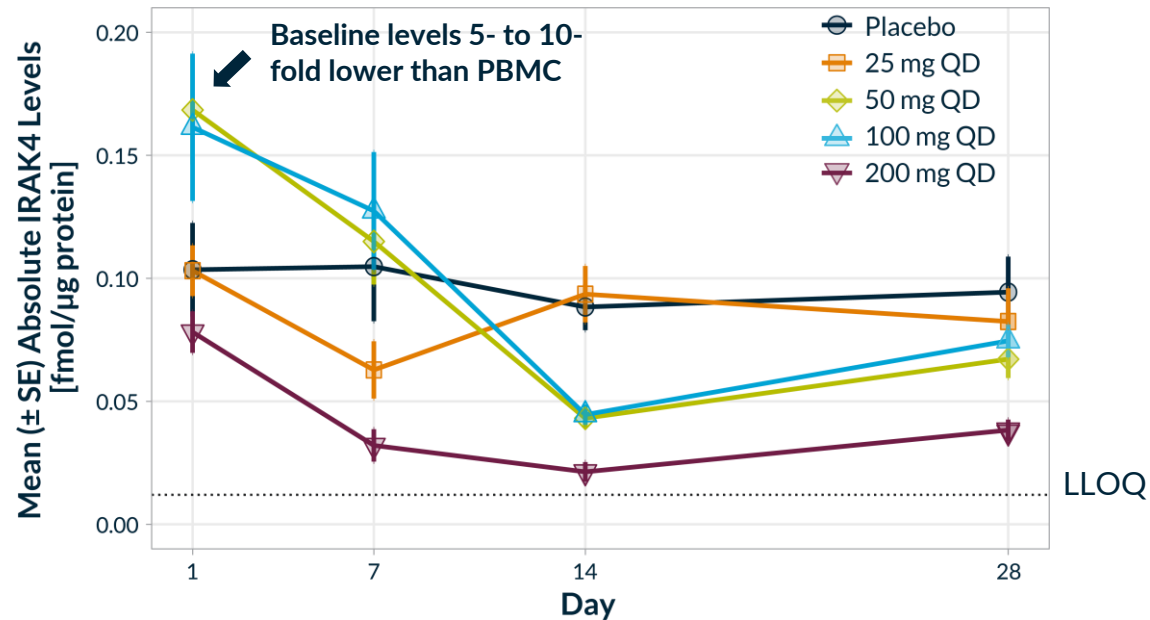


ng/mL (plasma) ng/g (skin)	25 mg QD (n=9)	50 mg QD (n=9)	100 mg QD (n=9)	200 mg QD (n=9)
Plasma Day 7	3.21	7.15	11.9	18.2
Plasma Day 14	4.72	8.49	11.6	17.4
Skin Day 7	21.5	40.2	53.5	80.9
Skin Day 14	44.5	94.2	93.7	238

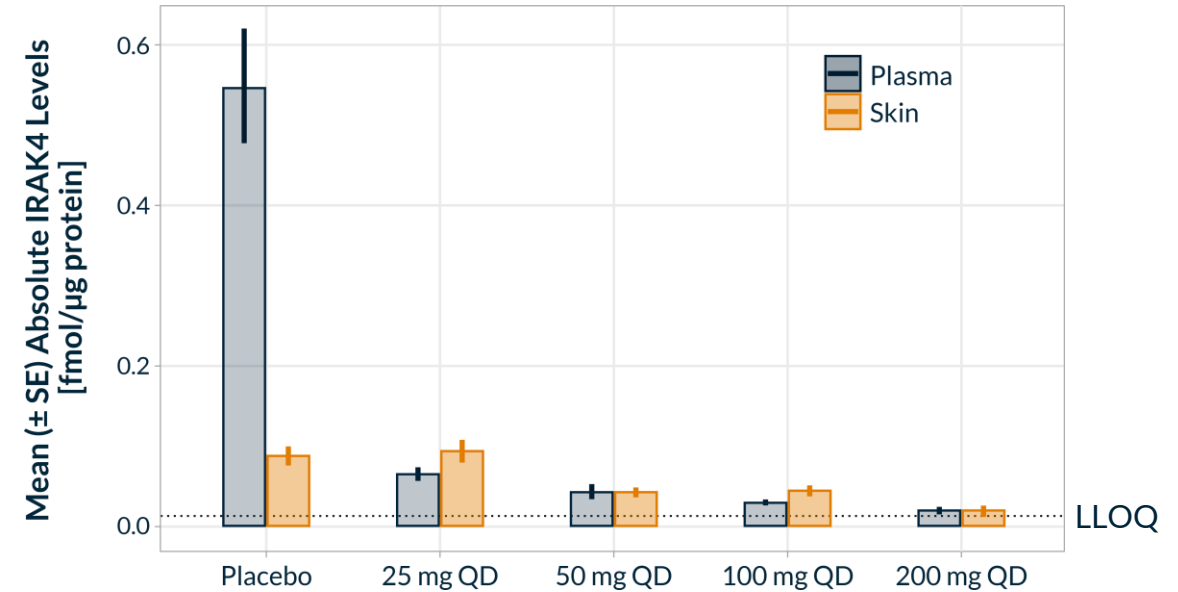
$C_{trough}$  concentrations shown for Days 1, 7 and 14.

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

## Absolute IRAK4 Levels in Skin



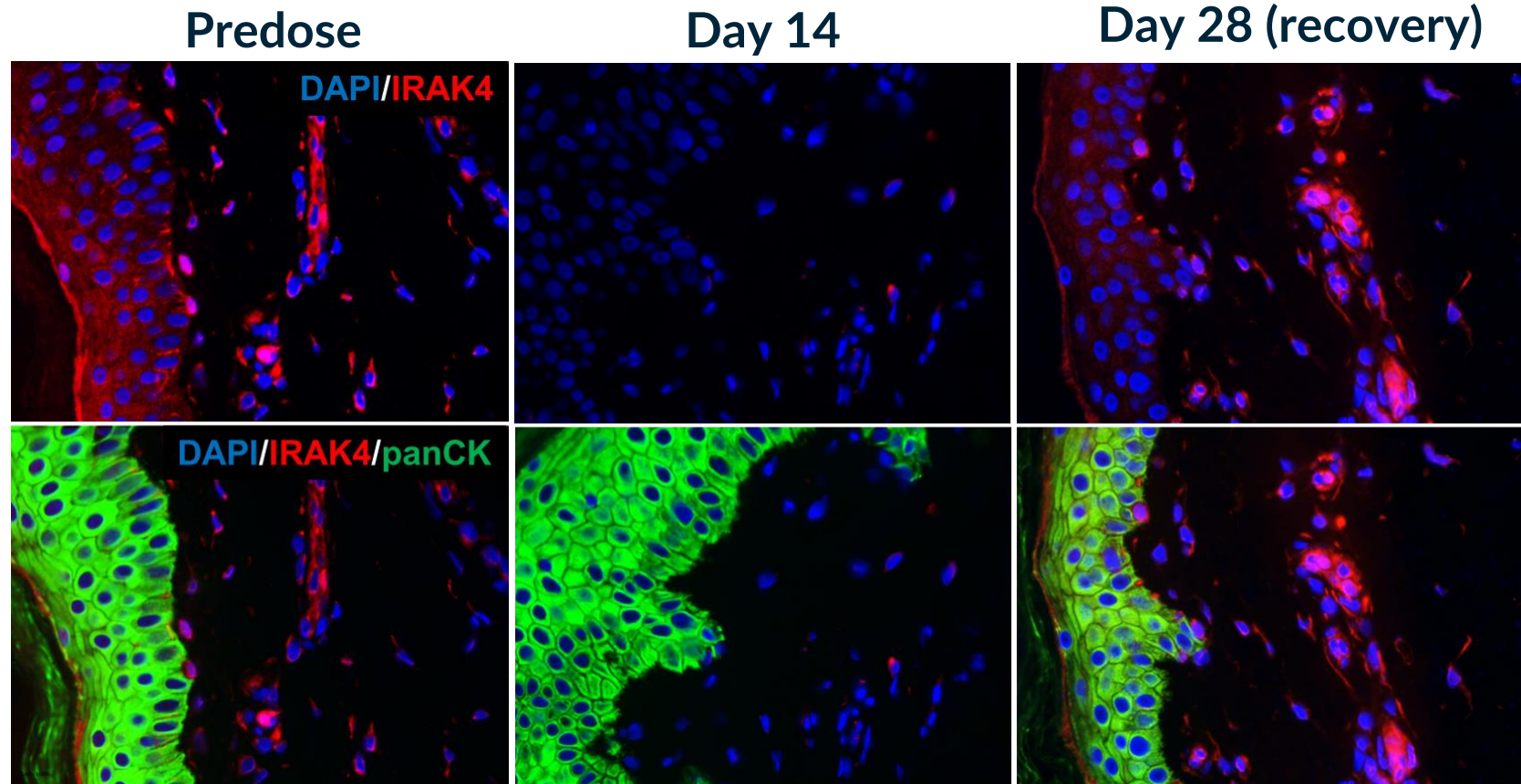
## IRAK4 Levels in Skin vs PBMC at Day 14 of KT-474 treatment



- 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

# Substantial IRAK4 Degradation in Skin Observed in Dermis and Epidermis

IRAK4 = Red

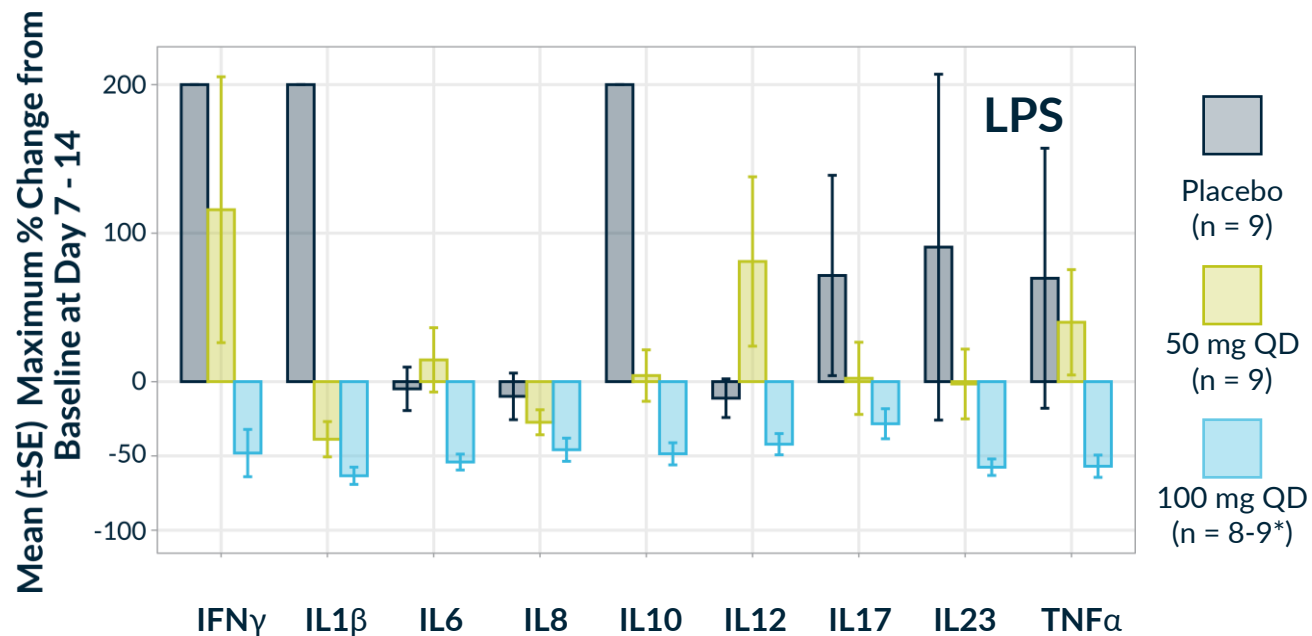


Pan cytokeratin (panCK) is used as the epidermal marker

Representative images from subject in 50 mg cohort

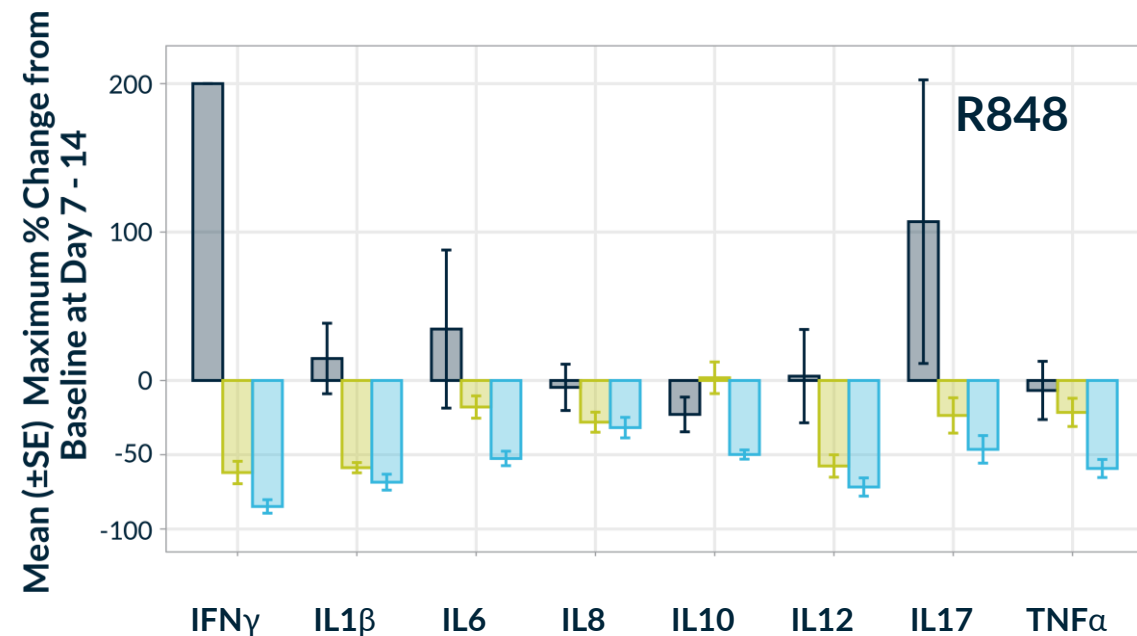
# Ex Vivo Inhibition of 9 Disease-Relevant Cytokines, Day 7-14

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



Pbo	357%	292%	-5%	-10%	880%	-11%	72%	91%	70%
50 mg QD	116%	-39%	15%	-27%	4%	81%	2%	-2%	40%
100 mg QD	-48%	-63%	-54%	-46%	-49%	-42%	-28%	-58%	-57%

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



Pbo	>500%	15%	35%	-5%	-23%	3%	107%	-7%
50 mg QD	-62%	-59%	-18%	-28%	2%	-58%	-24%	-21%
100 mg QD	-85%	-68%	-53%	-32%	-50%	-72%	-46%	-59%

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

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

# Blinded MAD Safety Summary

n=12 per cohort (9 drug/3 placebo)

## Possibly or Probably Treatment-Related AEs\* (>1 Subject)

AEs	#Subjects	Severity	Cohort
Headache	6	Moderate, Mild	MAD2
		Mild	MAD 3
		Mild (x3)	MAD 4
Palpitations**	3	Mild	MAD 2, MAD 4 (x2)
Nausea	2	Mild	MAD 2

- No SAEs
- Treatment-related AEs were self-limiting and resolved (table above)

\* per investigator assessment;

\*\* all were considered possibly-related, transient self-reported episodes during 21 days of in-patient observation in Phase 1 unit; **not associated with any objective findings** and did not lead to interruption in dosing; no AE's related to ECG changes including QTc across MAD cohorts 1-4



# 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
- Blinded safety analysis of cohorts showed KT-474 to be safe and well-tolerated, with no serious adverse events
- Upcoming planned milestones:
  - Open-label cohort in HS and AD patients with POB in 2H22
  - Phase 2 studies in multiple indications



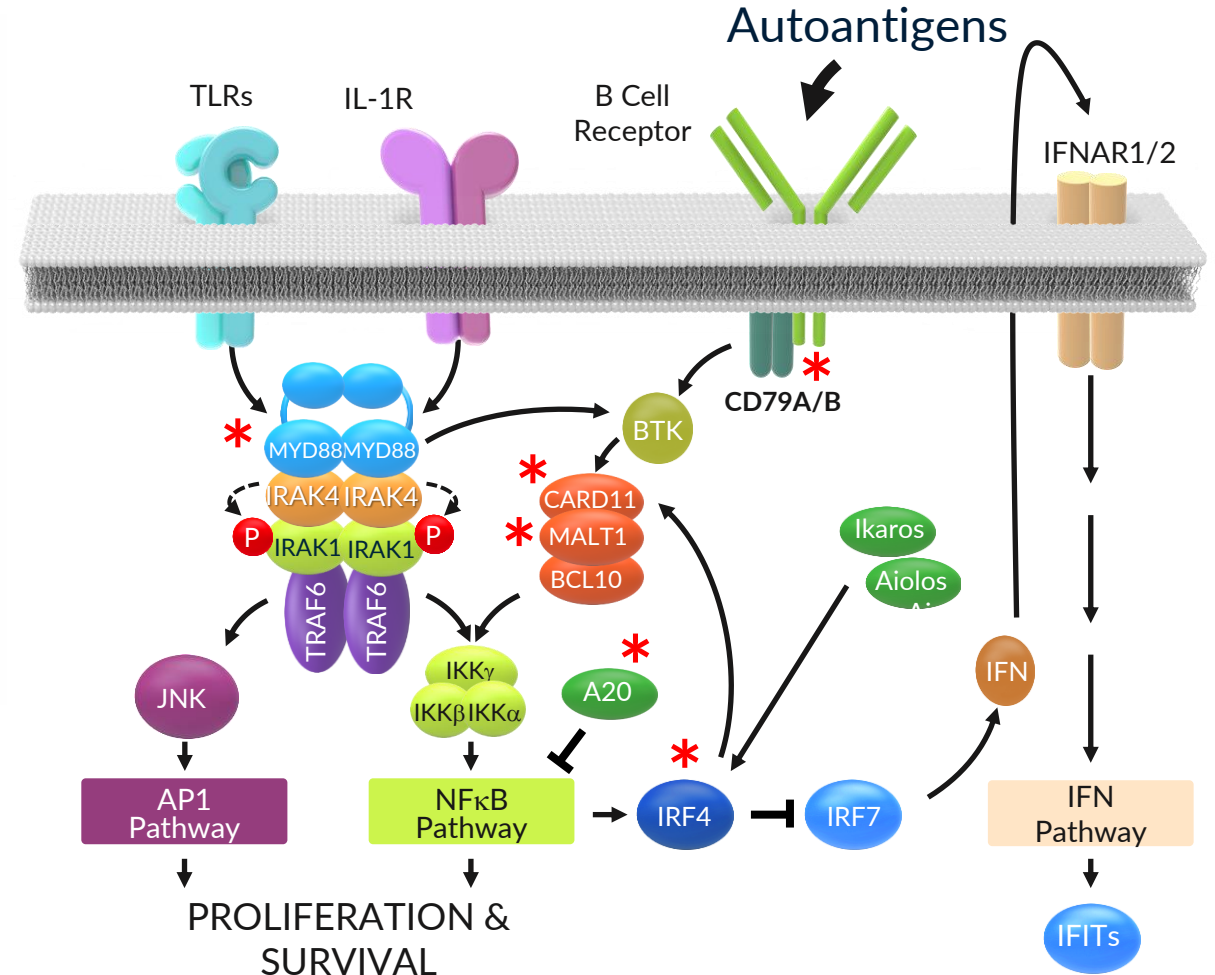
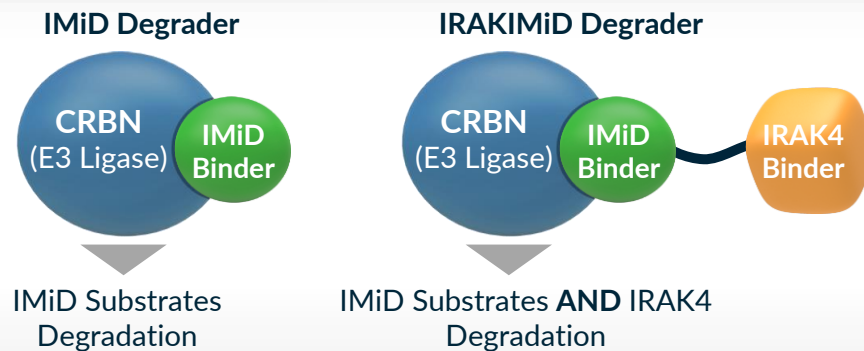
IRAKIMiD

 KYMERA



# 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 NFκB signaling in DLBCL show limited activity in preclinical or clinical settings
- Redundant NFκB 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

## Patient Impact<sup>1</sup>

~8k US  
~37k ROW\*  
per year

Waldenström's  
Macroglobulinemia

~10k US  
~26k ROW\*  
per year

Primary Central  
Nervous System  
Lymphoma

~3k US  
~12k ROW\*  
per year

\*EU, UK, Japan, China

<sup>1</sup>Bionest

- MYD88 is mutated in  $\geq 25\%$  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 ( $\geq$  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 Degradator 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*

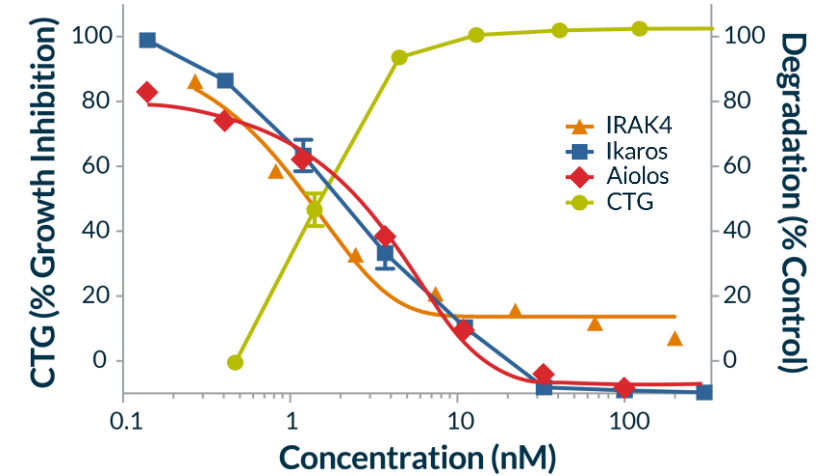
## KT-413

IRAK4 DC<sub>50</sub> = 6 nM

Ikaros DC<sub>50</sub> = 2 nM

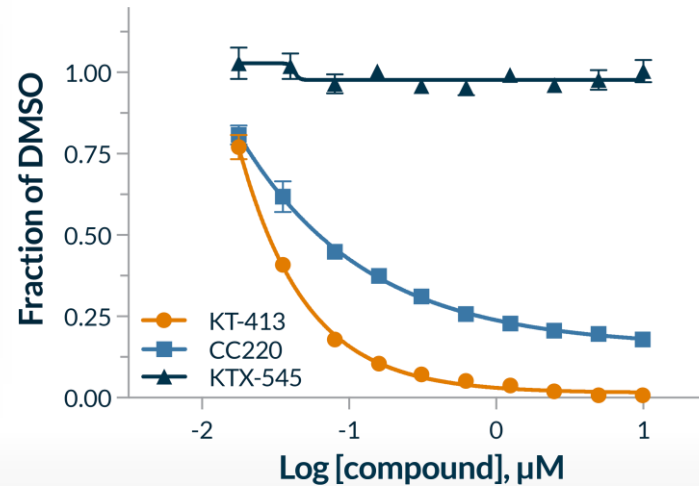
Aiolos DC<sub>50</sub> = 2 nM

OCI-Ly-10  
(MYD88<sup>MT</sup> DLBCL)  
EC<sub>50</sub> = 1 nM

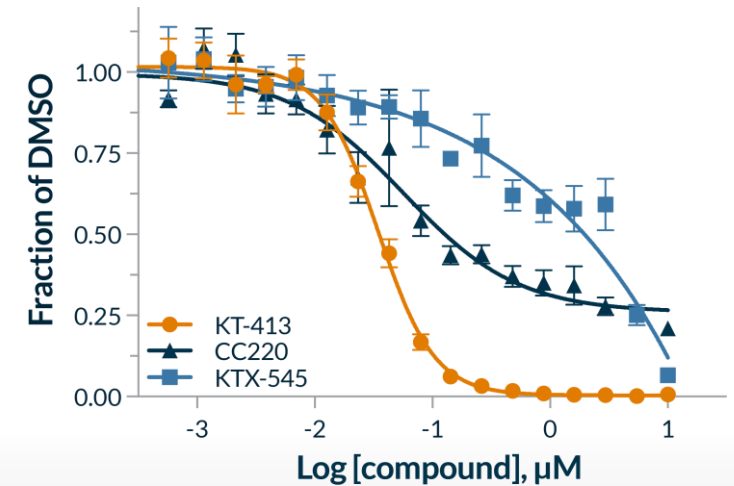


- KT-413 is more active in MYD88<sup>MT</sup> DLBCL cells than the clinically active IMiD, CC-220, and IRAK4-selective degrader, KTX-545

## OCI-Ly10 (MYD88<sup>L265P</sup>)



## SUDHL2 (MYD88<sup>S222R</sup>)



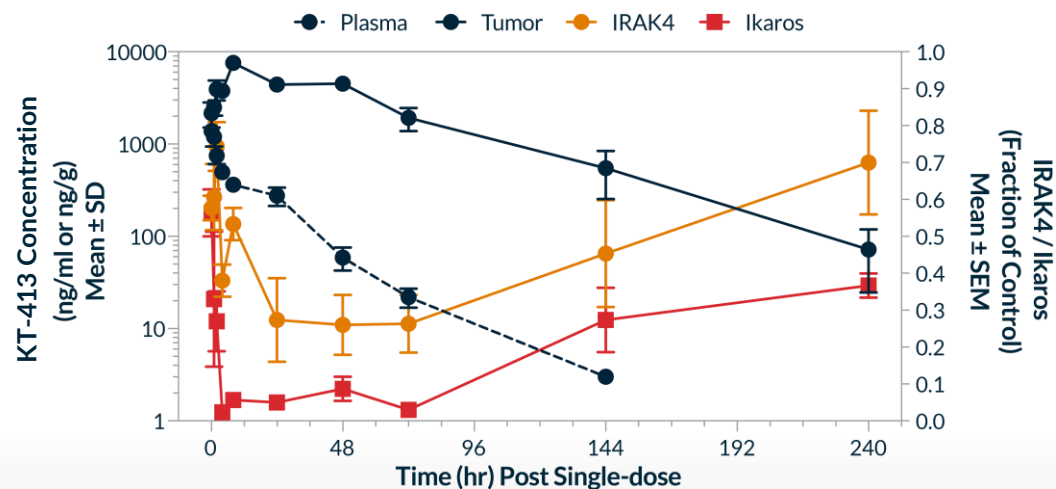
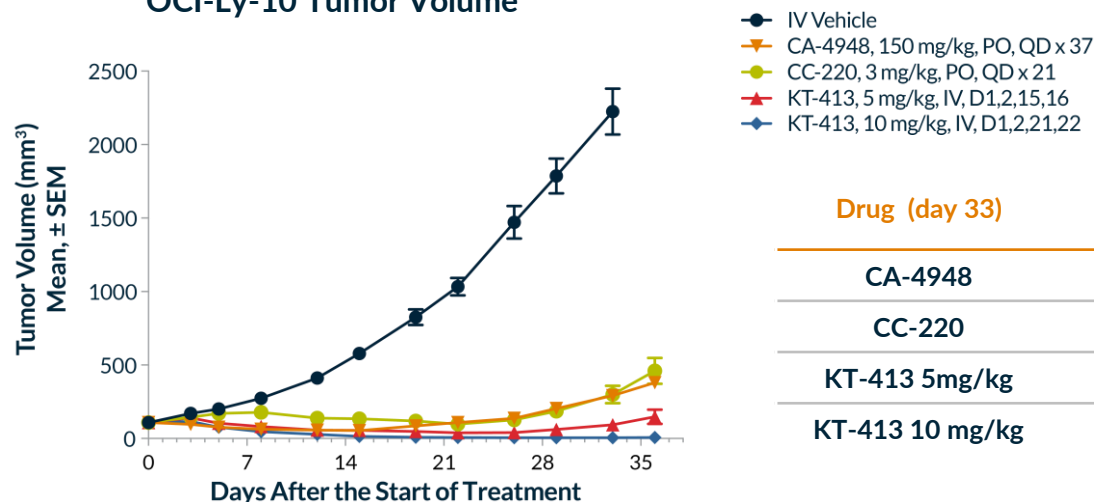


# KT-413 is Highly Active on Intermittent Dosing Regimens

- 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

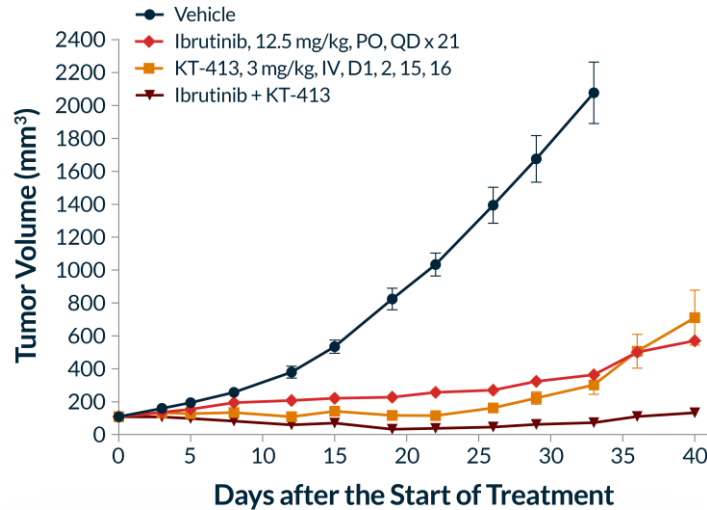
- Single 10 mg/kg dose showed extended tumor exposure and strong degradation of both IRAK4 and IMiD substrates that was maintained for least 72hr
- Single 10 mg/kg dose Q3W had robust anti-tumor activity

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



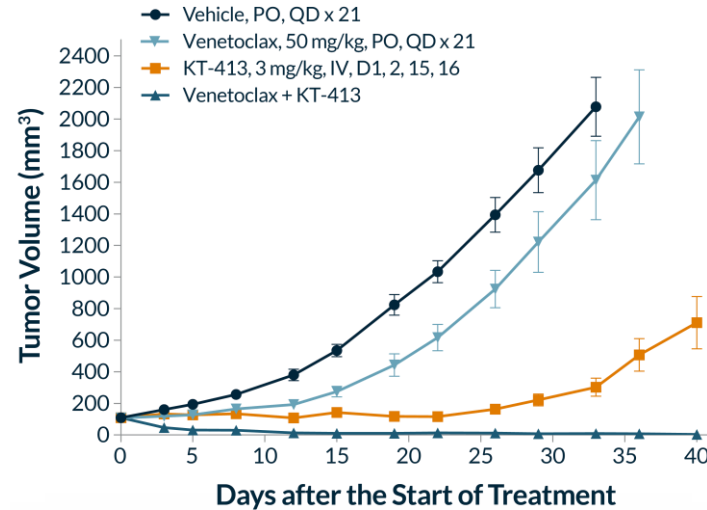
# KT-413 Has Strong Activity in Combination in MYD88<sup>MT</sup> OCI-Ly10 Xenografts

## with BTK Inhibitor



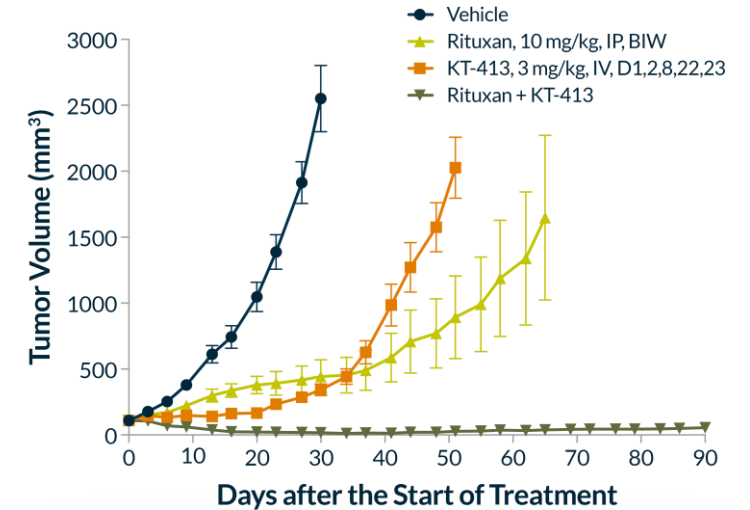
- KT-413 administered on intermittent schedules leads to strong regressions in combination with the BTK inhibitor Ibrutinib

## 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: Clinical Study Design and Objectives

## Key Eligibility Criteria:

*R/R B-cell lymphoma*

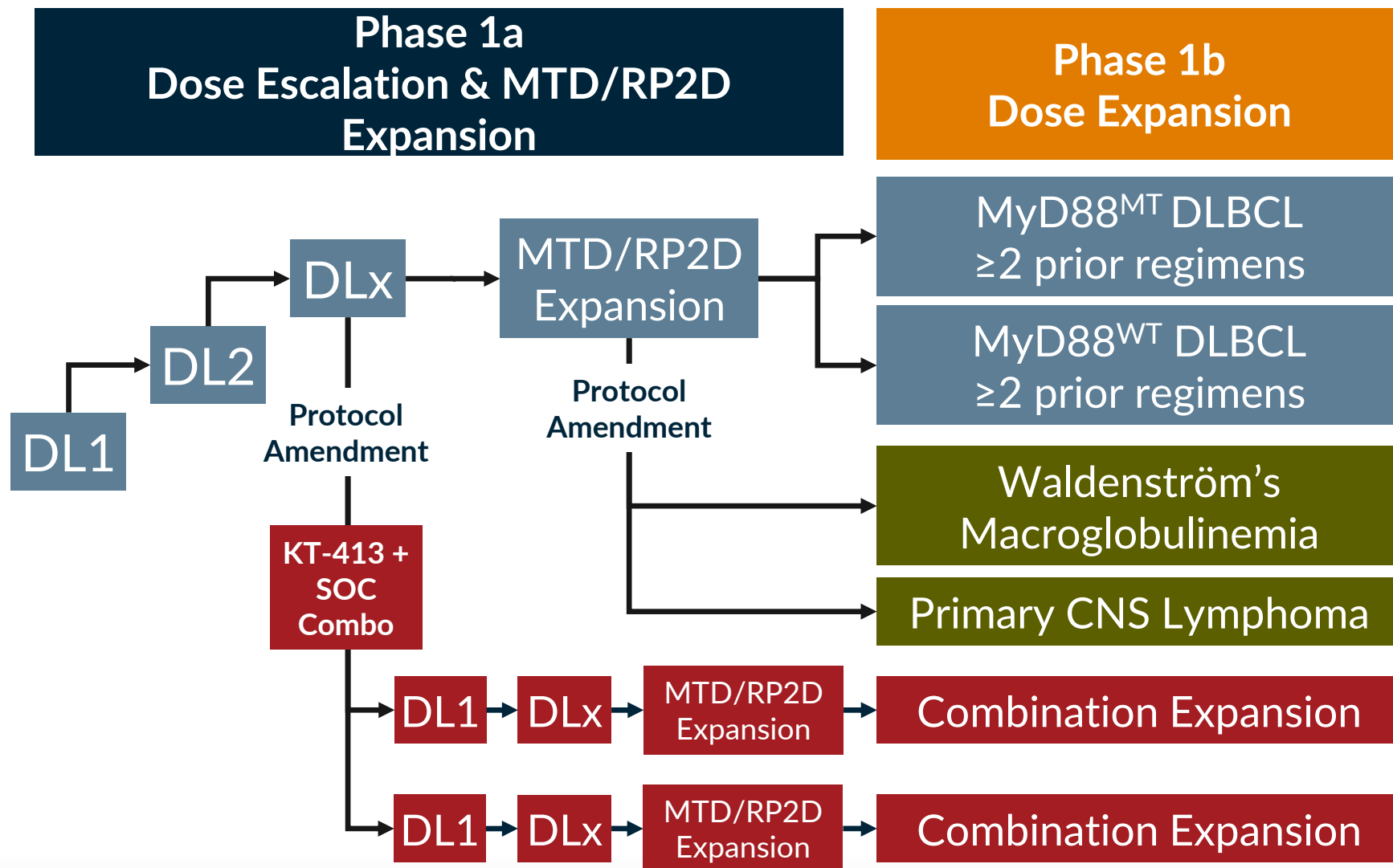
- ≥ 2 prior systemic regimens
- Ineligible or refused CAR-T or ASCT

## 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 Degradar 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



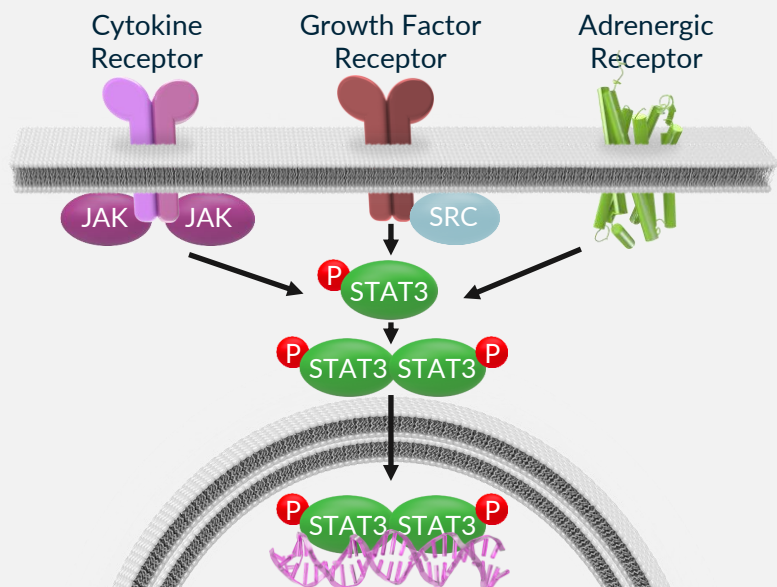


**STAT3**



# STAT3 Has Unique Tumor Cell Intrinsic and Extrinsic Mechanisms

## STAT3 as a Target



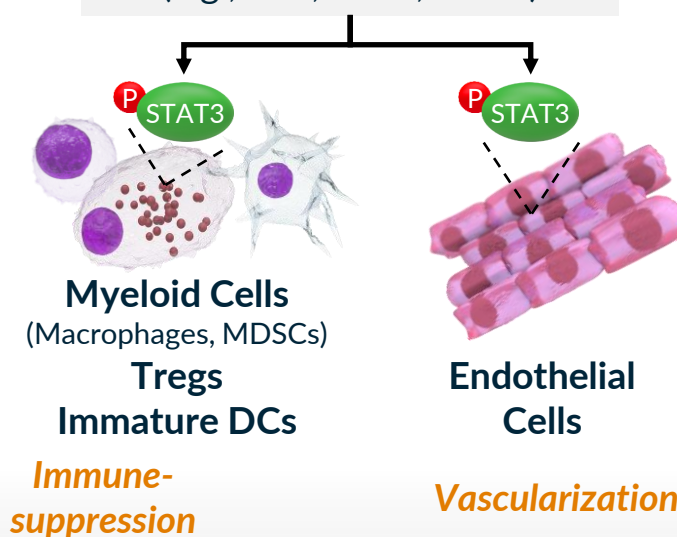
- High degree of validation of JAK-STAT pathway in oncology and immuno-oncology supported by >25k publications
- Traditionally undrugged target
- First-in-class opportunity to address STAT3 driven pathology across large and diverse indications

*Survival, proliferation, EMT, stemness*

Cancer Cells



**Cytokines**  
(e.g., IL-6, IL-10, VEGF)



## 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

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

Peripheral T-cell  
Lymphoma (PTCL)

**~13k US**  
**~27k ROW\***  
per year

Cutaneous T-cell  
Lymphoma (CTCL)

**~30k US**  
**~67k ROW\***  
per year

Large Granular  
Lymphocytic  
Leukemia (LGL-L)

**~4.5k US**  
**~25k ROW\***  
per year

Solid Tumors PD-1  
Combo: e.g.  
Stage IV CRC – MSI-H

**~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

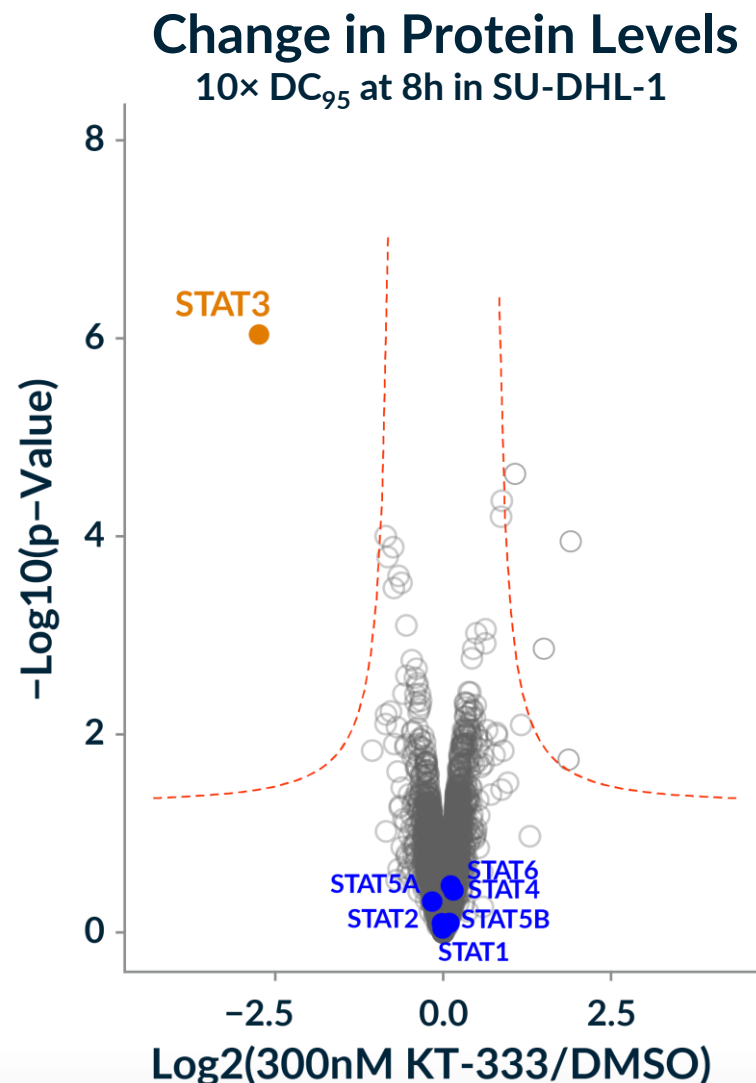
- Advanced stages of disease associated with constitutively activated STAT3
- Standard therapies in relapsed/refractory CTCL result in ORRs of ~30% with few CRs and mPFS of 5-8 months

- 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

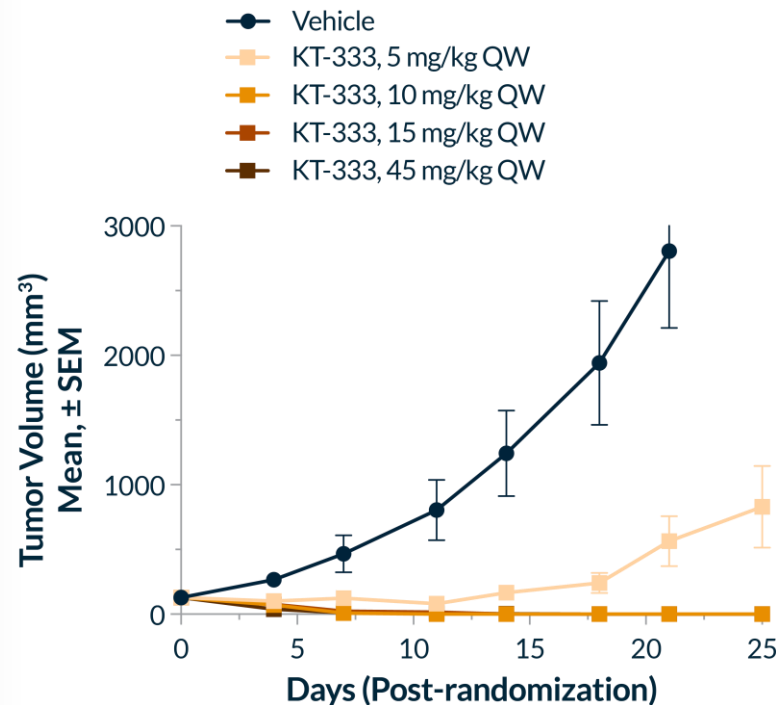


# Full and Durable Regressions Across Multiple *in vivo* Preclinical Tumor Models

- Mice bearing STAT3-dependent ALK+ ALCL SU-DHL-1 or SUP-M2 tumor xenografts dosed with STAT3 degrader
- Dose- and degradation dependent tumor growth inhibition observed with once-a-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)

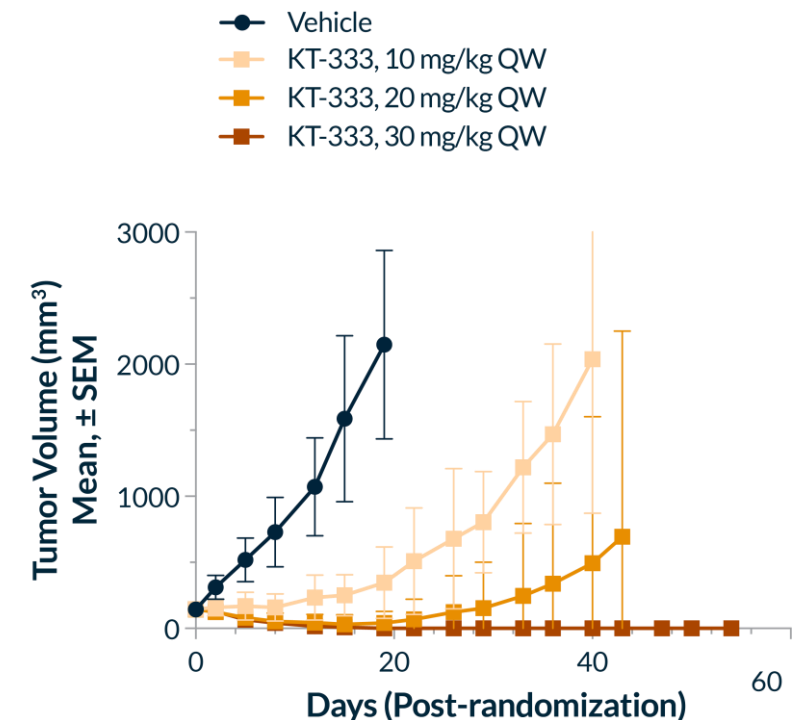
## SU-DHL-1

### Weekly Dosing



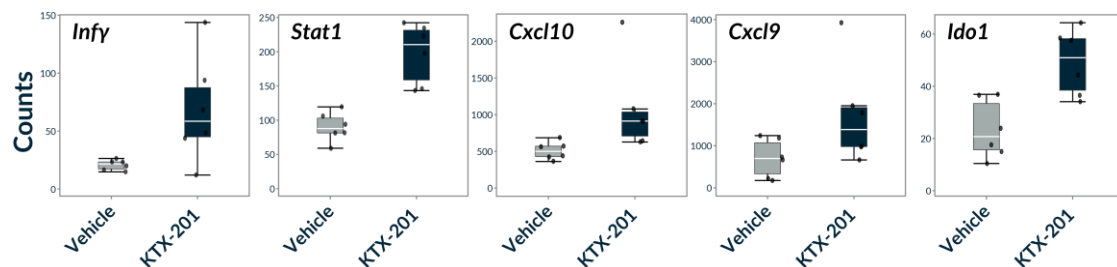
## SUP-M2

### Weekly Dosing



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

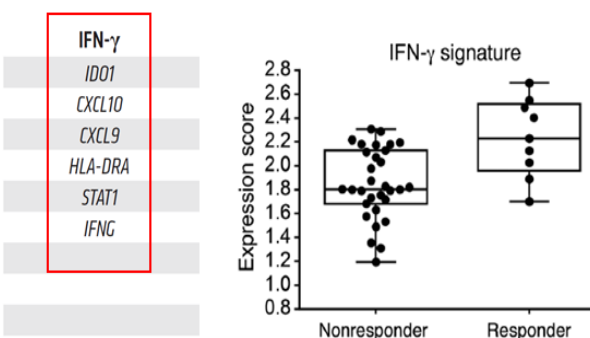
## IFN $\gamma$ -dependent Gene Signature Induced by STAT3 Degradator Monotherapy in CT-26 Tumors



CT-26: Veh or KTX-201 25 mg/kg q2D IP; n=6/grp; t = Day 11

- 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

### IFN- $\gamma$ and Expanded Immune Gene Signature



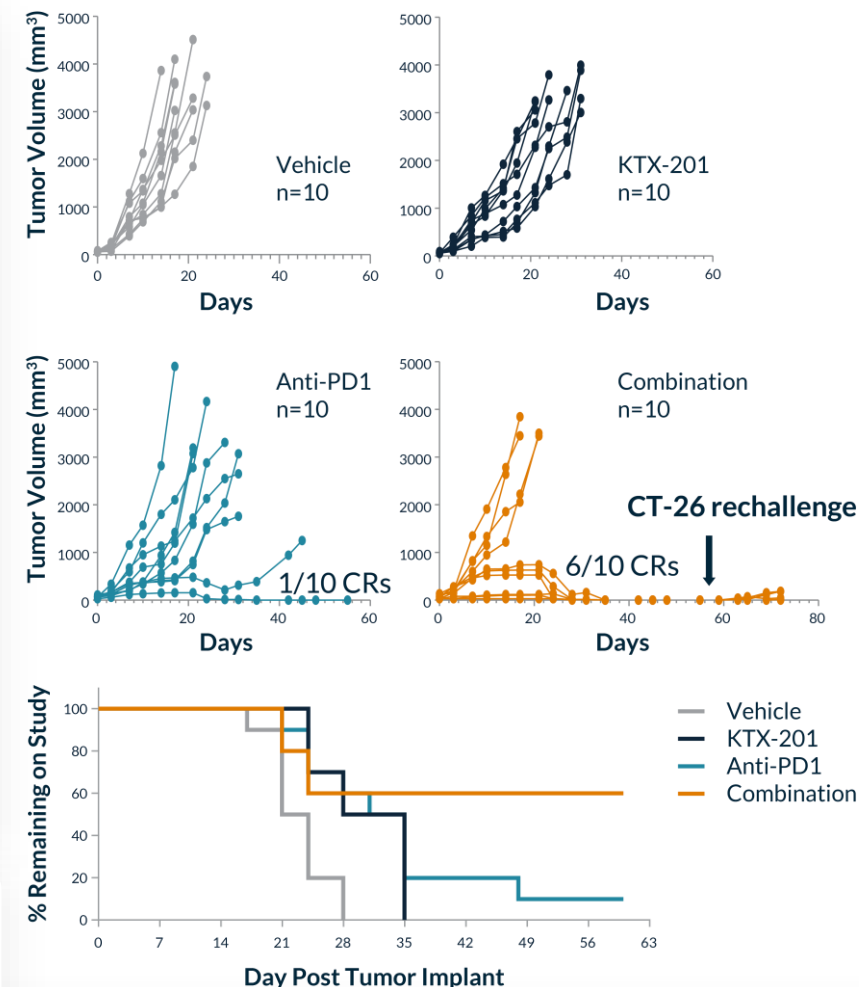
Source: Ayers et al., JCI, 2017

- 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

## STAT3 Degradation and Anti-PD-1 Synergy





# KT-333: Clinical Study Design and Objectives

## Key Eligibility Criteria:

*R/R B-cell lymphoma*

- $\geq 2$  prior systemic regimens
- Ineligible or refused CAR-T or ASCT

*Advanced solid tumors*

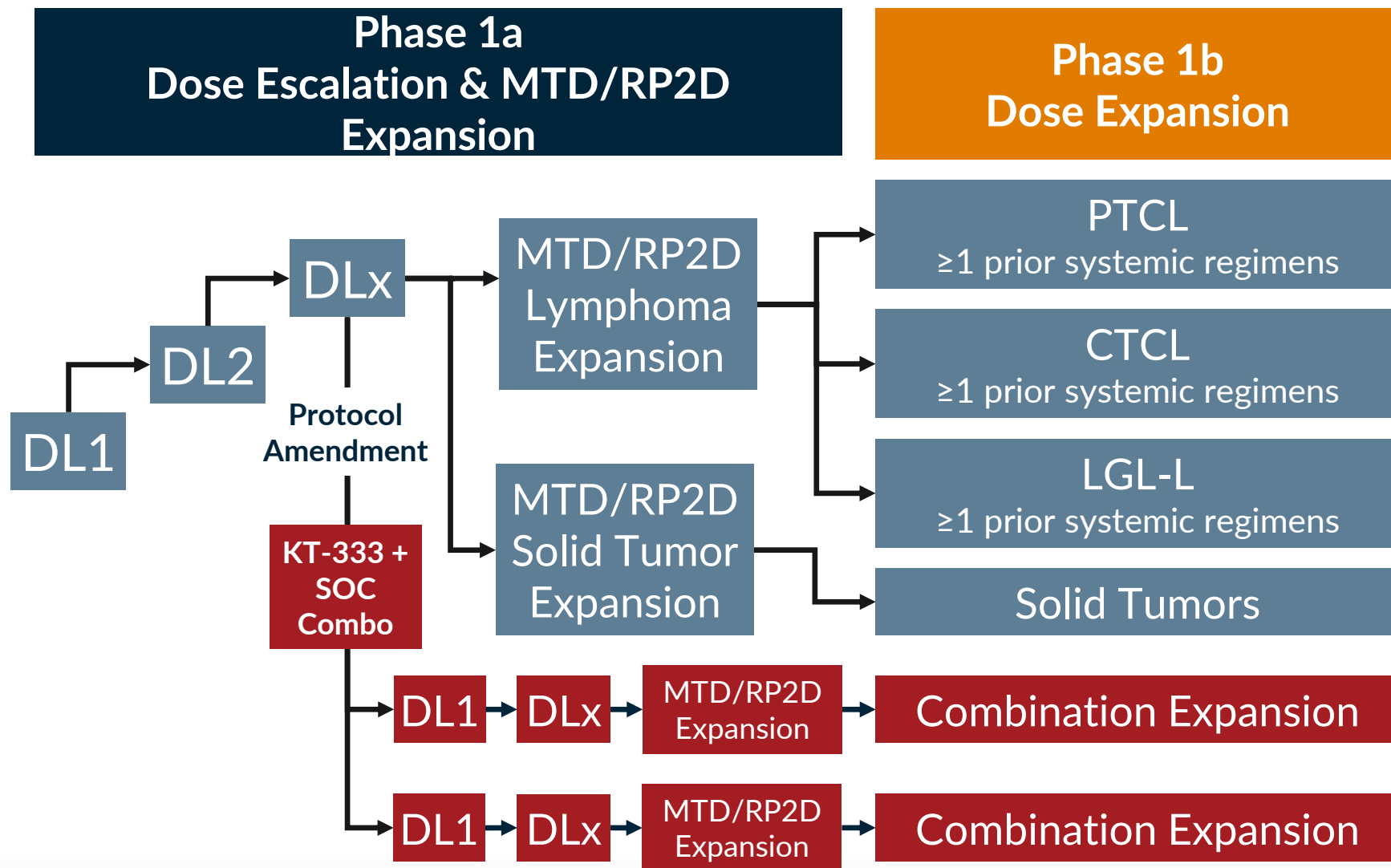
- $\geq 2$  prior systemic regimens or no available SOC

## 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

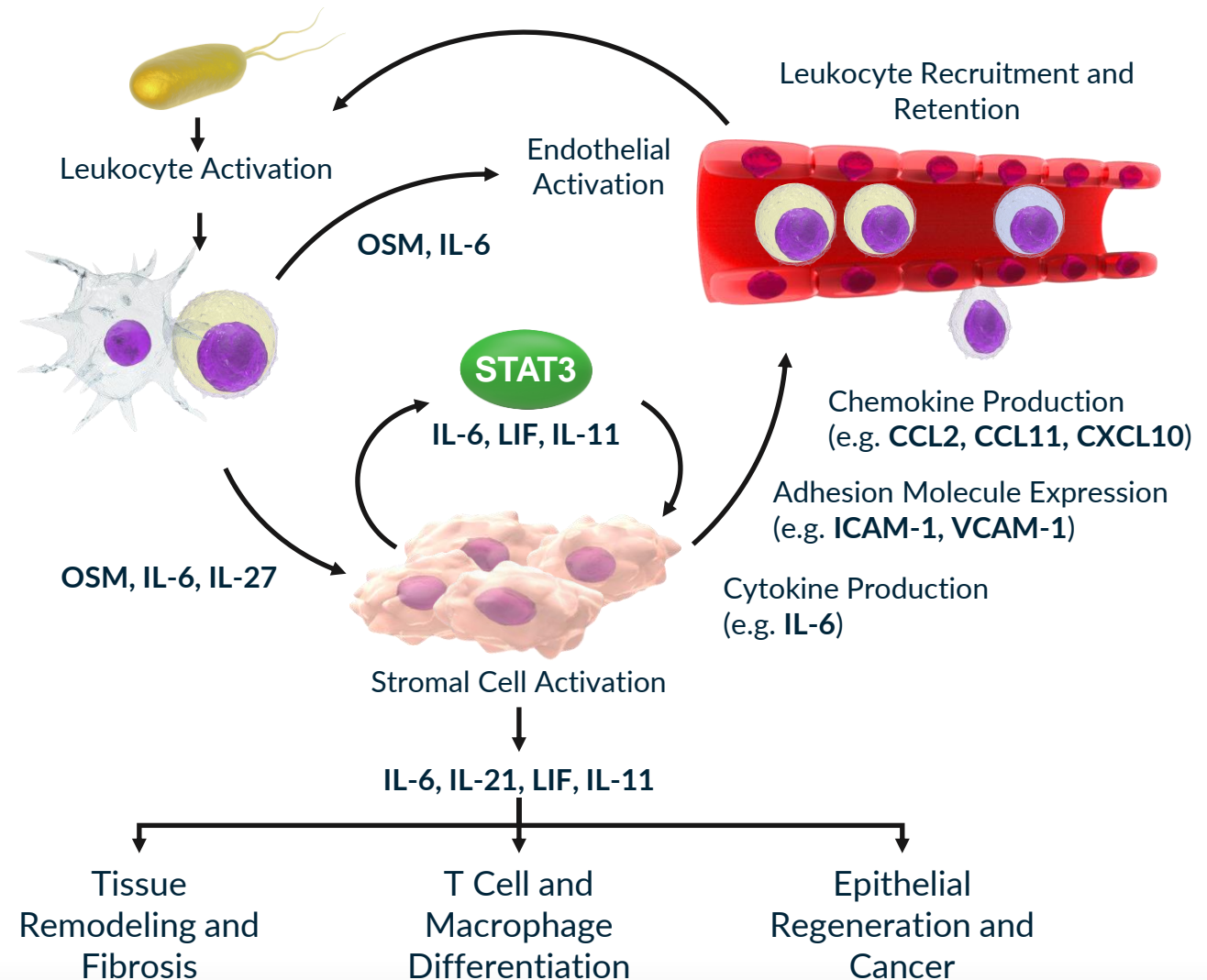


# STAT3 Degradar KT-333, First-in-class Opportunity to Address STAT3-driven Pathology Across Diverse Indications

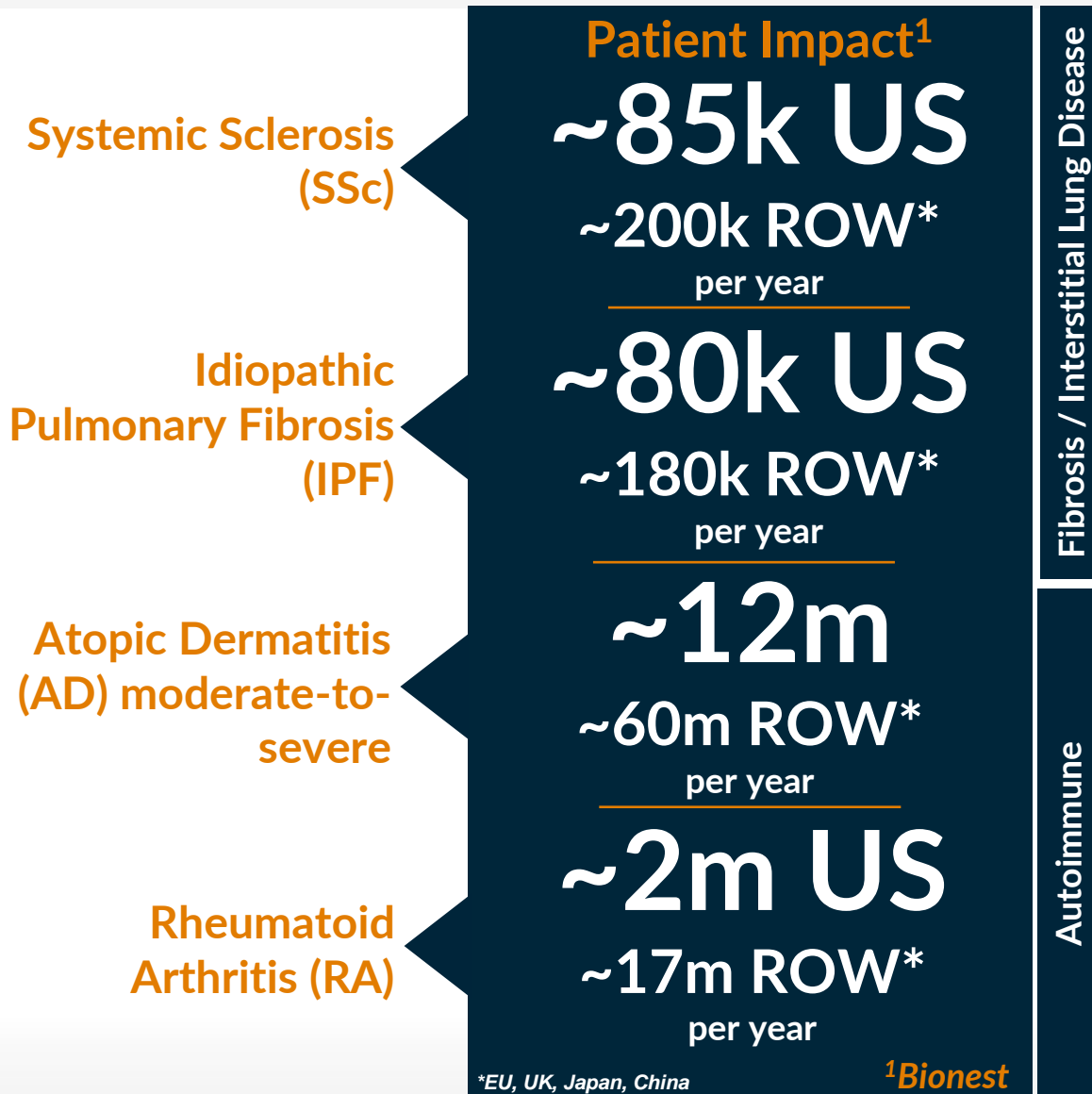
- First heterobifunctional degrader against an **undrugged target in the clinic**
- Profound **single agent activity** in liquid tumor and **promising combo activity** with anti-PD1 in liquid and solid tumors
- Clinical development strategy includes **direct registrational path in STAT3 pathway** activated 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- $\beta$ , VEGF
- STAT3 gain-of-function mutations lead to a poly-autoimmunity 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



- 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

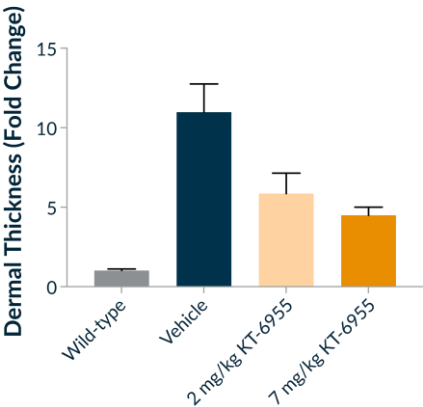
- STAT3 GoF patients exhibits signs of dermatitis
- TSLP receptor activates STAT3
- Pruritis is linked to mechanical and IL-31R activation of STAT3
- Fibrotic changes associated with AD is associated with STAT3 activation

- 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

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

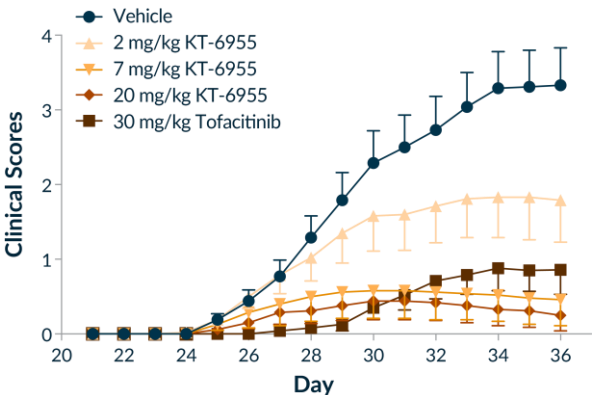
## In Vivo Tight Skin Model (Fibrosis)

TSK ± Mice (BIW Dosing)



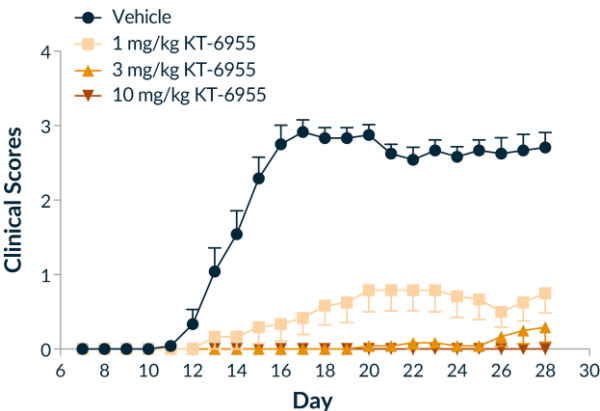
## In Vivo CIA Model (RA)

Collagen-induced Arthritis (BIW Dosing)



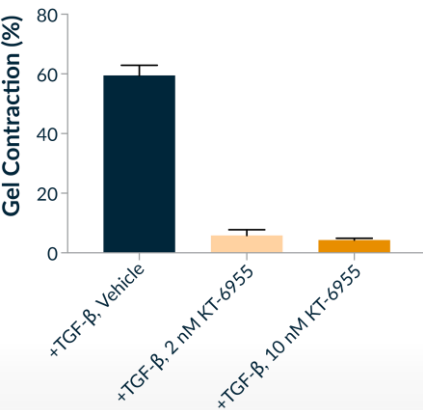
## In Vivo MS Model

Experimental Autoimmune Encephalomyelitis (BIW Dosing)

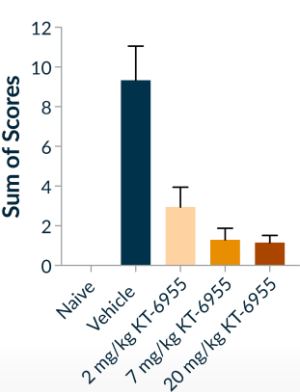


## Cellular Fibrosis Model

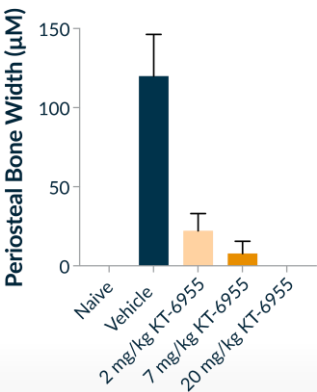
TGF-β Stimulated SSc Fibroblasts (72h)



Pathology Score



Periosteal Bone Growth



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

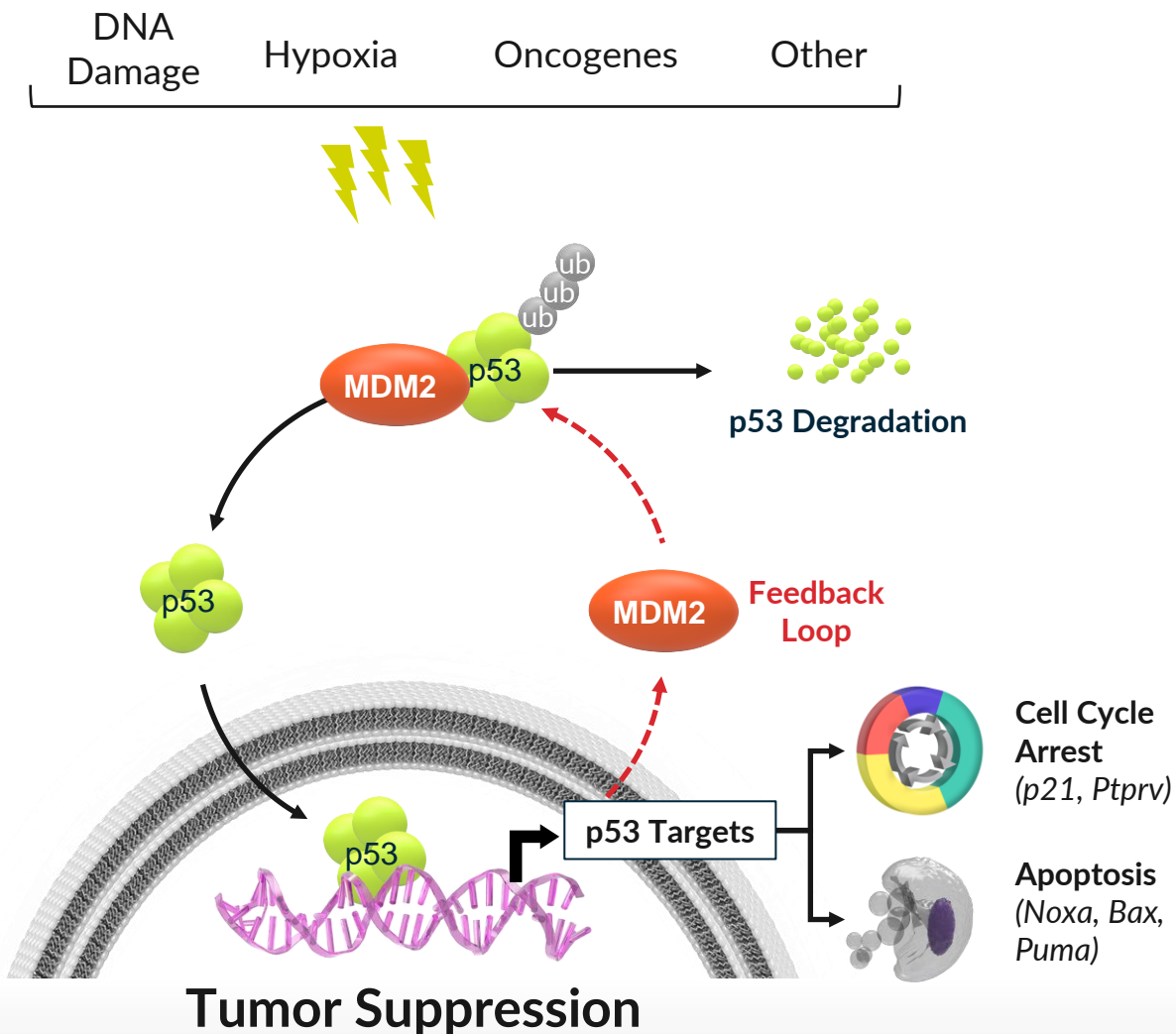




MDM2

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

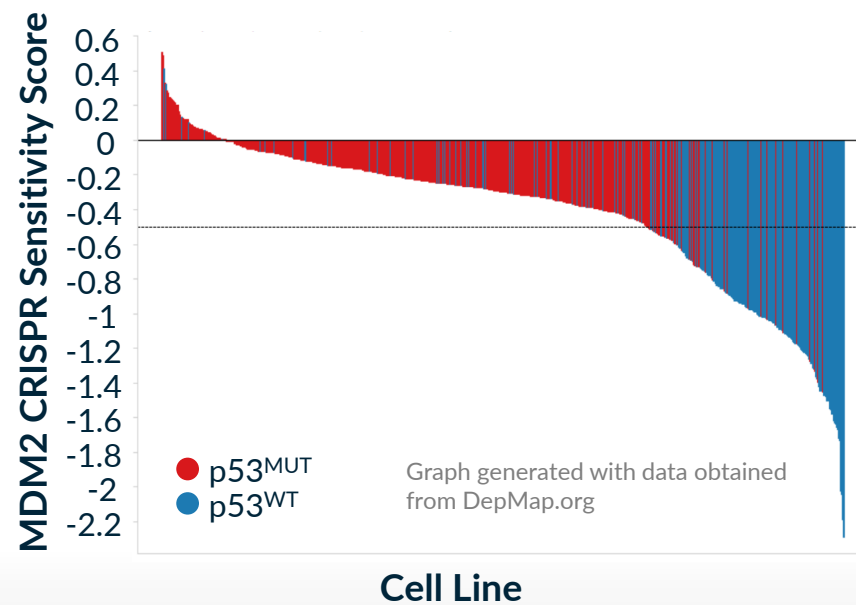
## Stressors



## Cancer Genetics

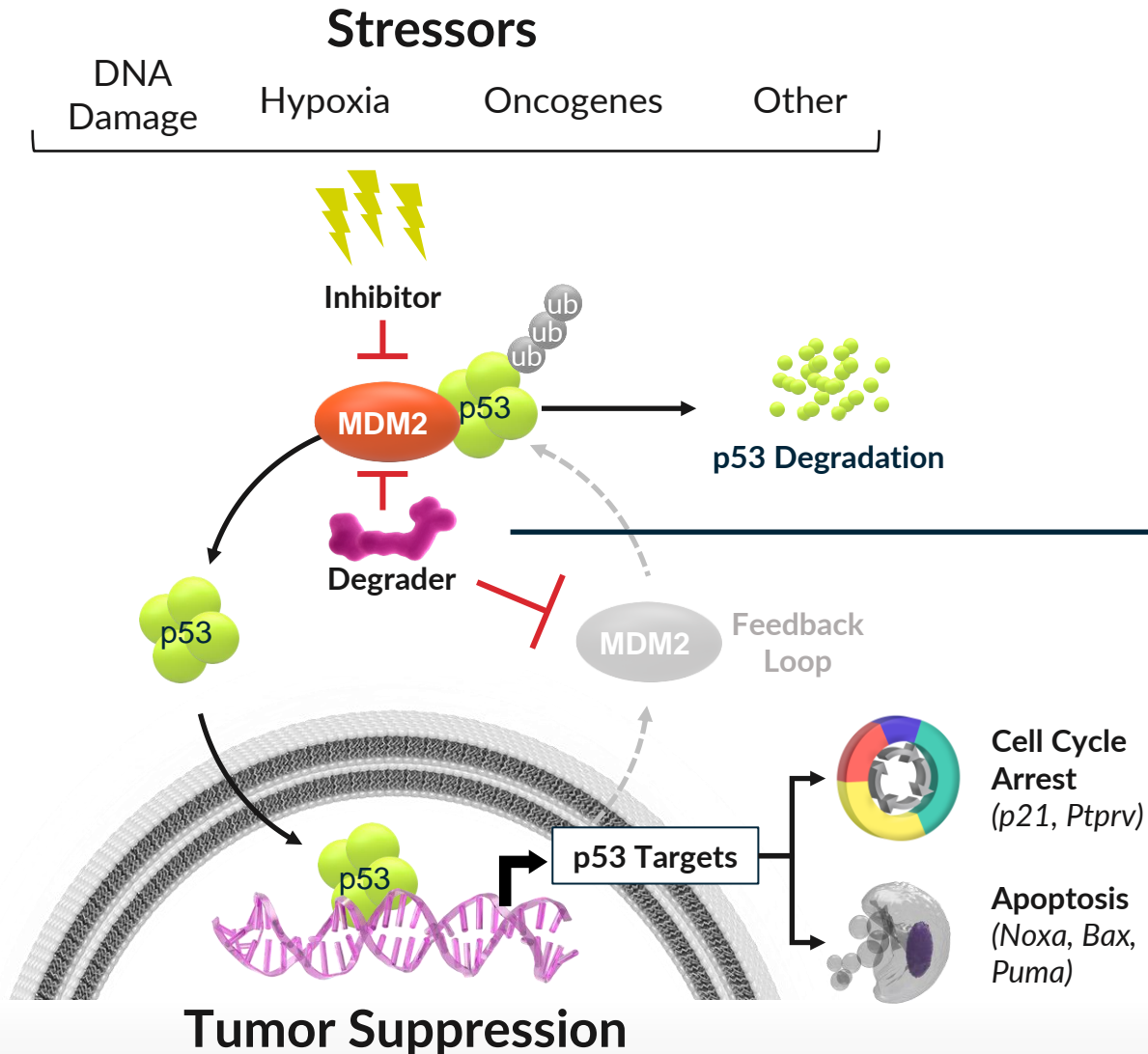
- p53 is **NOT** mutated in almost 50% of tumors
- MDM2 overexpression and amplification can inactivate p53
- Large opportunity in wide variety of cancers

## Dependency of p53<sup>WT</sup> cells on MDM2





# MDM2 Degradation, Not Inhibition, Efficiently Restores p53



## Clinical Validation

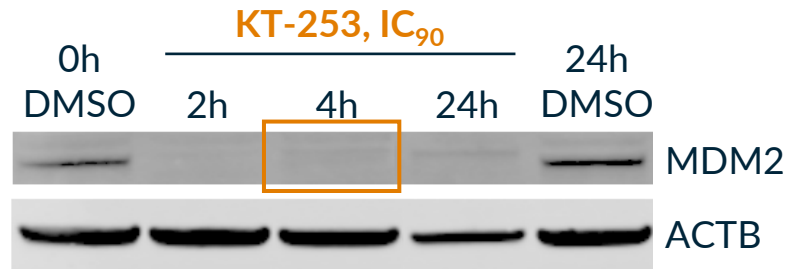
- MDM2 small molecule inhibitors of MDM2/p53 interaction show activity in the clinic..
- ...but they induce MDM2 feedback loop resulting in limited impact on pathway

## Degrader Advantage

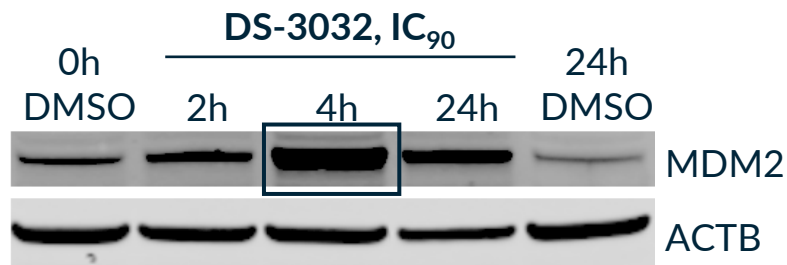
- MDM2 degraders, by removing the protein, can overcome the p53-dependent feedback loop that upregulates MDM2
- MDM2 degrader can induce an acute apoptotic response in tumor cells, **increasing efficacy and therapeutic index vs a small molecule inhibitor**

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

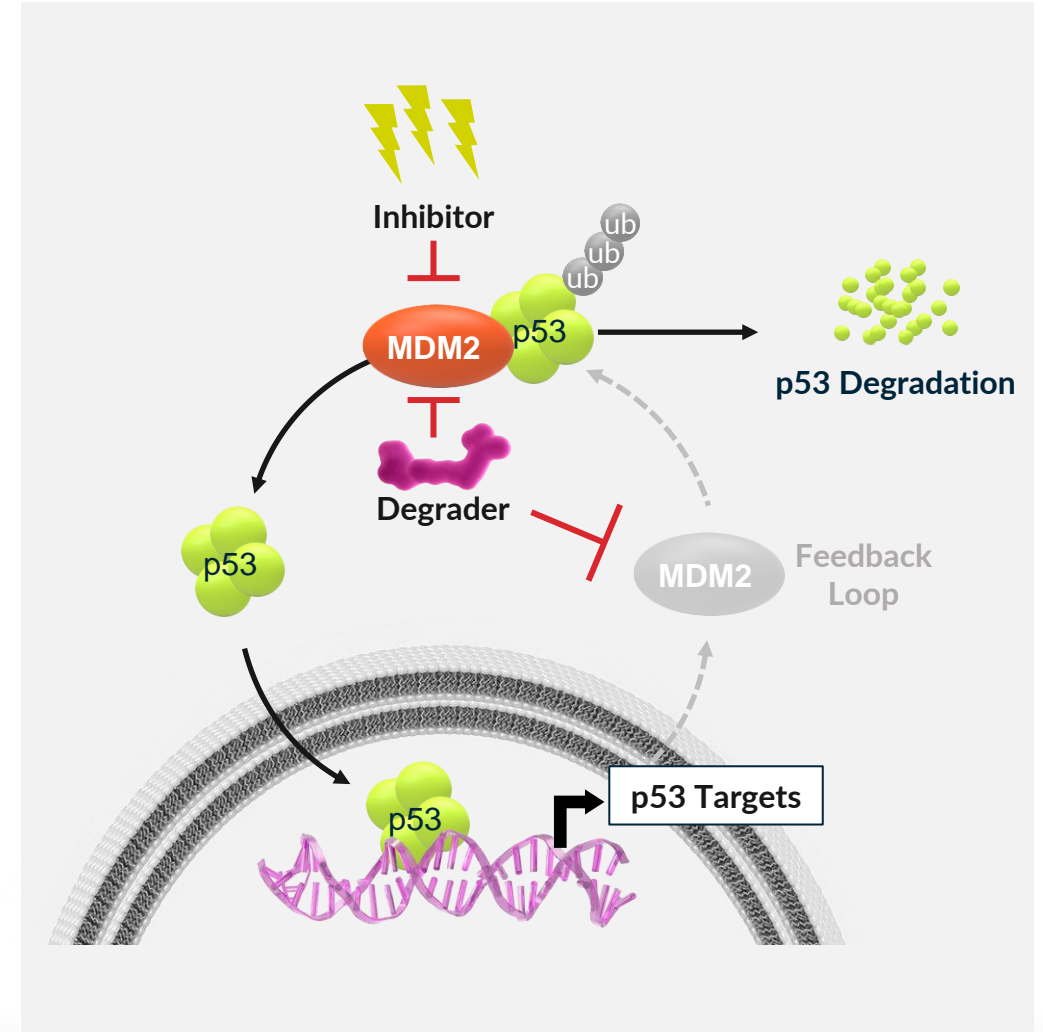
## Degrader Overcomes MDM2 Feedback Loop



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

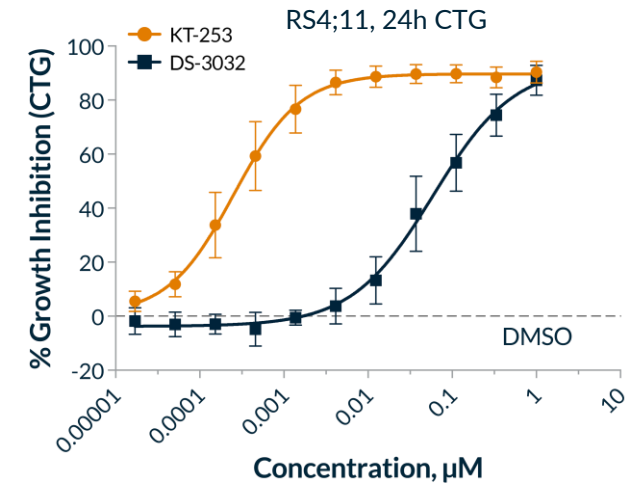
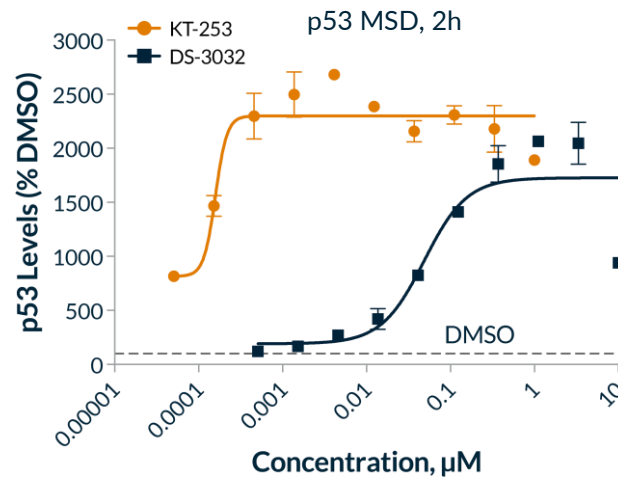
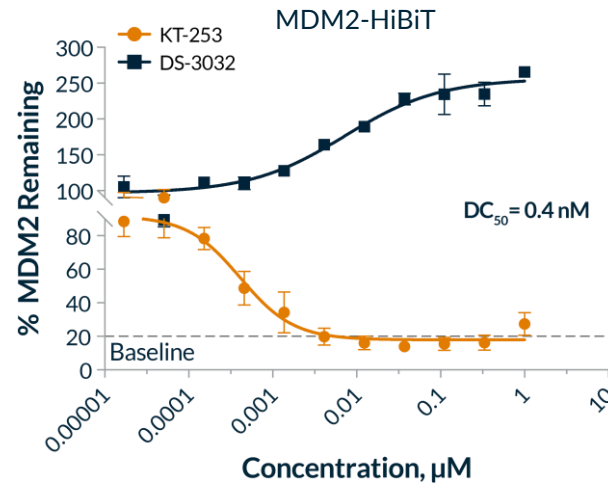


# Kymera's MDM-2 Degradation Development Candidate, KT-253 is Superior to MDM2/p53 Small Molecule Inhibitors

KT-253 is a potent MDM2 degrader

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

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

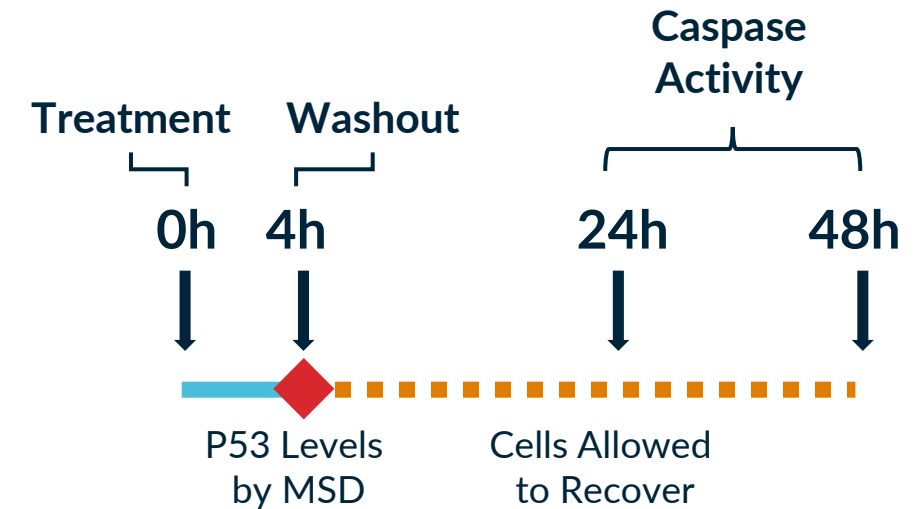
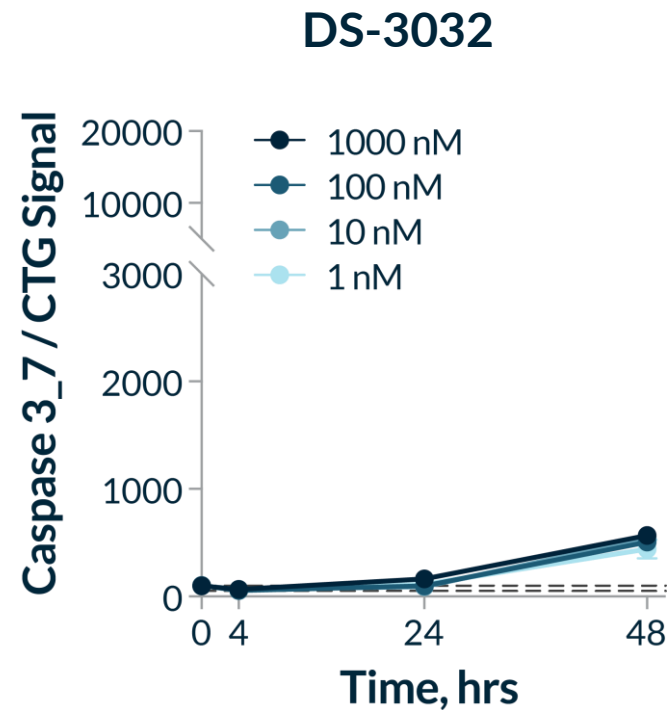
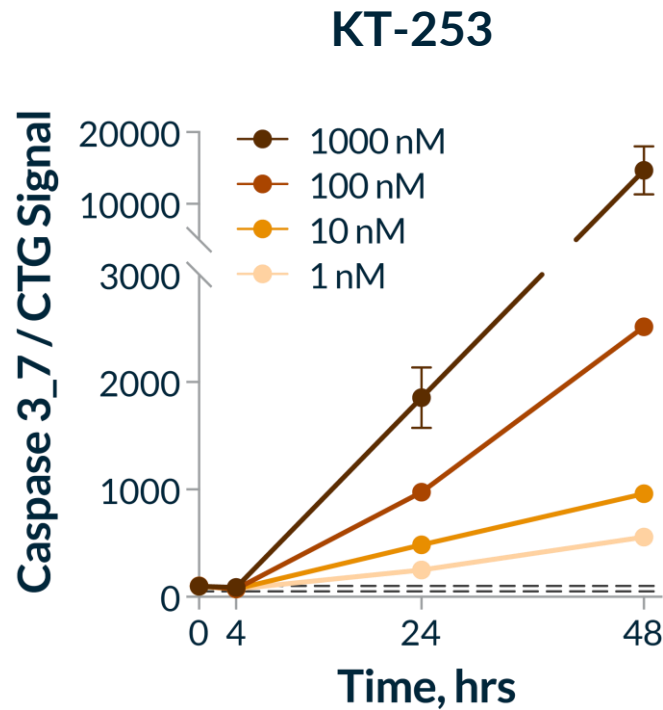


Compound	KT-253	DS-3032	RG7388	SAR405838	HDM201	AMG-232
Company	Kymera	Sankyo/Rain	Roche	Sanofi	Novartis	Amgen/Kartos
Clinical stage	IND enabling	Ph II / combo AML	Ph II / III	Paused	Ph I / II	Multiple Ph II; combo AML
RS4-11 IC <sub>50</sub> (nM) (AML Cell Killing)	0.3	67	220	620	163	280
MDM2-HiBiT, 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 Degraders, but not SMI, is Sufficient to Commit Cells to Undergo Apoptosis

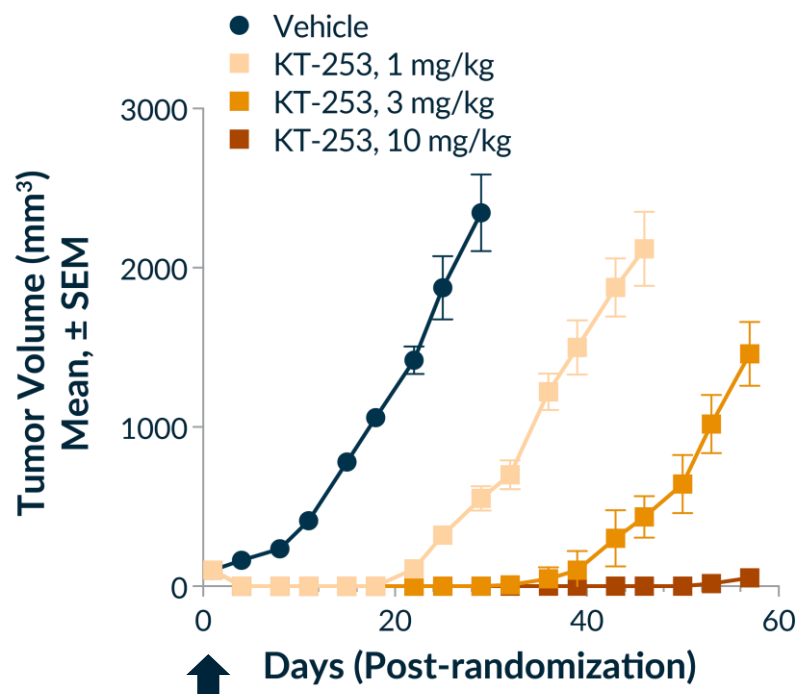


- 4 hr target coverage by KT-253 is sufficient to induce apoptosis in contrast to SMIs
- Supports hypothesis that intermittent dosing schedule of KT-253 can drive efficacy while increasing therapeutic index

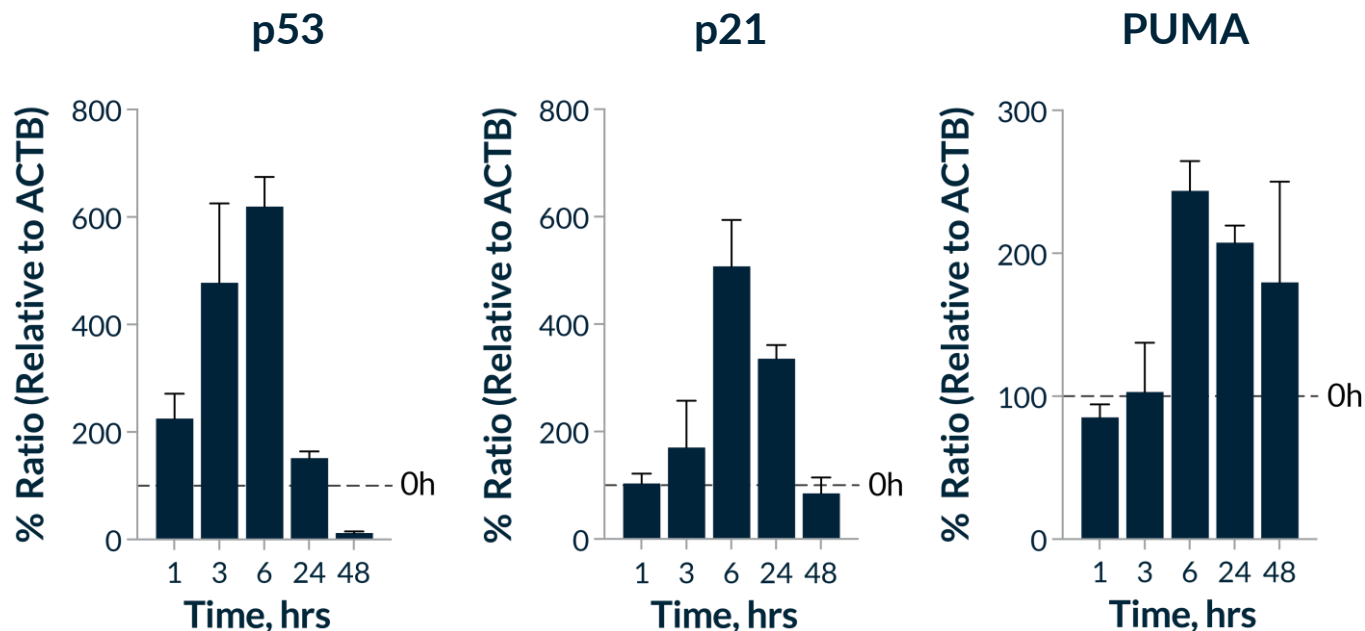
# Single Dose of KT-253 Leads to Sustained Tumor Regression

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

*Rs4;11* XGs



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

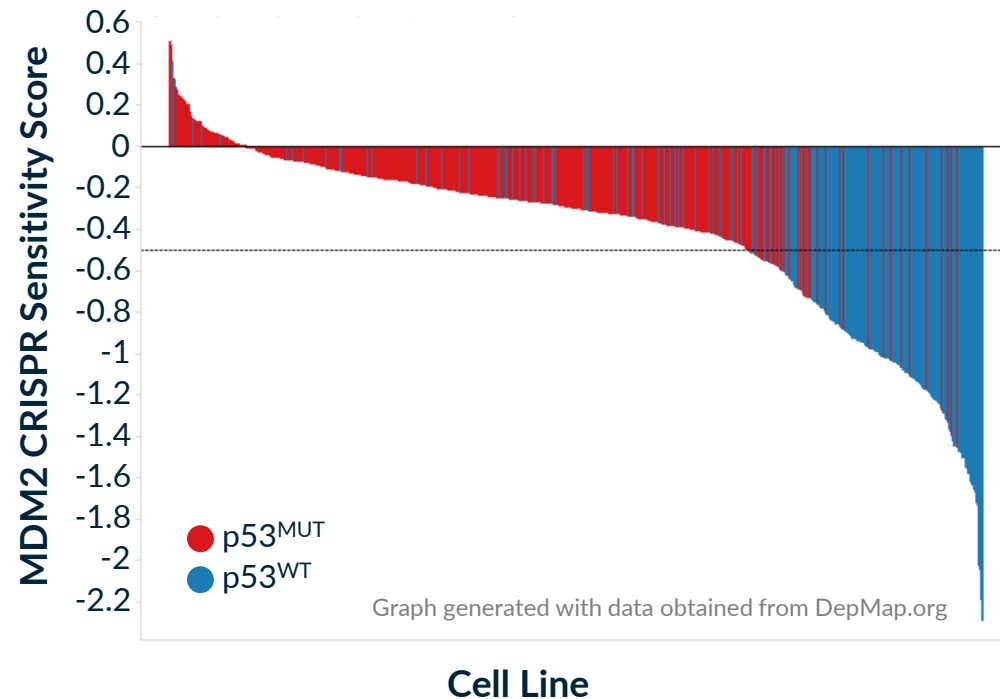


- Clinical equivalent doses of small molecule inhibitors have no significant *in vivo* impact in these xenograft models

# MDM2 Dependency Seen Across a Large Subset of Tumor Types

## Large Franchise Potential in Liquid and Solid Tumors

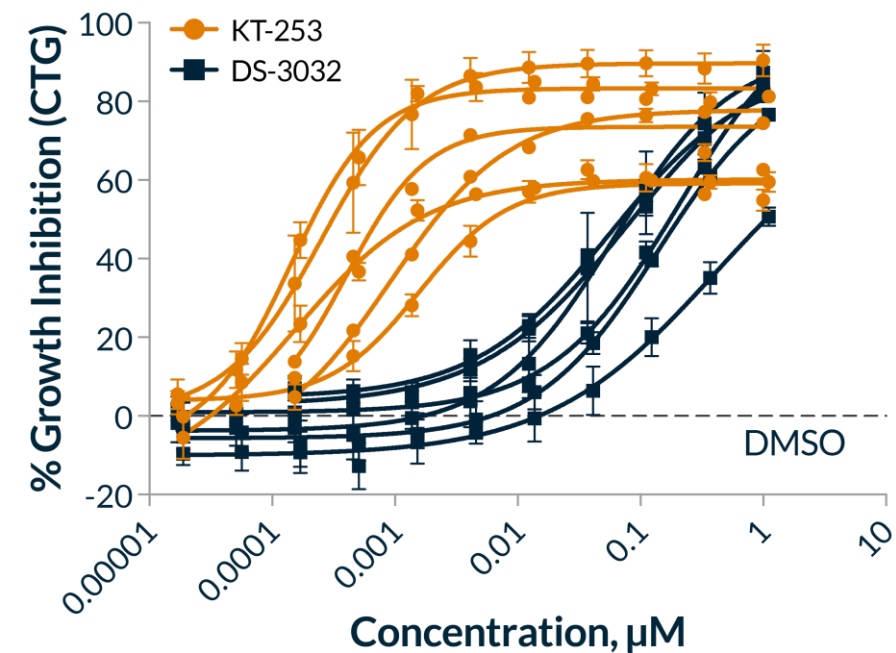
### Dependency of p53<sup>WT</sup> Cell Lines on MDM2



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

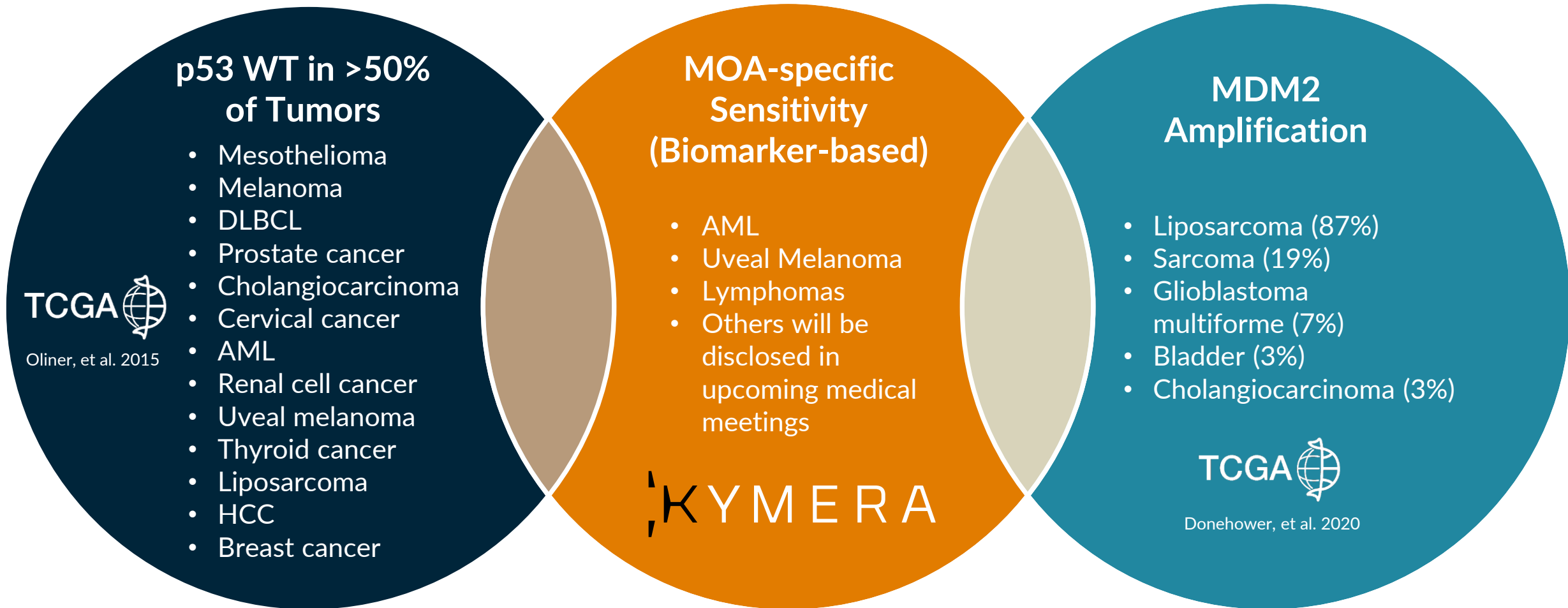
### MDM2 Degradar Superior to SMI Across Cell Line Panel

Heme & Solid Cell Lines



**p53<sup>WT</sup> 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



# KT-253 is a Potent MDM2 Degradator 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**



# Pegasus™ Platform and R&D Approach

# We Want to Drug All Target Classes

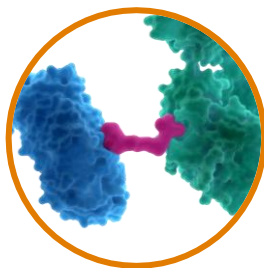
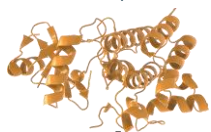


## Expanding the Druggable Proteome with TPD

ID

### Inadequately Drugged Targets with Clear Degradation Advantage

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



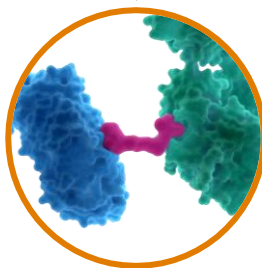
Heterobifunctional Degraders

UD

### Undrugged Targets

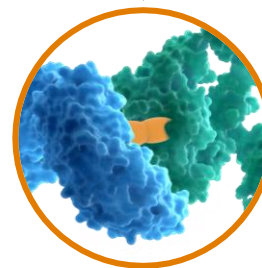
No other technology can drug

Ligandable Proteins  
e.g. STAT3...



Heterobifunctional Degraders

Un-ligandable Proteins  
e.g. other transcription factors

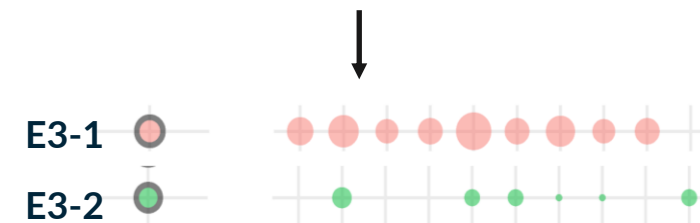


Molecular Glues

TR

### Clinically Validated Targets Enabled by E3 Ligase Tissue Restricted Expression

On target unwanted pharmacology limits clinical application

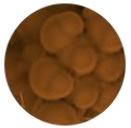


Tissue sparing or selective E3 ligases eliminate unwanted toxicity and allow full clinical potential



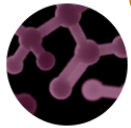
# Proprietary Pegasus™ TPD Platform

## Key Capabilities



### Expanded E3 Ligase Toolbox

- **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



### Understanding Degradation (PK/PD) Across Tissue Types

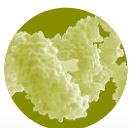
- **Quantitative System Pharmacology Model**
- Understanding and **Translating PK/PD** from preclinical systems into humans



### Proprietary Chemistry

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

**NEW**



### 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

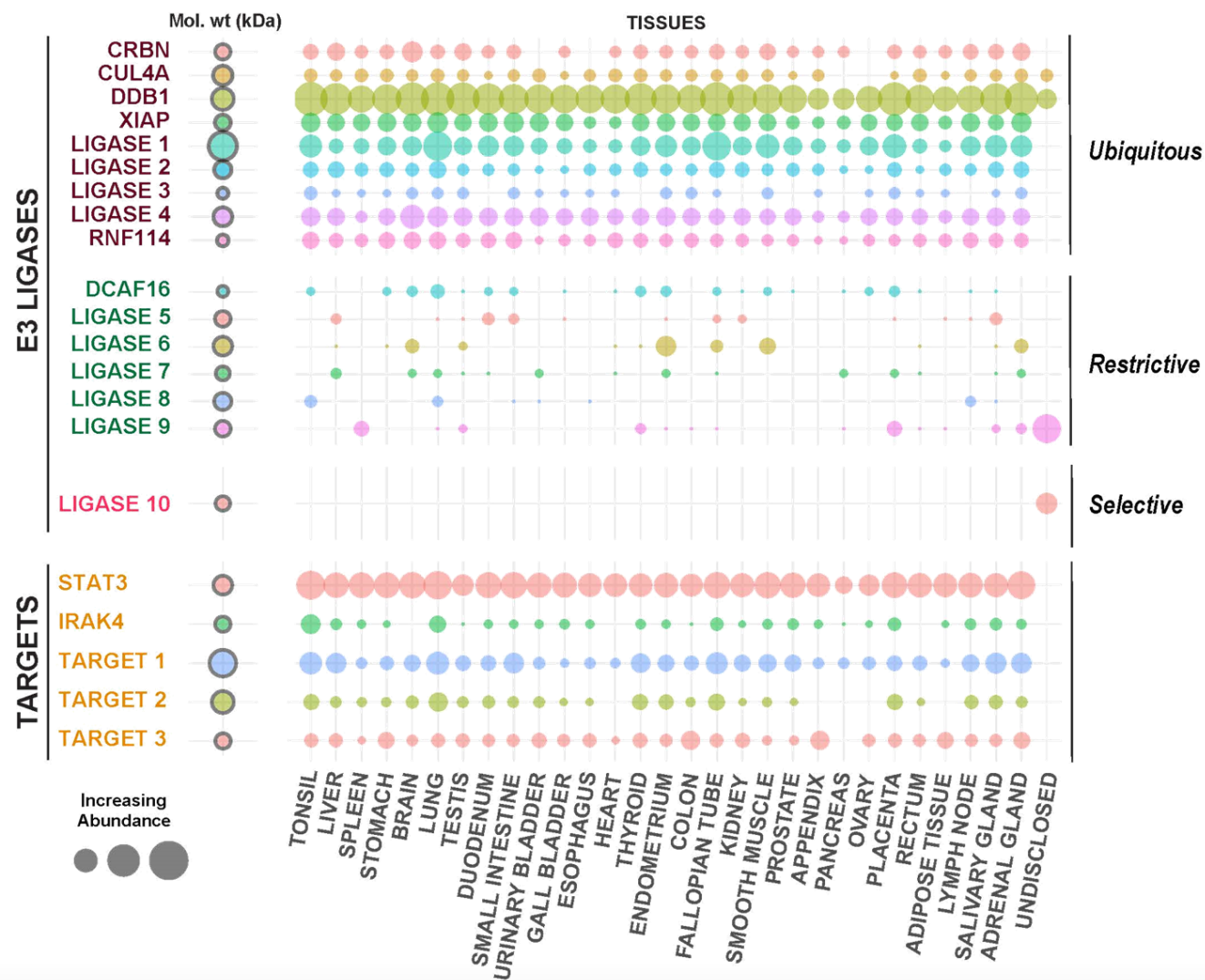
# Novel E3 Ligases to Drug a New Generation of Targets

TR

## Clinically Validated Targets Unlocked by E3 Ligase Differential Expression

On target unwanted pharmacology limits  
clinical application

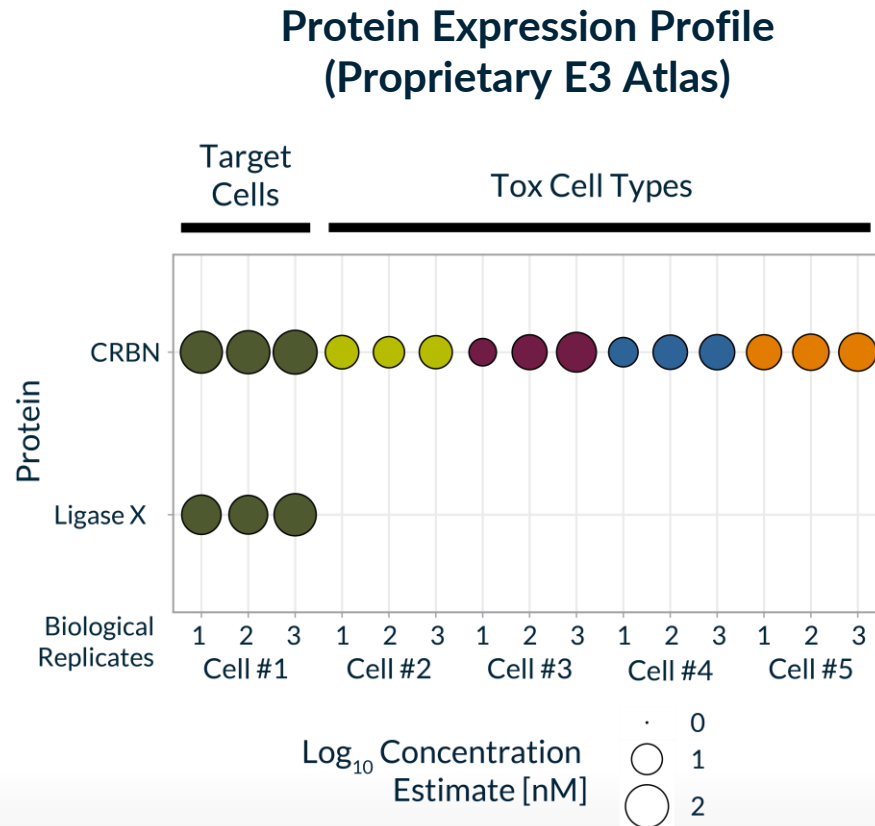
- Focused on determining the expression profiles of ~600 unique E3 ligases
- Patterns mapped in both disease and healthy contexts
- Ability to match a target protein with appropriate E3 ligase based on expression and biology via a machine learning algorithm
- Vision to develop tissue-selective or tissue-restricted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

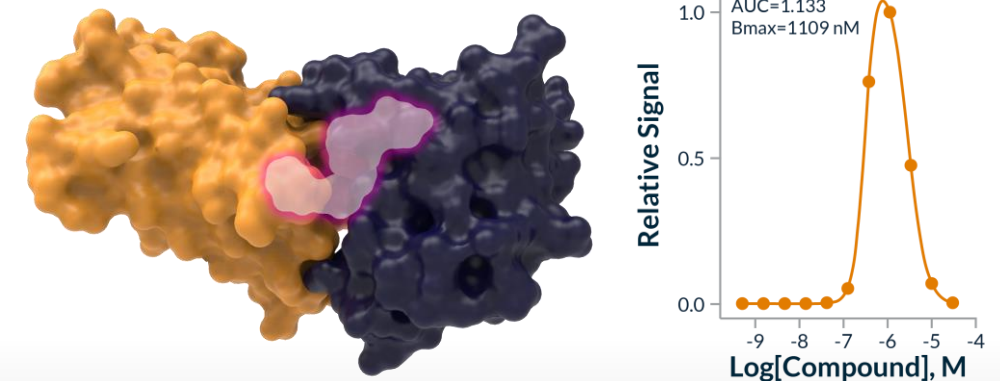


Ligand Identification and Optimization

Small Molecule Ligand Bound to a Tissue-selective E3 Ligase



Leads to an Active Ternary Complex with a Protein of Interest

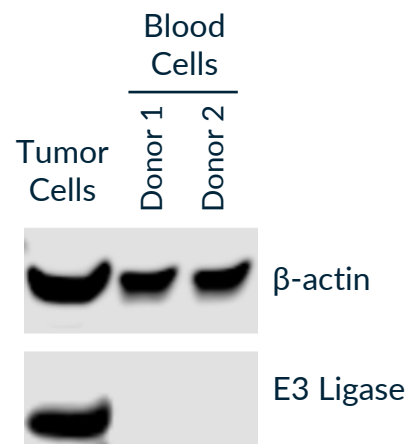




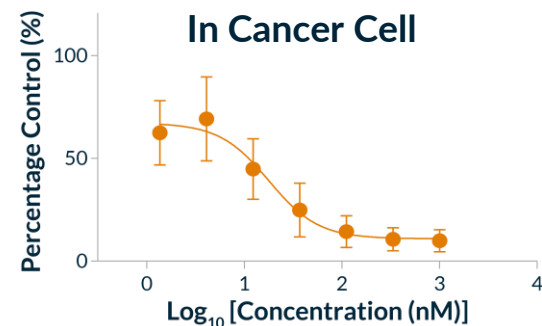
# Tissue-Selective Degradation Drives Increase of Therapeutic Index

- 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

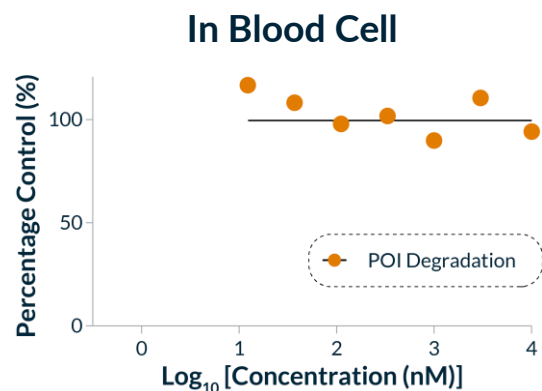
## E3 Ligase is Almost Absent in One Blood Cell Type



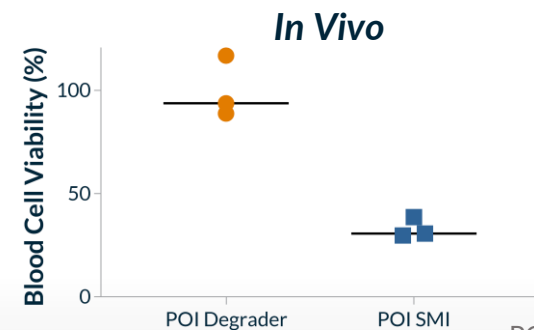
Optimization  
and  
Degradation  
Program



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**

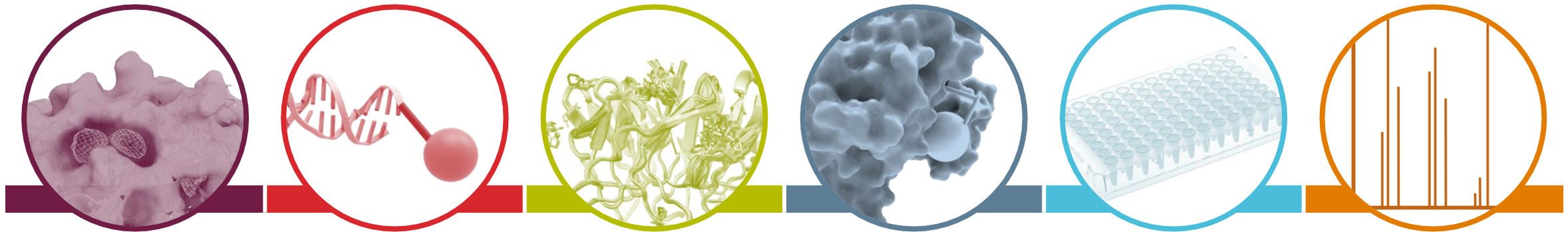


In a pharmacologically active dose *in vivo* a **degrader allows blood cells to survive** while SMI leads to substantial cell death

POI = protein target of interest

- This program is projected to nominate a development candidate in 2022

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



## Virtual Screen

### Criteria

- Availability of structure or homology model

### Approaches

- DB ~8 million purchasable cpds
- Cloud enables screen < 24hrs
- AI 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 high-throughput assay format

### Approaches

- Focused library
- Diversity set

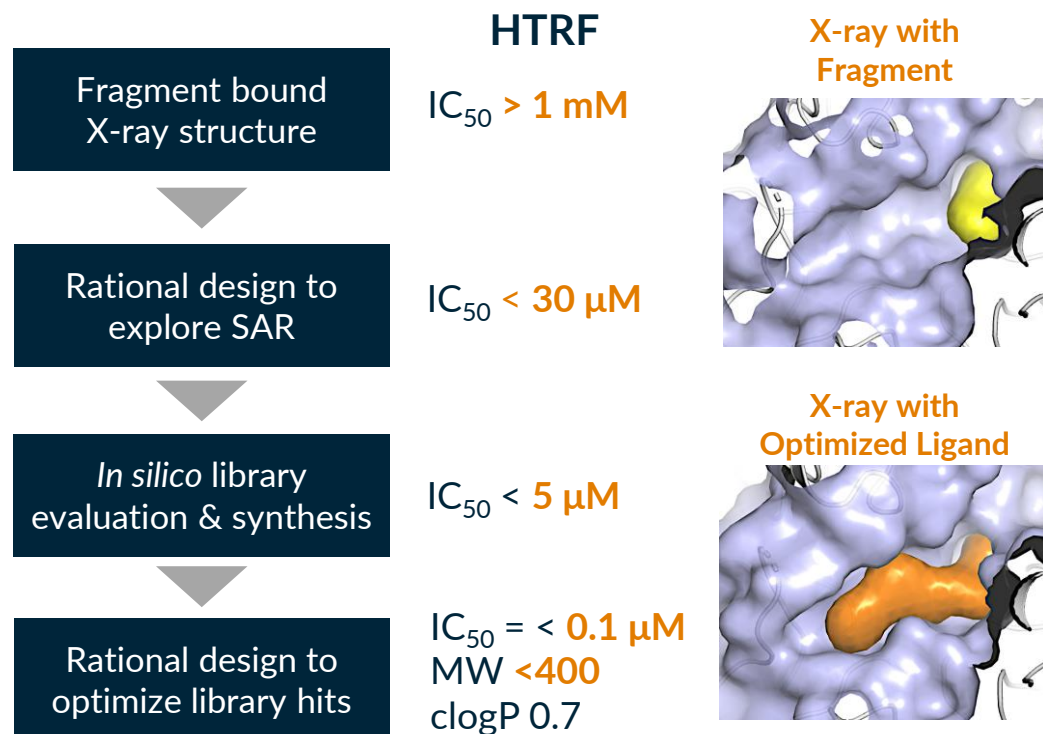
## ASMS

### Criteria

- Availability of high-quality protein

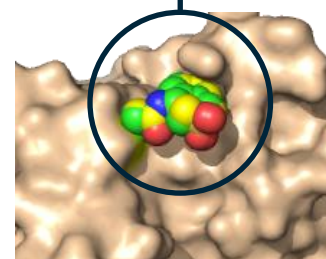
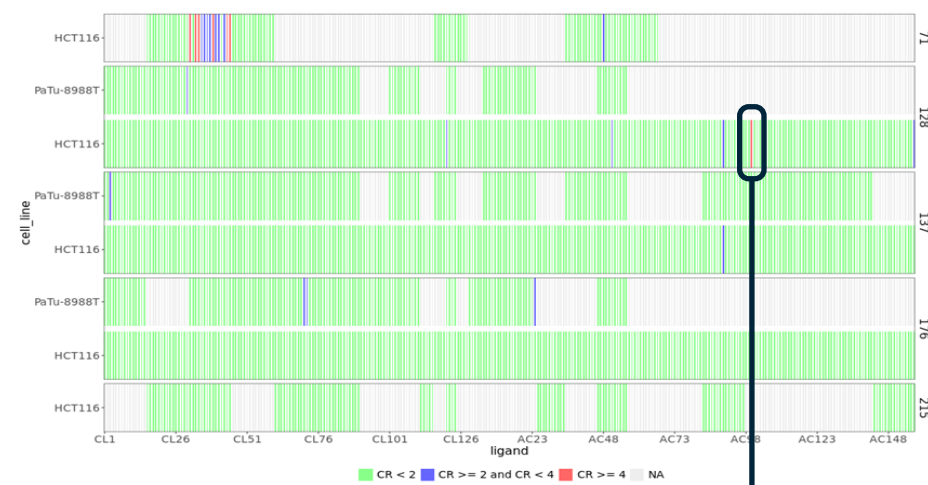
# Successful Examples of Fragment and Covalent Screens

## Fragment Based Virtual Optimization



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

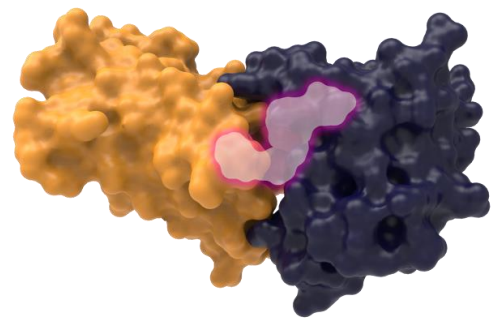
## Covalent Ligand E3 Ligase Hit Finding



- 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



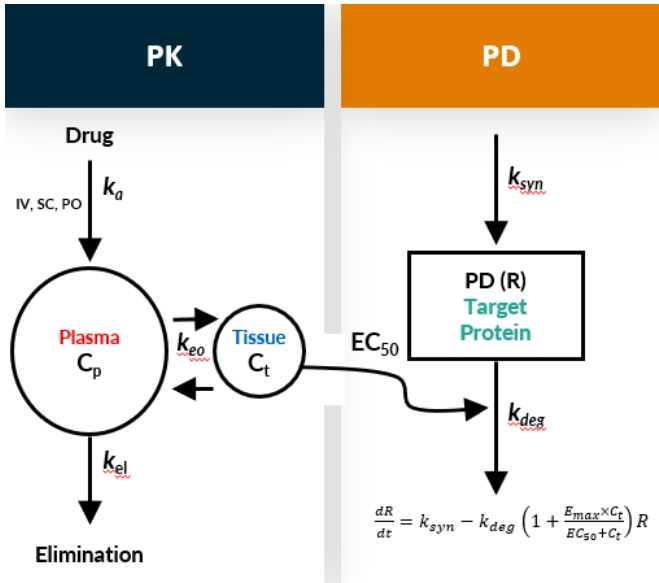
## AI-driven Insights

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

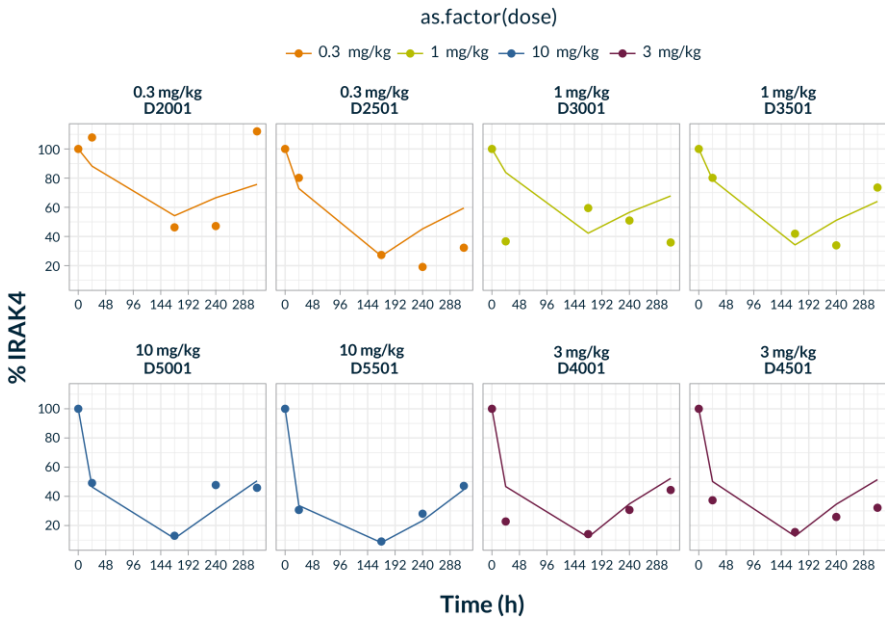
DMPK Properties	Degrader 1	Degrader 2	Degrader 3	Degrader 4
HLM / RLM (μL/min/mg)	317 / 193	74 / 22	<12 / <12	<12 / <12
P <sub>app</sub> (10 <sup>-6</sup> cm/s) / Efflux Ratio	ND / ND	6.0 / 1.3	14 / 21	4.3 / 2.0
Rat CI (mL/min/kg) / Vdss / F%	ND	35 / 9 / 8	19 / 7 / 14	7 / 3 / 18
Dog CI (mL/min/kg) /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

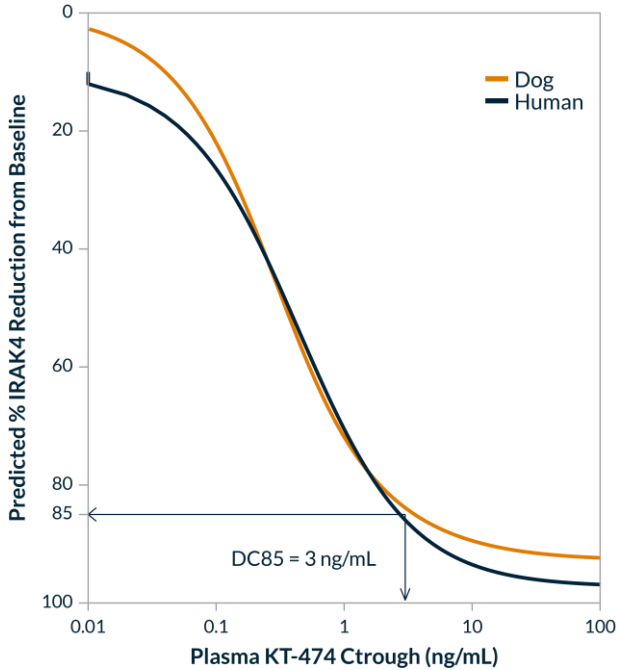
## Mechanistic PK/PD Modeling Describes the MoA of TPD



## 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

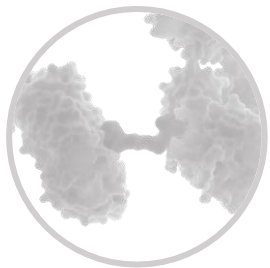


## Undrugged Targets

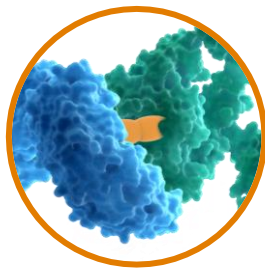
No other technology can drug

Ligandable  
Proteins  
e.g. STAT3

Un-ligandable  
Proteins  
e.g. other transcription  
factors



Heterobifunctional  
Degraders



Molecular  
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 5-year 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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[inquiries@kymeratx.com](mailto:inquiries@kymeratx.com)





# Appendix

# 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 co-co 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 immune-inflammatory



- Established April 2018
- Gained access to GSK's **DEL capabilities** to screen for ligands to targets and E3 ligases



- 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



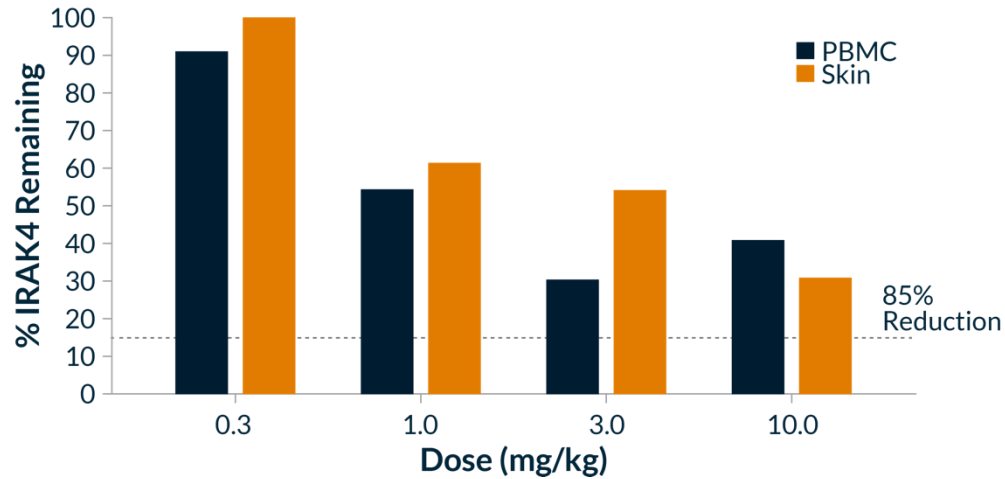




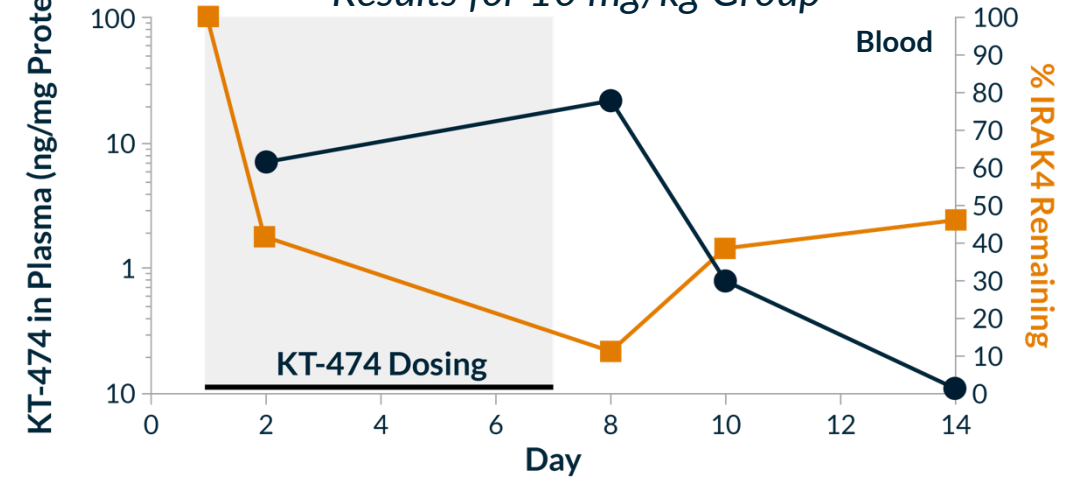
# IRAK4

# KT-474 Multi-dosing (Daily x 7 Days) Maximizes IRAK4 Degradation at Lower Doses in Dogs

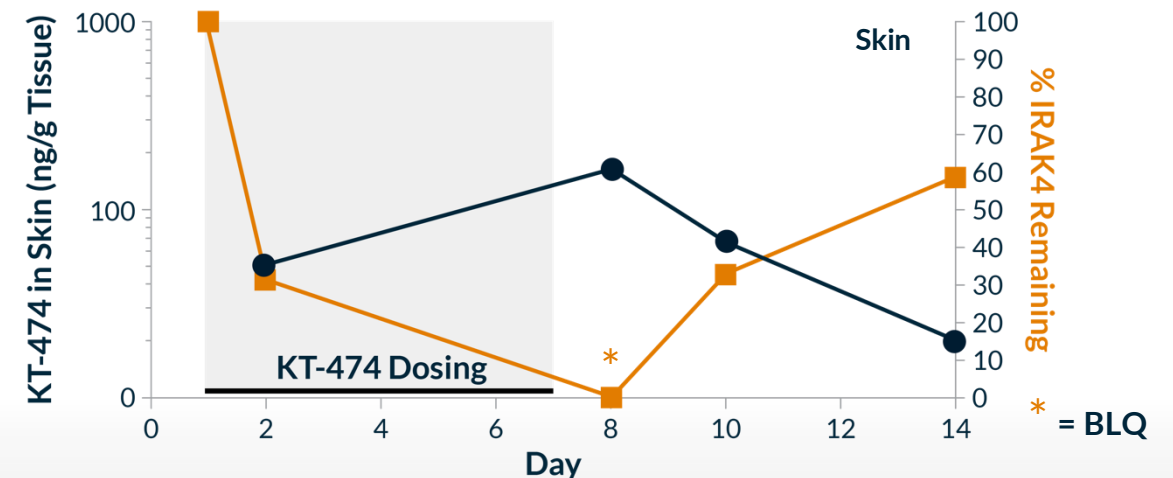
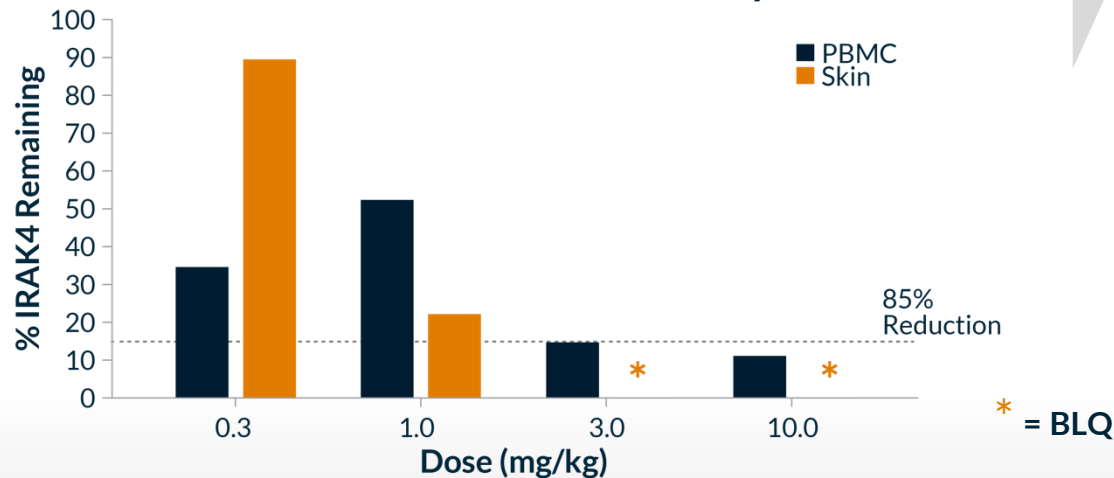
## IRAK4 Knockdown 24h after Day 1 Dose



## MAD PK/PD for Blood and Skin Results for 10 mg/kg Group



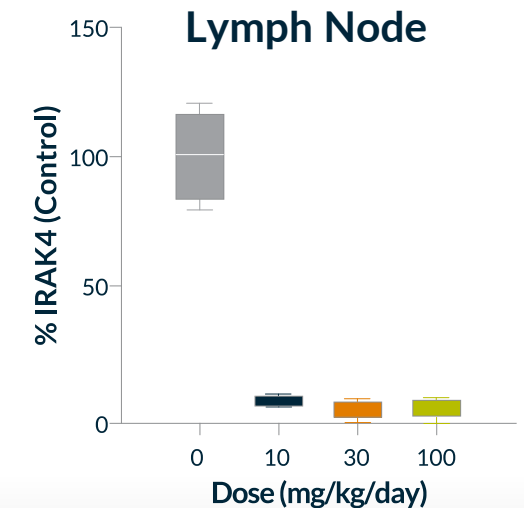
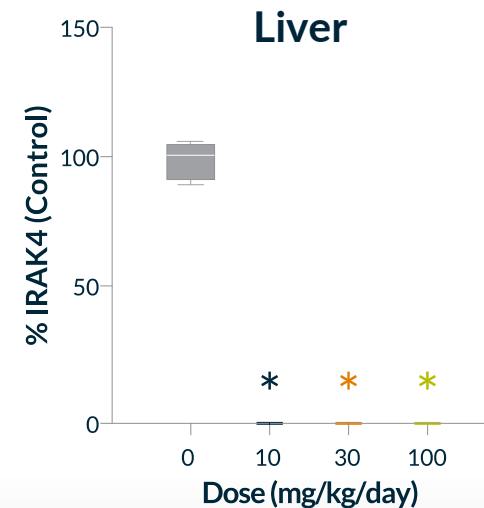
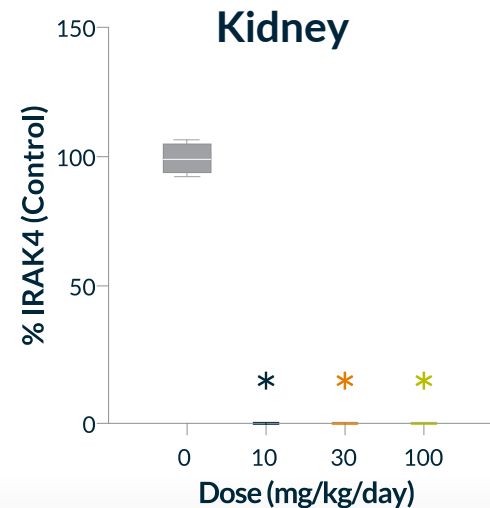
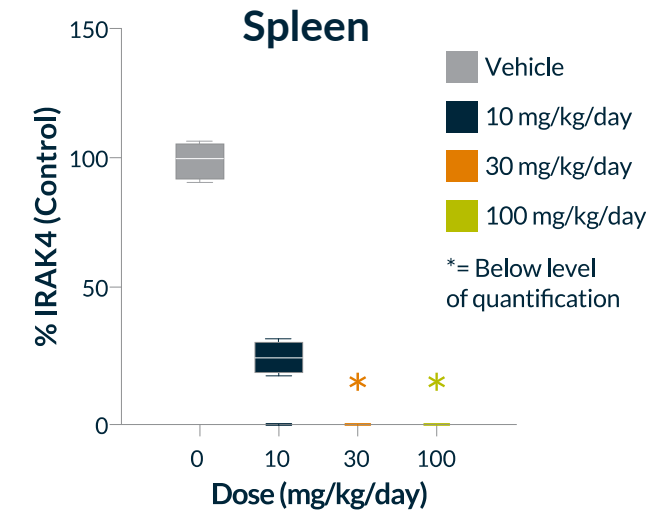
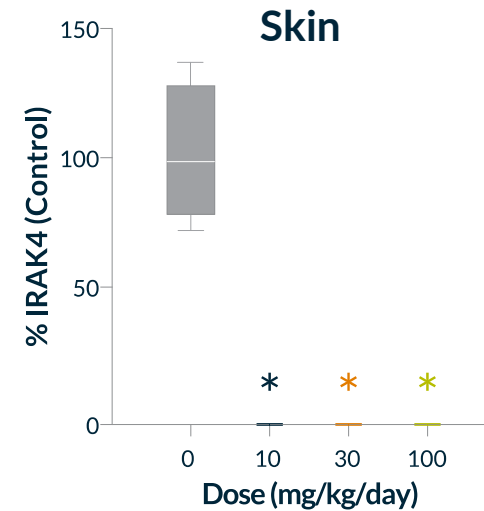
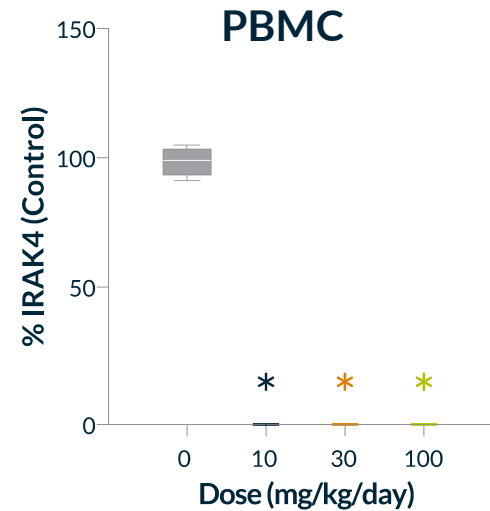
## IRAK4 Knockdown 24h after Day 7 Dose





# KT-474: Near Complete Systemic IRAK4 Degradation is Well Tolerated in Preclinical Non-rodent Model

- Orally-administered KT-474 evaluated in a 14-day non-GLP tox and PKPD study in rodent and non-rodents (shown).
- Almost complete knockdown demonstrated across multiple tissues at multiple doses
- Compound well-tolerated at all doses up to 600 mg/kg for rodents and 100 mg/kg for non-rodents

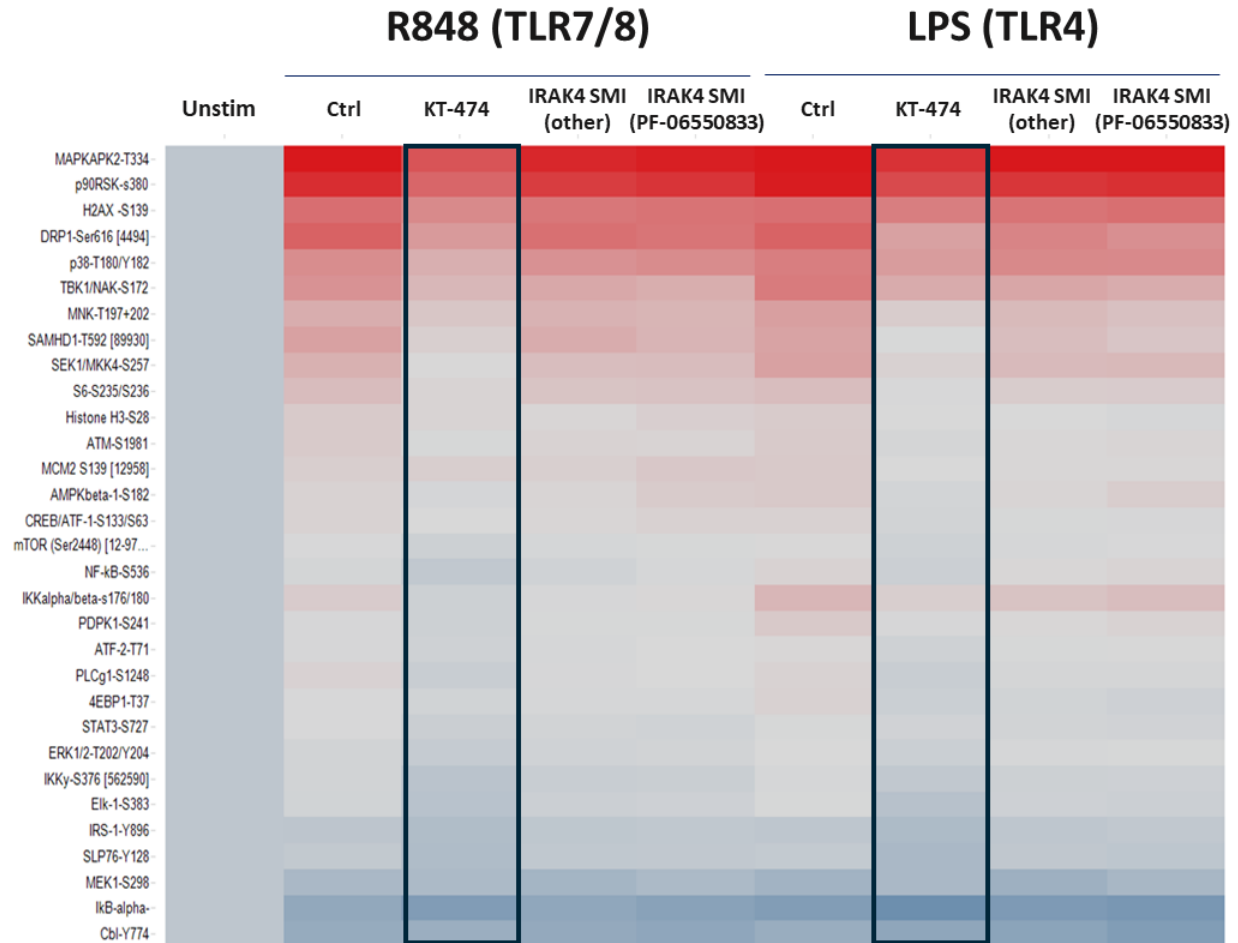


Vehicle  
10 mg/kg/day  
30 mg/kg/day  
100 mg/kg/day  
\*= Below level of quantification



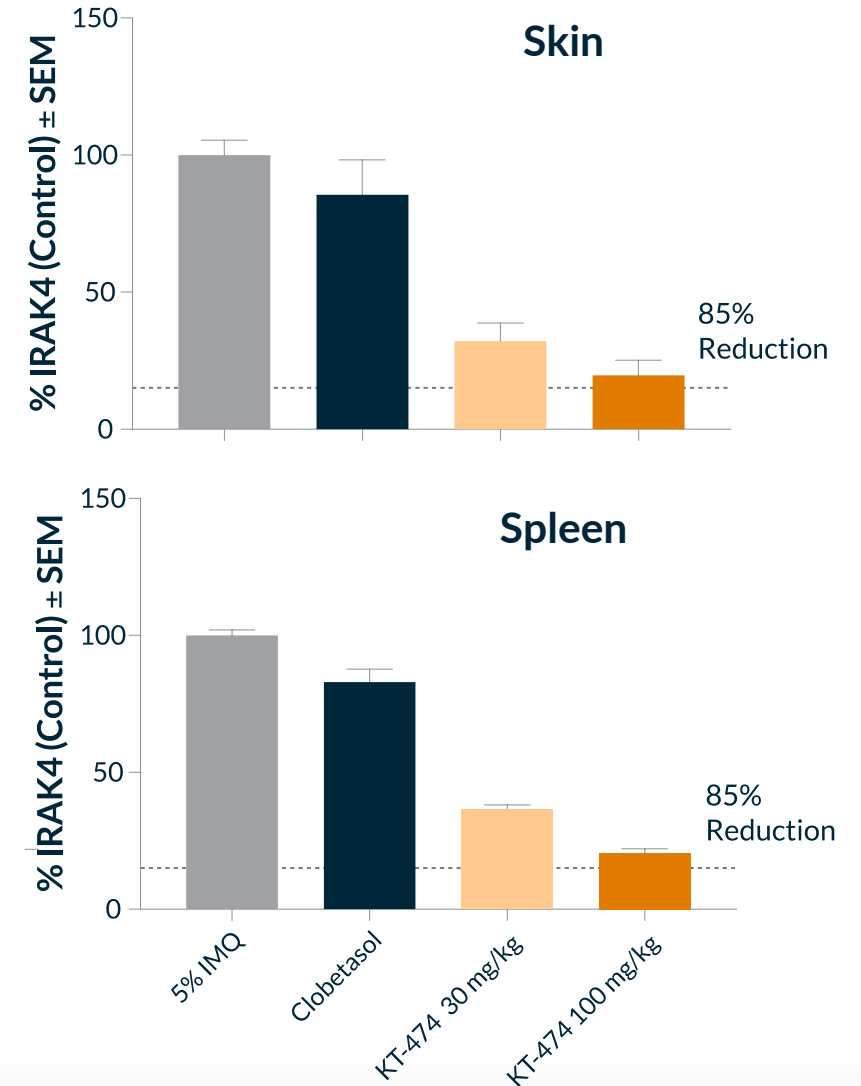
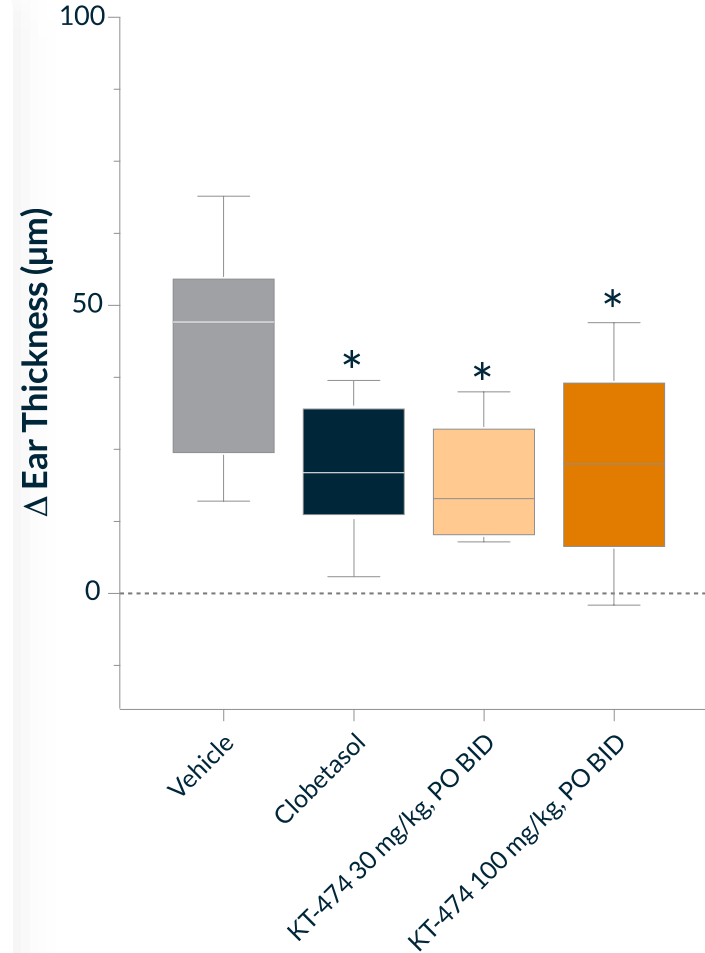
# IRAK4 Degradation Superior to Kinase Inhibition in Intracellular Signaling

- Phosphorylation events upon TLR activations monitored using flow cytometry
- KT-474 inhibited pro-inflammatory phosphorylation events in a superior manner to small-molecule inhibitors including clinically active PF-compound



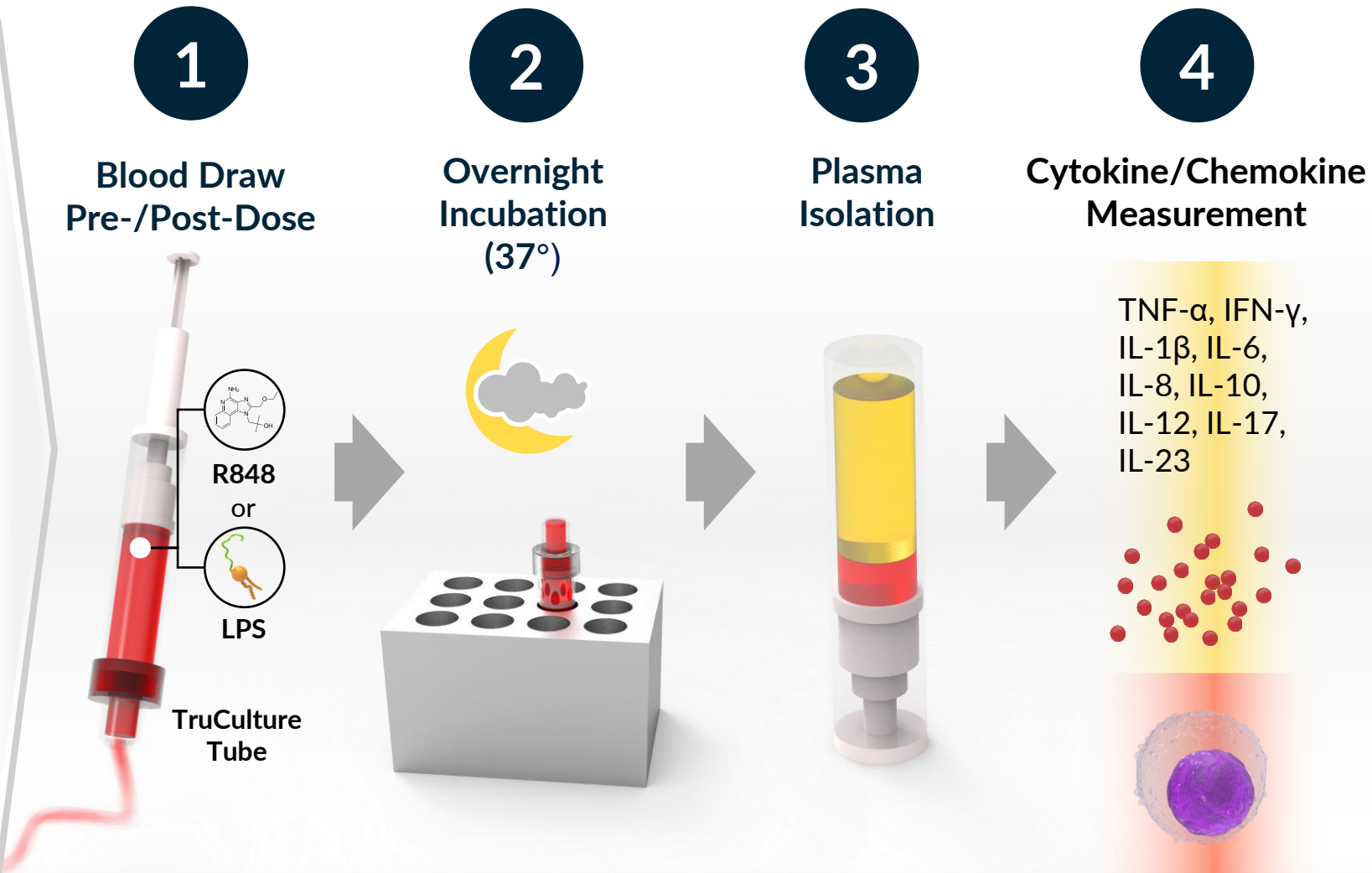
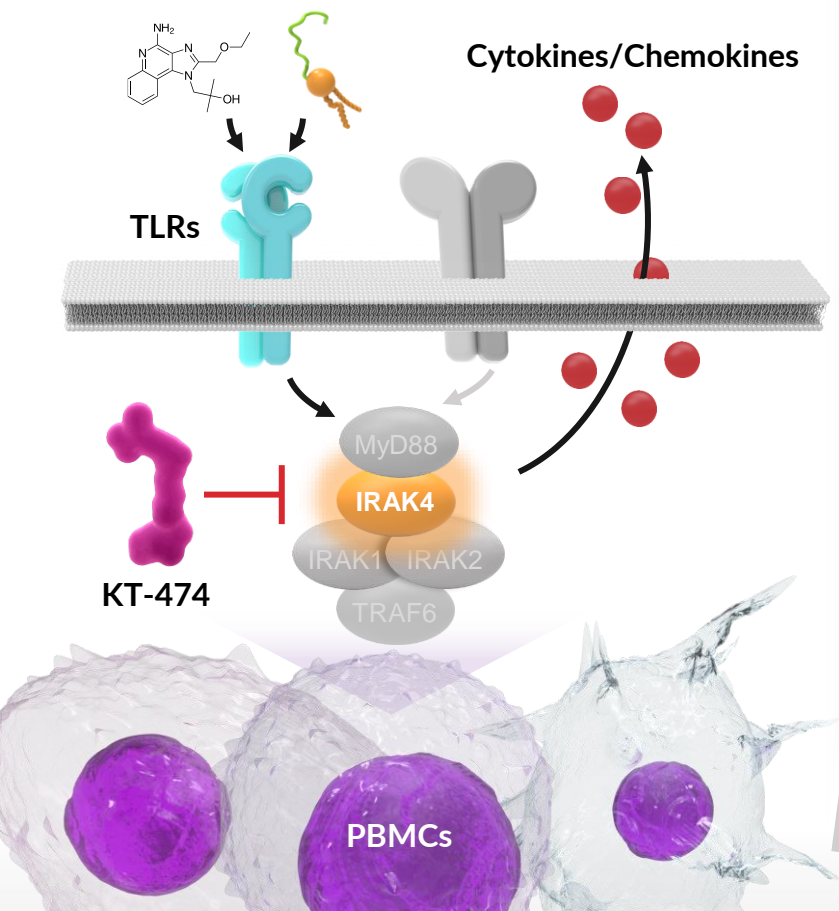
# 85% IRAK4 Degradation Sufficient for Maximal *In Vivo* Efficacy in Preclinical Models

- Ability to inhibit topical skin thickening induced by imiquimod was measured in a mouse model of psoriasis
- Orally dosed KT-474 inhibited thickening, a reflection of local and systemic inflammation, comparable to a topic corticosteroid after 2 or 4 days of dosing
- Full efficacy at doses achieving at 65-80% IRAK4 reduction in skin and spleen. In other models KT-474 has demonstrated full efficacy with 85% degradation



# Ex Vivo Cytokine Stimulation: Methodology in KT-474 Phase 1 Trial

## Impact of KT-474 on TLR-stimulated Cytokine/Chemokine Production





# IRAK4 Non-Interventional Study

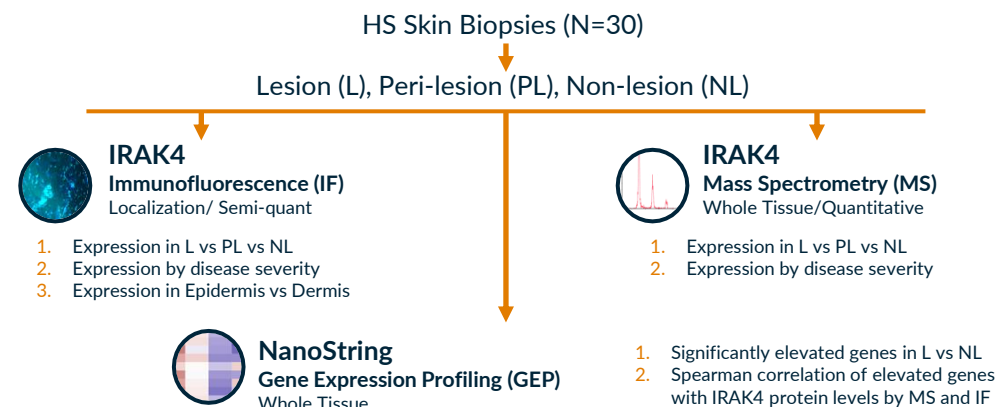
# Non-interventional Study in HS and AD Patients

Designed to Characterize IRAK4 Expression and its Relationship to Inflammatory Biomarkers

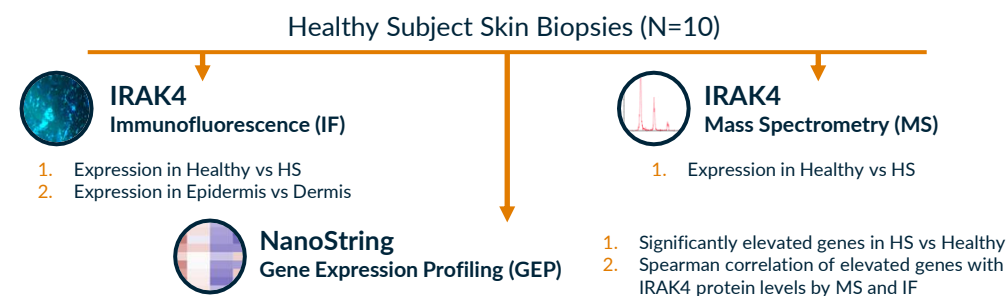
## Study Design

<b>Patients Enrolled</b>	<ul style="list-style-type: none"><li>30 HS: 9 mild, 10 moderate, 11 severe</li><li>10 AD: 8 mild, 1 moderate, 1 severe</li></ul>
<b>Inclusion Criteria</b>	<ul style="list-style-type: none"><li>Age 18 or older</li><li>Active Hidradenitis Suppurativa (HS) or Atopic Dermatitis (AD)</li><li>Mild, moderate, and severe HS (IHS4 score) or AD (EASI score)</li></ul>
<b>Exclusion Criteria</b>	<ul style="list-style-type: none"><li>Patients currently on a biologic or other immunosuppressive treatment for HS or AD</li><li>Use of biologic treatment for HS or AD within 3 months or 5 half-lives, whichever is longer</li><li>Use of non-biologic immunosuppressive treatment in last 4 weeks</li></ul>
<b>Biomarker Endpoints</b>	<ul style="list-style-type: none"><li>Targeted MS of IRAK4 in skin biopsies</li><li>IRAK4 immunofluorescence in skin biopsies</li><li>Proinflammatory gene transcripts in skin biopsies</li><li>Flow cytometry for IRAK4 in ex vivo treated whole blood</li><li>Cytokines from ex vivo treated whole blood</li><li>Plasma cytokines and acute phase reactants</li></ul>
<b>Reporting Status</b>	<ul style="list-style-type: none"><li>Interim data on IRAK4 expression in HS skin and blood presented in October 2020 at SHSA Meeting</li><li>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</li></ul>

## Non-interventional Study Methods



## Control Methods



## Ex-vivo R848-Stimulated Monocyte Methods

1. Mechanistic study designed to evaluate impact of IRAK4 degradation on response of healthy monocytes to TLR7/8 agonist R848
2. 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

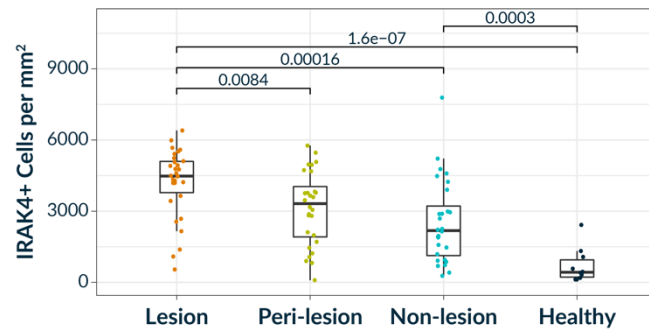


# IRAK4 Protein Expression in Autoimmune Diseases: Upregulation in Skin of HS Patients Compared to Healthy Subjects

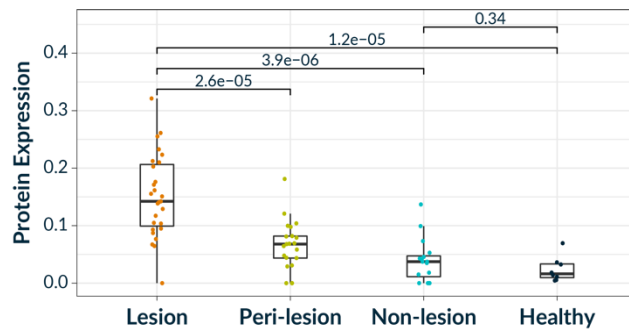
IRAK4 protein levels overexpressed in HS patient skin lesions

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

## Immunofluorescence (IF)



## Mass Spectrometry (MS)



## Histology

H&E

## IF Stain

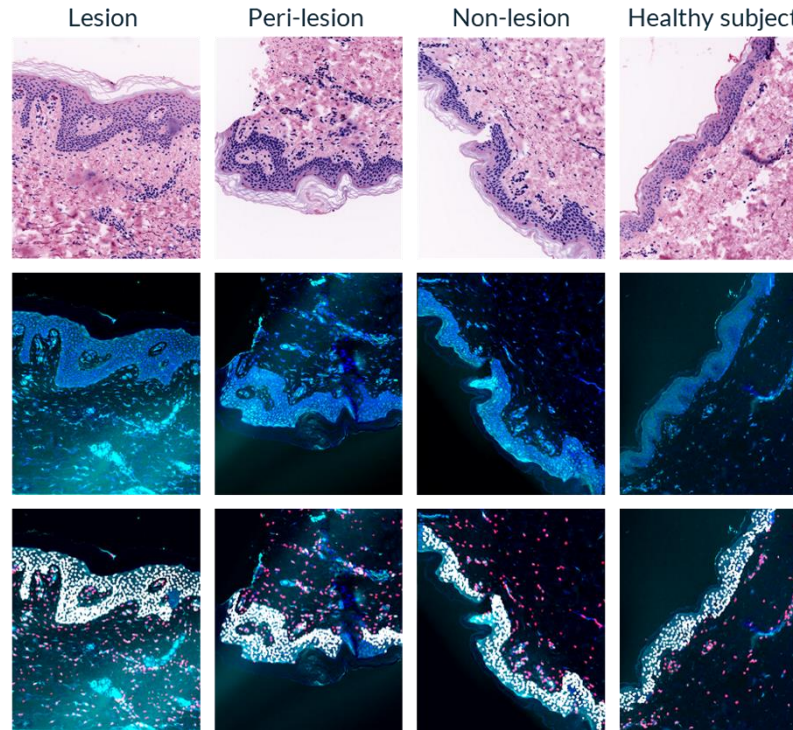
Nuclear

IRAK4

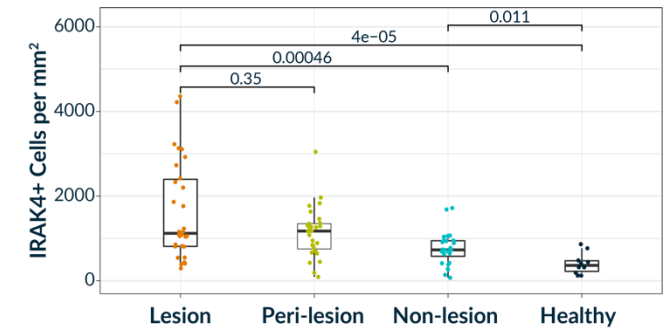
## Morphology Mask

Epidermal Keratinocytes

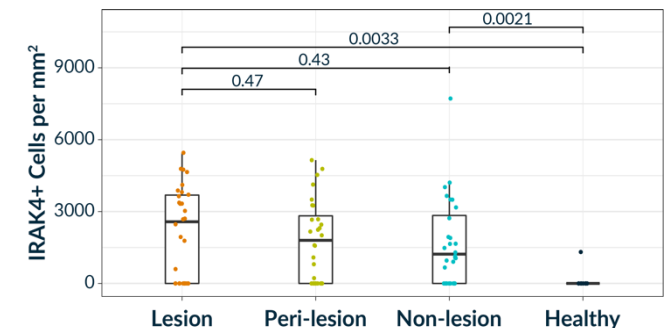
Dermal Immune cells



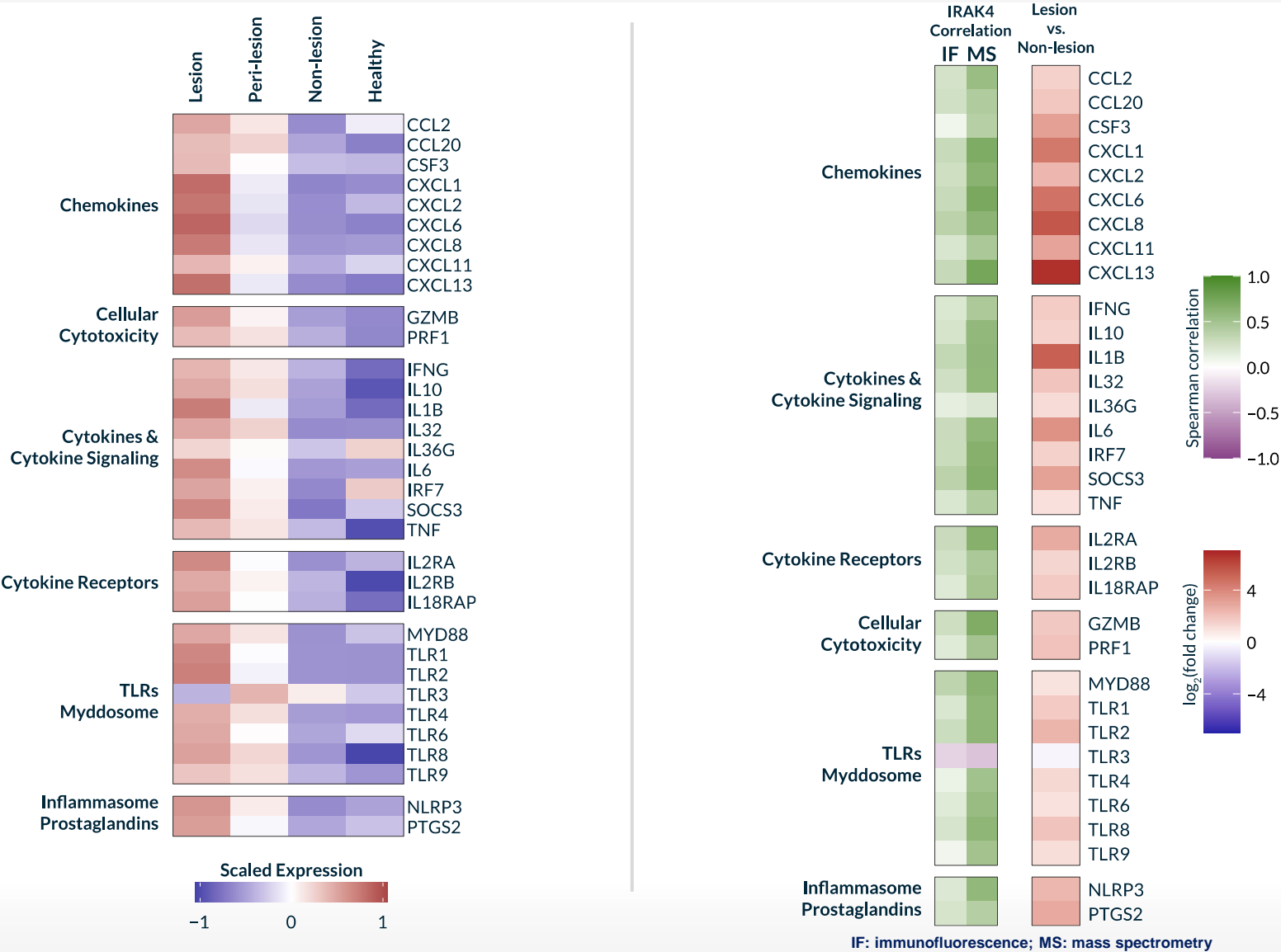
## Dermal Immune Cells



## Epidermal Keratinocytes

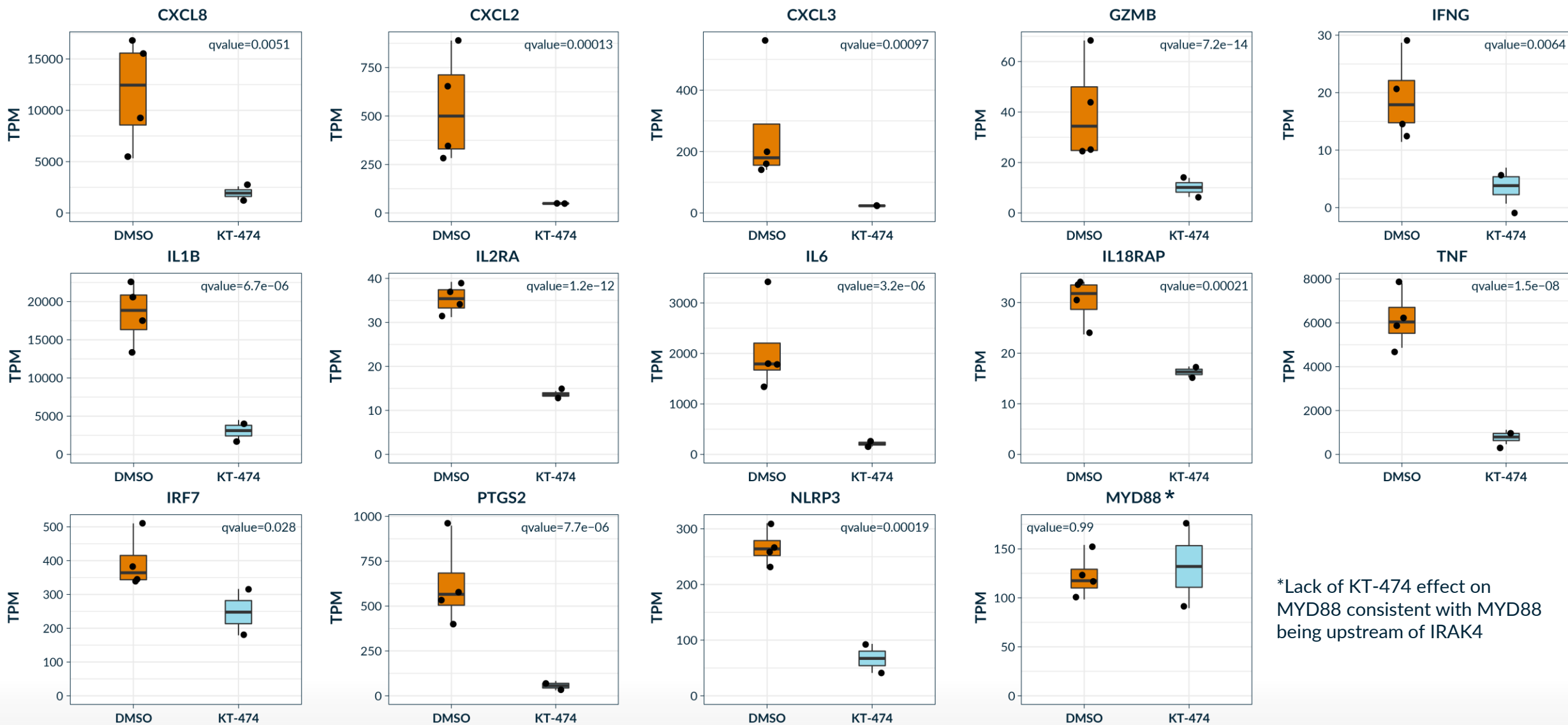


# Multiple Proinflammatory Transcripts Are Upregulated and Correlate with IRAK4 Protein Levels in HS Skin Lesions



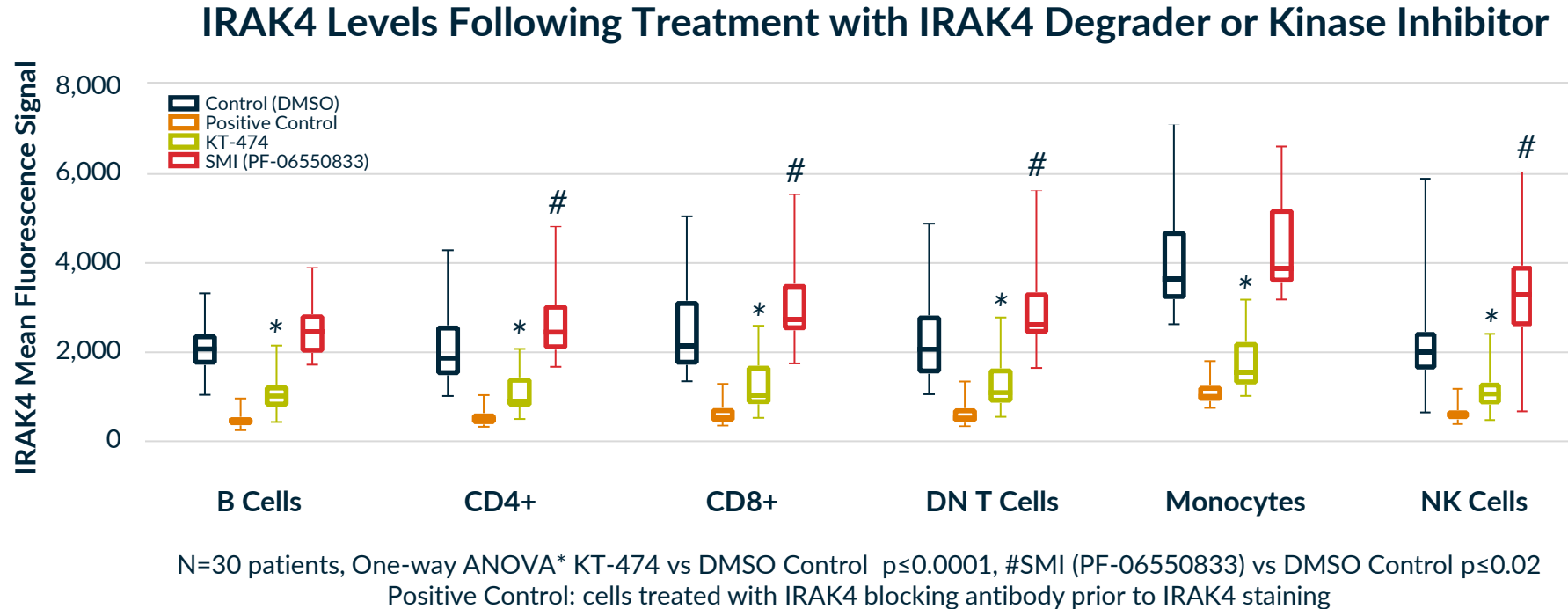
- Upregulation of TLRs, IL-1 $\beta$ /IL-36, MYD88, and multiple additional drivers of inflammation that all correlate with IRAK4 protein expression
- Highlights potential of IRAK4 targeting to treat diseases like HS characterized by marked pleiotropic inflammation

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



\*Lack of KT-474 effect on MYD88 consistent with MYD88 being upstream of IRAK4

# IRAK4 Degradar Downregulates IRAK4 Expression Across All PBMC Subsets



## 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

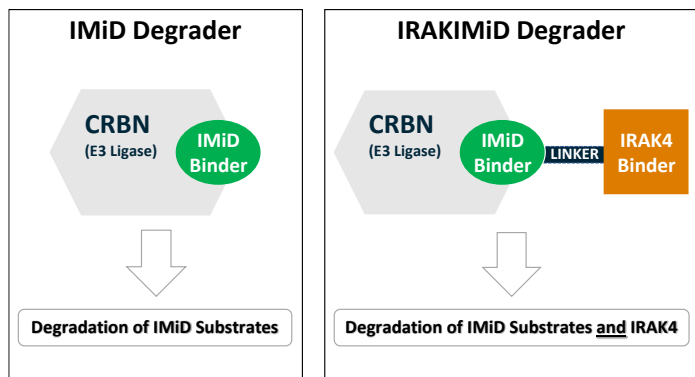
- **IRAK4 is overexpressed in HS skin relative to healthy subjects due to increase in number of IRAK4+ dermal immune cells and epidermal keratinocytes**
  - Higher expression in active HS skin Lesions compared to peri-lesion and/or non-lesion skin associated with increase in infiltrating IRAK4+ dermal 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



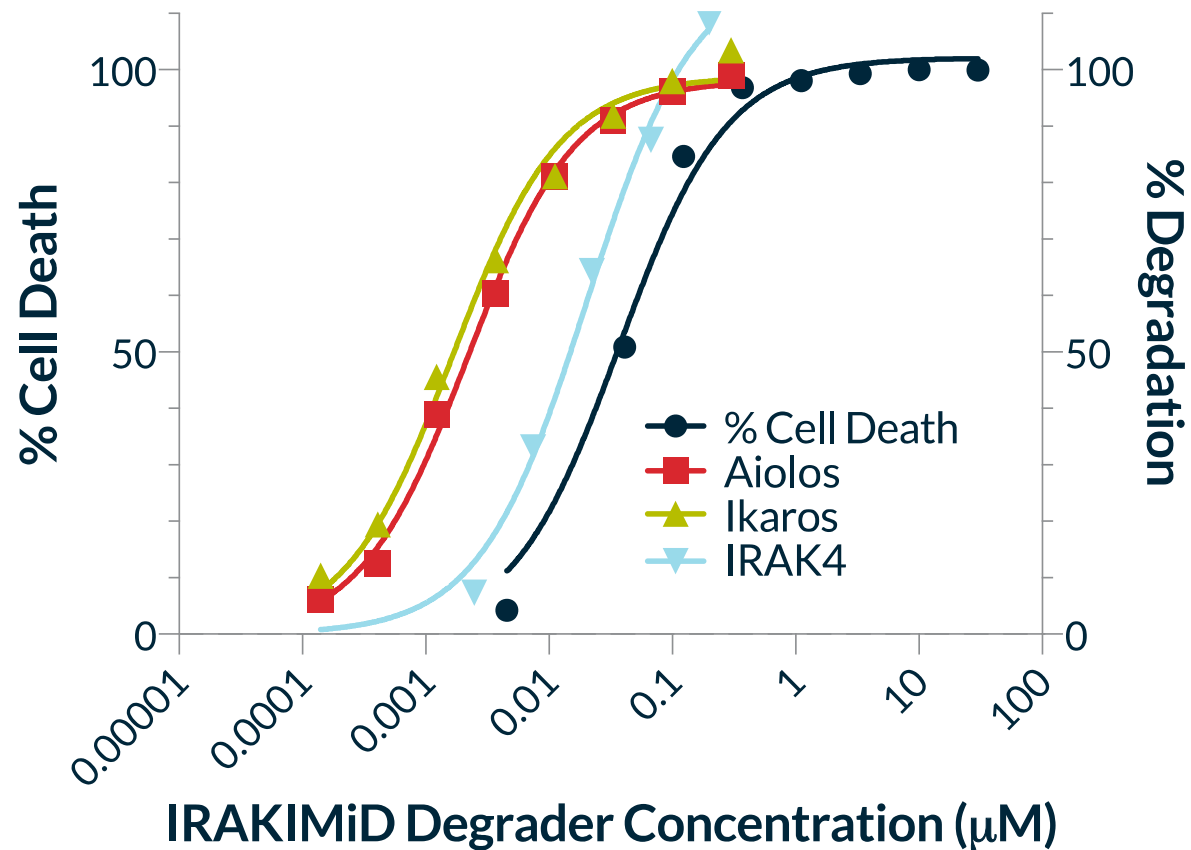
IRAKIMiD

 KYMERA

# Degradation of IRAK4, Ikaros and Aiolos Correlates to Cell Killing



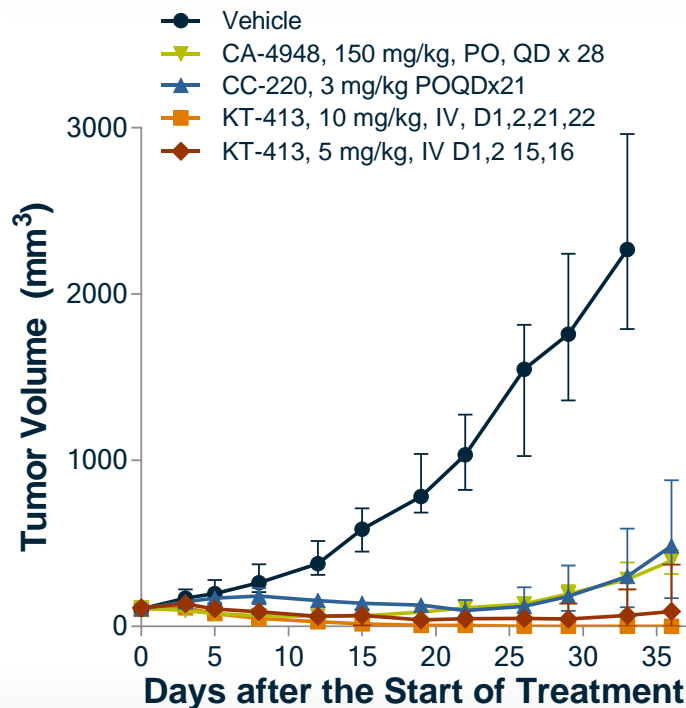
- IRAK4, Ikaros and Aiolos degradation measured in MYD-88-mutated OCI-Ly10 cells after 24 h of drug exposure
  - IRAK4  $DC_{50}$  = 4 nM
  - Ikaros/Aiolos  $DC_{50}$  = 2/2 nM
- Degradation correlates with cell killing effects
  - $IC_{50}$  = 31 nM





# KT-413 is Highly Active on Intermittent Dosing Regimens and Superior to Clinically Active CA-4948 and CC-220

- 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 latest generation IMiD CC-220 alone
- Minimally active dose of 3 mg/kg D1,2 showed extended tumor exposure and strong degradation of both IRAK4 and IMiD substrates that was maintained for at least 72h



Drug	CR	PR	SD	PD
CA-4948	0	0	3	4
CC-220	0	1	4	2
KT-413 (5 mpk)	2	2	3	-
KT-413 (10 mpk)	5	2	-	-

**CR:** <10mm<sup>3</sup> tumor on D26  
**PR:** >50% regression from baseline  
**SD:** <50% regression to 20% increase in tumor volume  
**PD:** >20% tumor growth on D26

