



Monte Rosa
THERAPEUTICS

From Serendipity to Rational Design

Taking Molecular Glue Degraders to New Heights

December 2021

Forward-Looking Statements

This presentation includes express and implied “forward-looking statements,” including forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward looking statements include all statements that are not historical facts, and in some cases, can be identified by terms such as “may,” “might,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “objective,” “anticipate,” “believe,” “estimate,” “predict,” “potential,” “continue,” “ongoing,” or the negative of these terms, or other comparable terminology intended to identify statements about the future. Forward-looking statements contained in this presentation include, but are not limited to, statements about our product development activities, including our expectations around -the timing for filing our IND for our GSPT1 program advancement of additional programs to Lead Optimization, the continuing development of our QuEEN™ platform and the expansion of our degron library and ability to identify additional molecular glue degraders. By their nature, these statements are subject to numerous risks and uncertainties, including the impact that the current COVID-19 pandemic will have on our development activities and operations, as well as those risks and uncertainties set forth in our Quarterly Report on Form 10-Q for the third quarter ended September 30, 2021 filed with the US Securities and Exchange Commission, and subsequent filings, that could cause actual results, performance or achievement to differ materially and adversely from those anticipated or implied in the statements. You should not rely upon forward looking statements as predictions of future events. Although our management believes that the expectations reflected in our statements are reasonable, we cannot guarantee that the future results, performance or events and circumstances described in the forward-looking statements will be achieved or occur. Recipients are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date such statements are made and should not be construed as statements of fact. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future presentations or otherwise, except as required by applicable law. Certain information contained in this presentation and statements made orally during this presentation relate to or are based on studies, publications, surveys and other data obtained from third-party sources and our own internal estimates and research. While we believe these third-party studies, publications, surveys and other data to be reliable as of the date of this presentation, it has not independently verified, and makes no representations as to the adequacy, fairness, accuracy or completeness of, any information obtained from third-party sources. In addition, no independent source has evaluated the reasonableness or accuracy of our internal estimates or research and no reliance should be made on any information or statements made in this presentation relating to or based on such internal estimates and research.



Monte Rosa Therapeutics Highlights

Taking molecular glue degraders (MGDs) to new heights

- **Next-generation molecular glue-based targeted protein degradation** platform developing breakthrough small molecule drugs that selectively degrade therapeutically-relevant proteins
- **Targeting the undruggable proteome** via AI-based degran prediction & rational design of highly selective MGDs
- **IND for lead program in 2022** with clinical development planned in Myc-addicted solid tumors and hematological malignancies
- **Five disclosed programs** targeting high unmet medical needs in oncology and non-oncology indications
- **World-class leadership & SAB** with deep drug discovery and development expertise and know-how



World Class Leadership

Deep expertise in molecular glue discovery and drug development

Senior Management



Markus Warmuth, M.D.
Chief Executive Officer



Ajim Tamboli, CFA
Chief Financial Officer



Sharon Townson, Ph.D.
Chief Technology Officer



Owen Wallace, Ph.D.
Chief Scientific Officer



John Castle, Ph.D.
Chief Data Scientist



Filip Janku, M.D., Ph.D.
Chief Medical Officer



Jullian Jones, Ph.D., J.D., MBA
SVP, Business Development



Silvia Buonamici, Ph.D.
SVP, Drug Discovery Biology



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Markus Warmuth, M.D. | CEO, Monte Rosa

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Kimberly Blackwell, M.D., Chief Medical Officer, Tempus

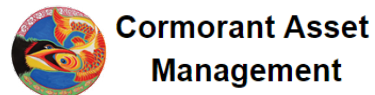
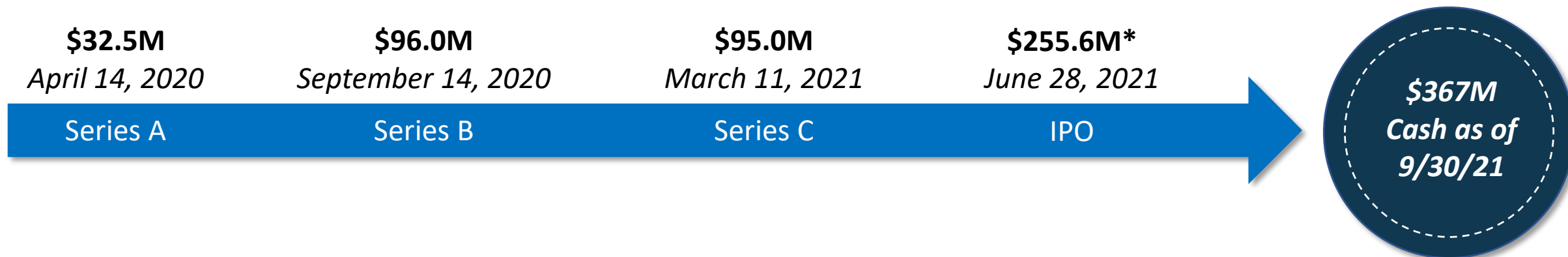
David Schenkein, M.D., General Partner, GV

Nir London, PhD, Assistant Professor, Weizman Institute of Science, Israel



Strong Cash Position and Investor Support

Over \$455M raised since 2020 with top tier investors provides runway into late 2024



**Aggregate IPO gross proceeds were approximately \$255.6 million before deducting underwriting discounts and commissions and other offering expenses and include an additional \$33.3 million in gross proceeds the company received as part of its IPO from the full exercise of the underwriters' option to purchase up to an additional 1,755,000 shares of common stock at the public offering price of \$19.00 per share.*





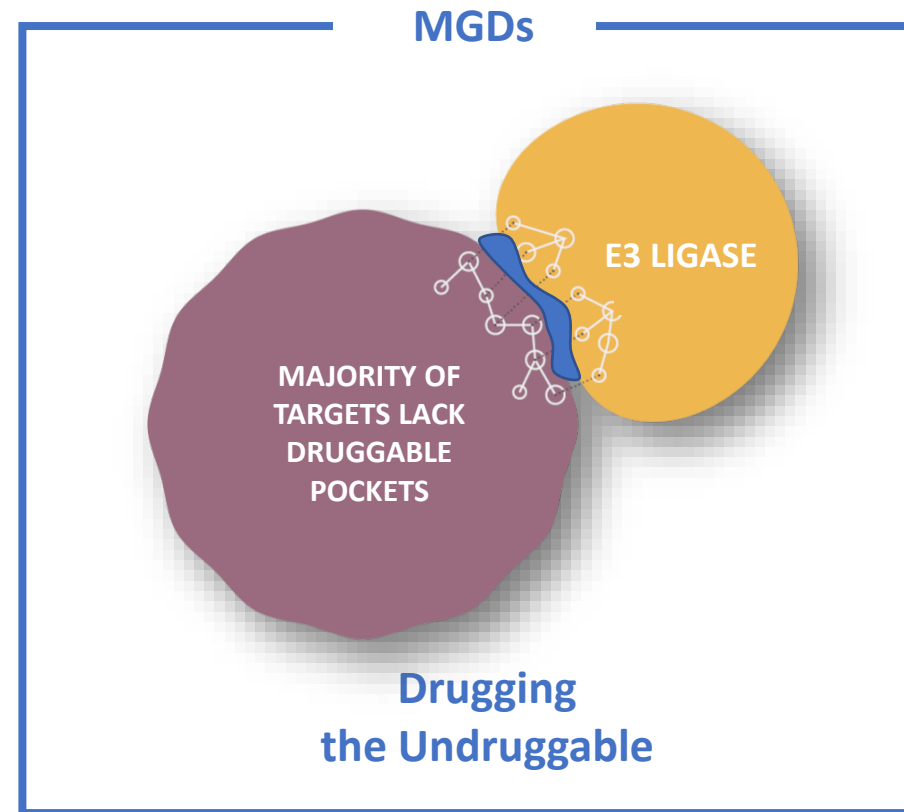
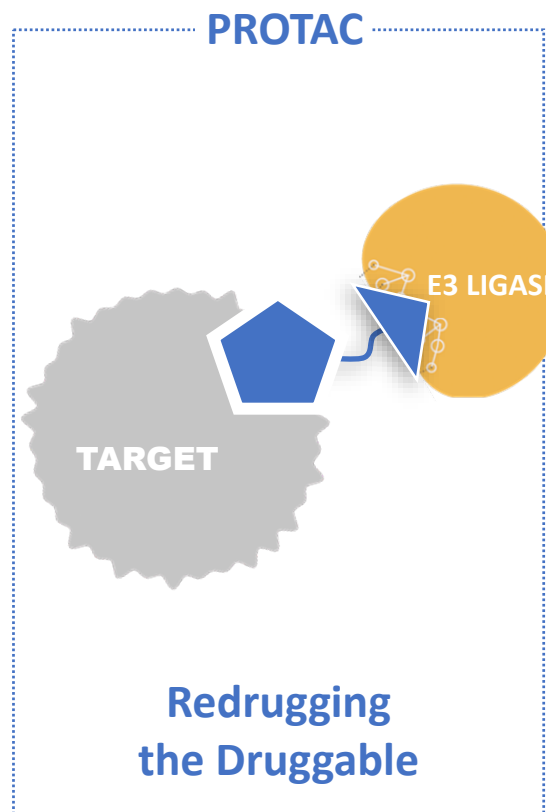
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Introduction to Monte Rosa Therapeutics

Next-generation molecular glue-based targeted protein degradation platform developing breakthrough small molecule therapeutics

Molecular Glue Degraders (MGDs)

Expanding target space, fostering a new generation of drugs

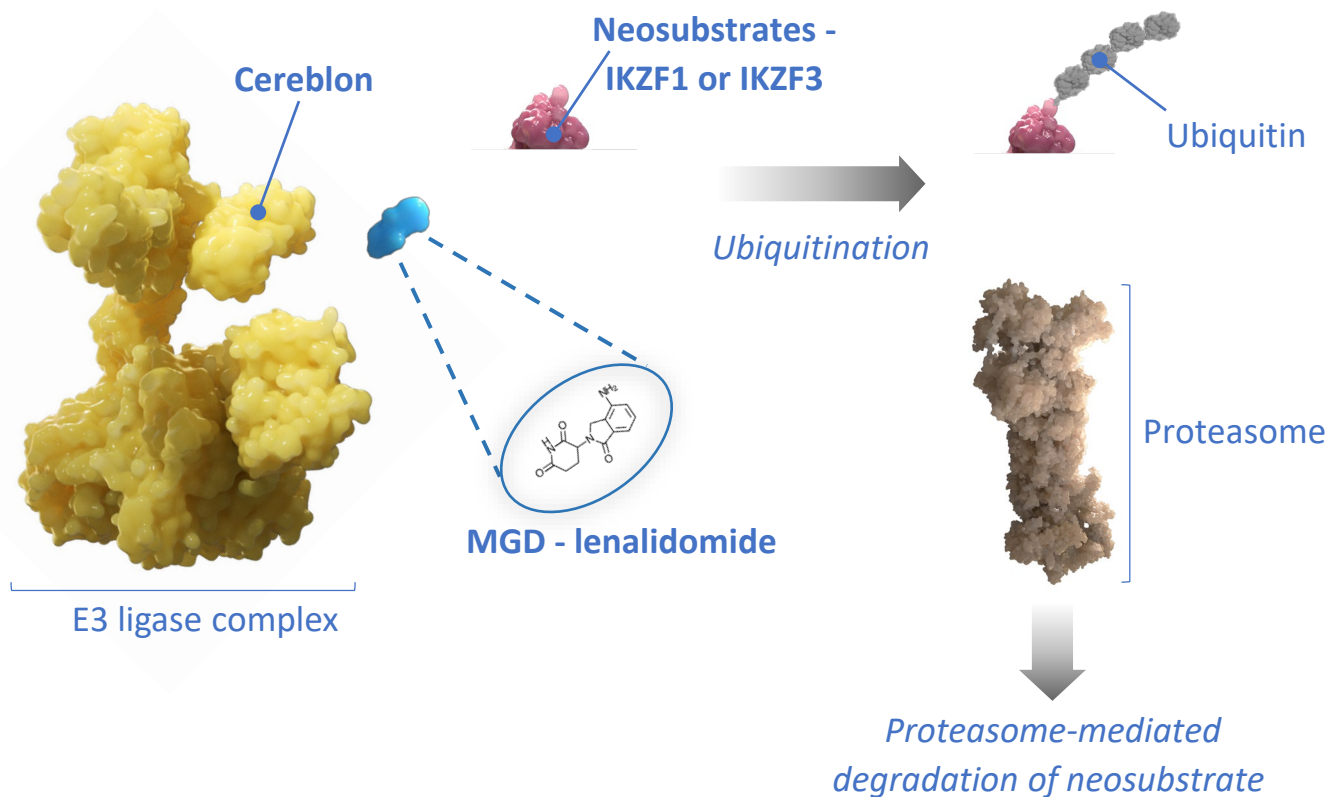


3-10% OF
PROTEOME

UNCHARTED
CHEMICAL AND TARGET SPACES

Molecular Glue Degraders (MGDs)

A powerful and differentiated approach to eradicate disease-causing proteins



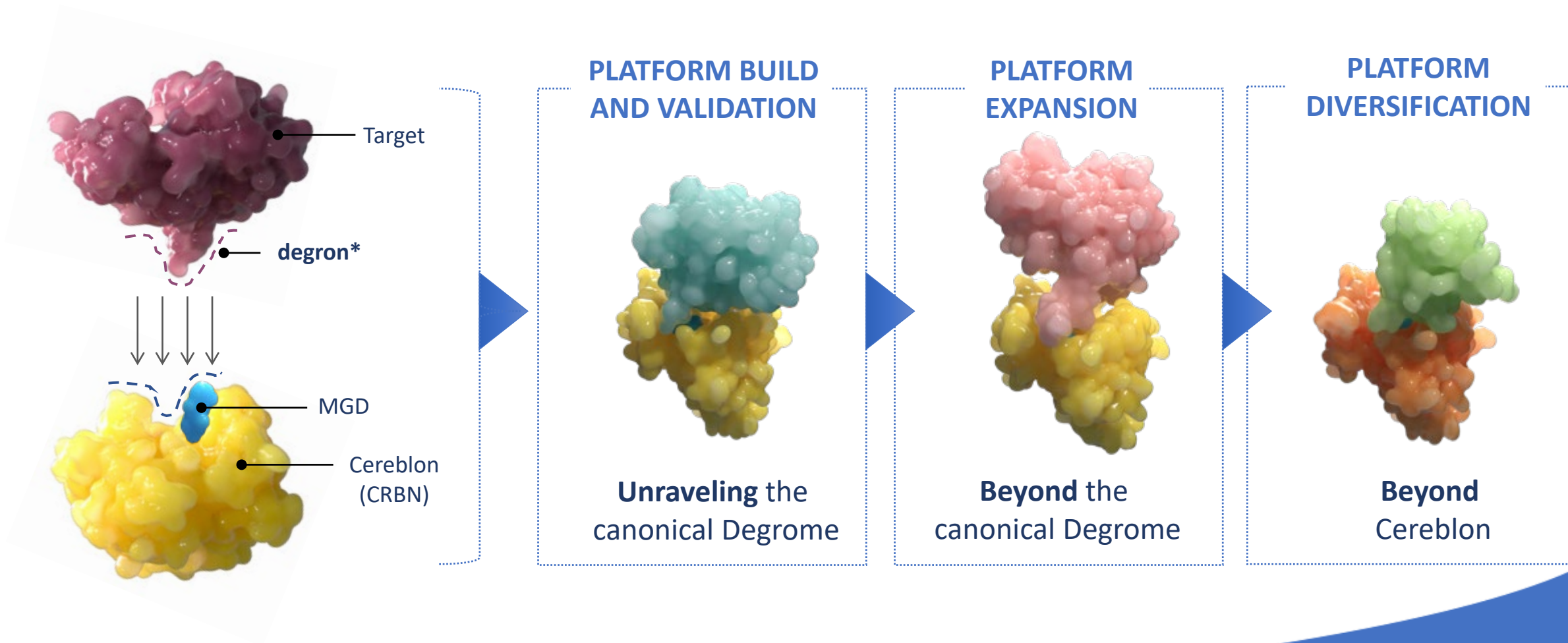
- ✓ **Undruggable** target space
- ✓ Favorable **drug-like** properties
- ✓ Clinically **validated**
- ✓ **Systematic** and **selective** reprogramming
- ✓ **Broad** therapeutic application

Systematic Chemical Reprogramming of E3 Ligases using MGDs



Cereblon (CRBN), the G-loop Degron and Beyond

A rational approach to unleash the full potential of MGDs



EXPANDING THE DEGRADABLE
PROTEOME BY RATIONAL DESIGN

* Structural feature (β -hairpin loop) allowing target recruitment to CRBN

The Next Generation of Precision Medicine-based Small Molecule Drugs

Challenges with undruggable vs druggable proteins



Traditional small molecule inhibitors



Therapeutic Antibodies



RNAi, RNA Editing



CRISPR/Gene Therapy



MGDs

Ability to access undruggable space	X	✓	✓	✓	✓
Cellular permeability	✓	X	✓	✓	✓
Oral bioavailability	✓	X	X	X	✓
Systemic distribution	✓	✓	X	X	✓
CNS Penetration	✓	X	X	X	✓
Manufacturing scalability	✓	✓	X	X	✓





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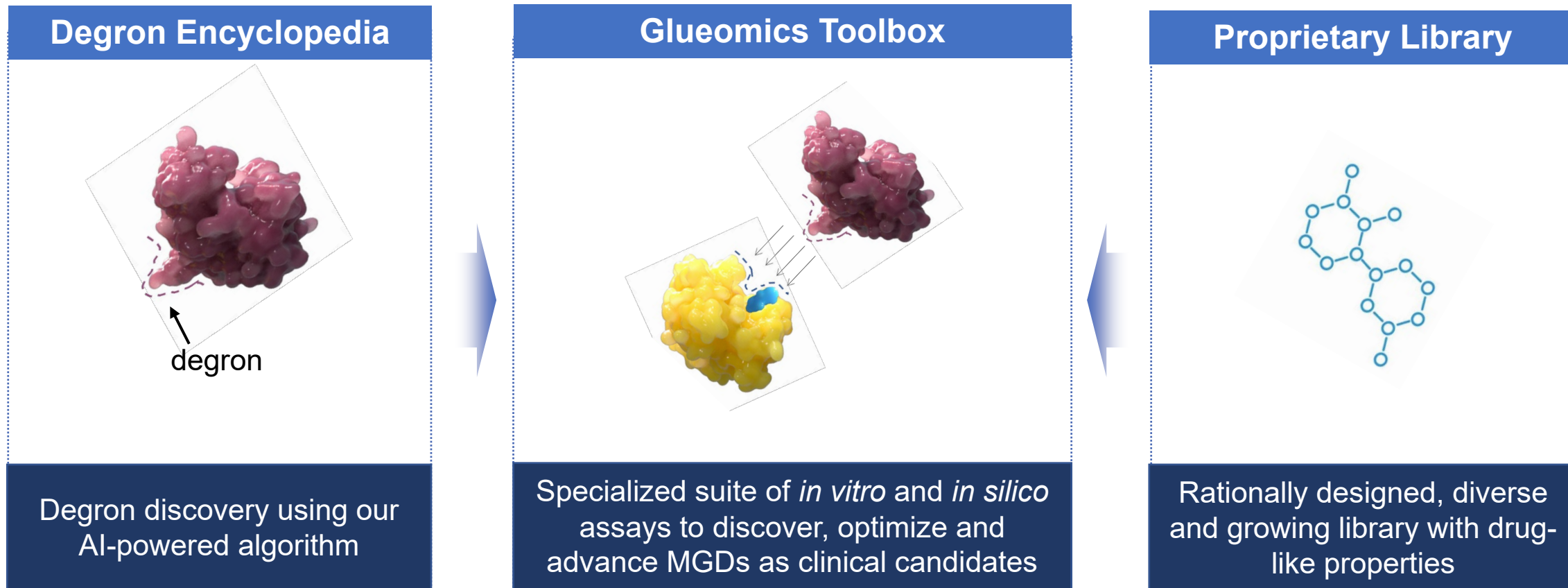
QuEEN™ Discovery Platform

Quantitative and Engineered Elimination of Neosubstrates

Degradation, not inhibition

QuEEN™ Discovery Platform: Transformational Approach to MGDs

Building a unique portfolio of precision medicines addressing high unmet medical needs



The Degron Encyclopedia

A rich, differentiated target space across protein domains and diseases

Integrated Degron Mining

Sequence

Deep Neural Net



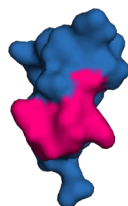
Topology

Loop scoring



Surface

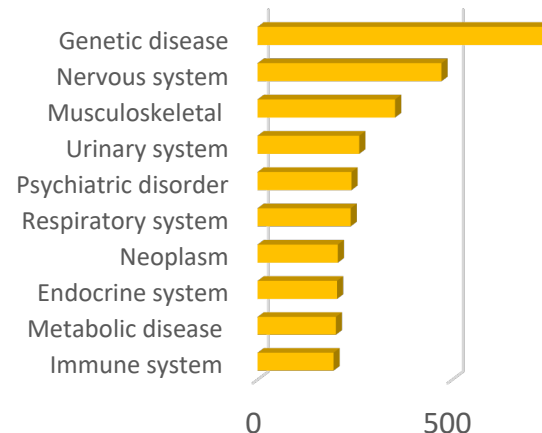
Surface geometry



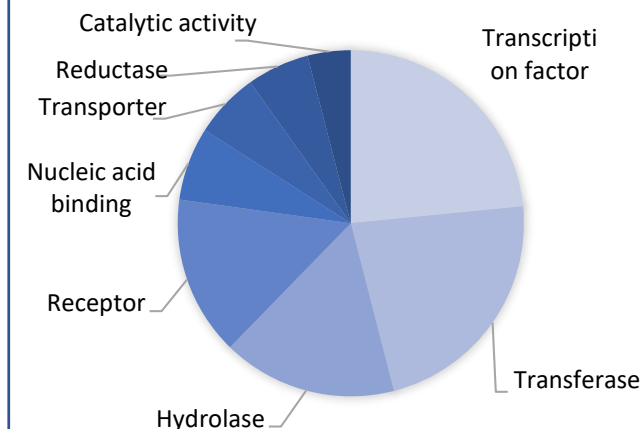
Degron Encyclopedia

>3000 predicted degron-containing proteins

Broad disease landscape



Top protein classes



**Many highly
credentialed targets**

>75% undruggable

**>85% degrons have
unique sequence**

Expanding the Target Space by Identifying More Degrons

Example of degron-containing proteins in different diseases

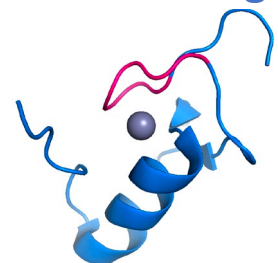
Immunology/ Inflammation

Kinase



Inflammation

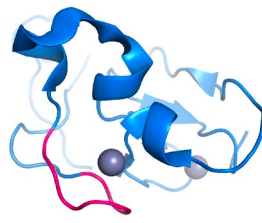
DNA binding



T-cell development

Cancer

Demethylase



Solid tumors

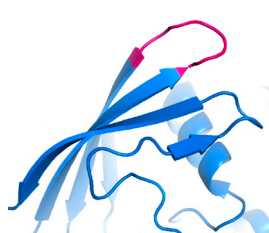
GEF



Hematological cancers

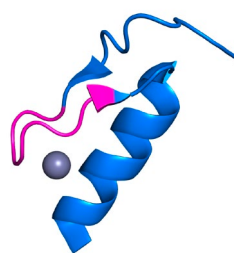
I-O

Phosphatase



T-cell exhaustion

DNA binding



Tregs

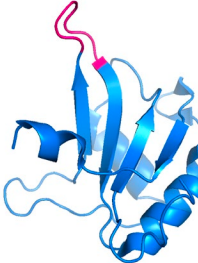
Neurology

DNA binding



ALS

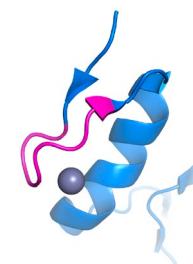
RNA binding



ALS

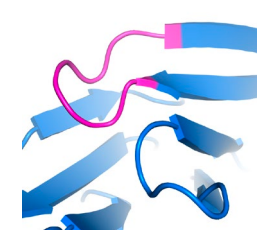
Genetic Diseases

DNA binding



Blood

WD repeat



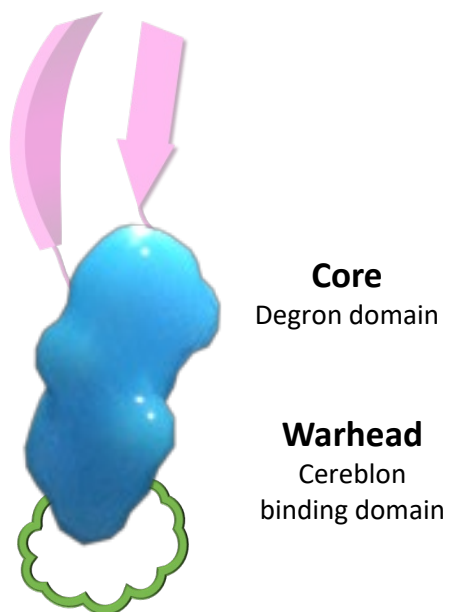
Spastic Paraplegia

>95% of degrons have a unique sequence, providing a unique handle to engage MGD chemical matter

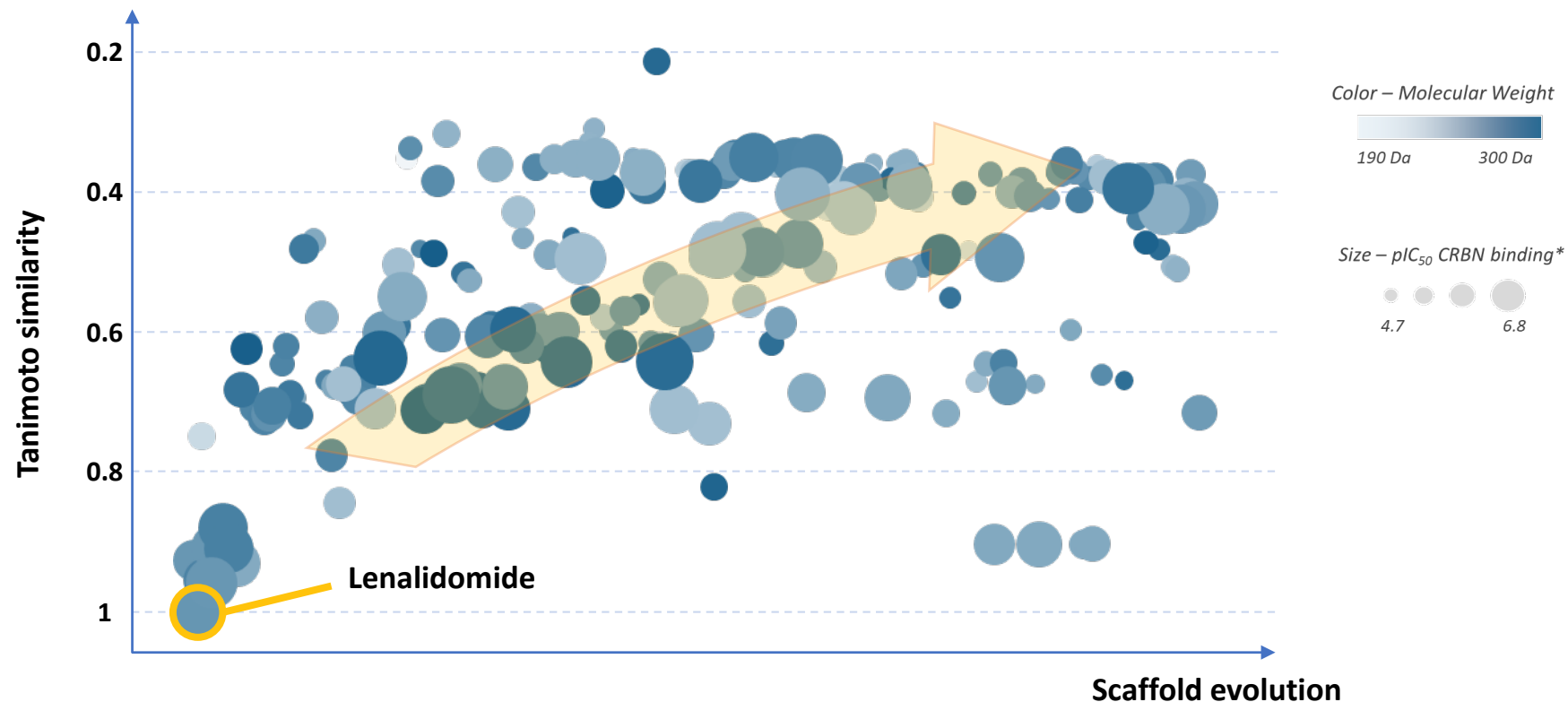
New Chemical Space: MGD Anatomy and Evolving MGD Library

Increasing novelty and structural diversity to match the target space

MGD Anatomy



Increasing the Core-Warhead Chemical Diversity



>200 unique scaffolds validated with increasing diversity, confirmed binding and structural insights

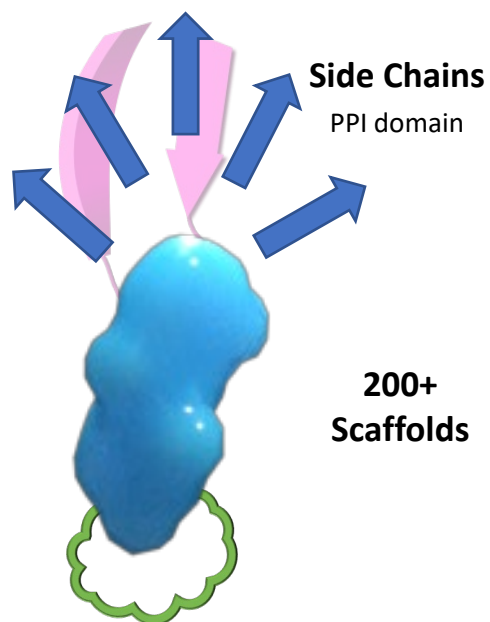


Utilizing Diverse Geometries to Selectively Engage Neosubstrates

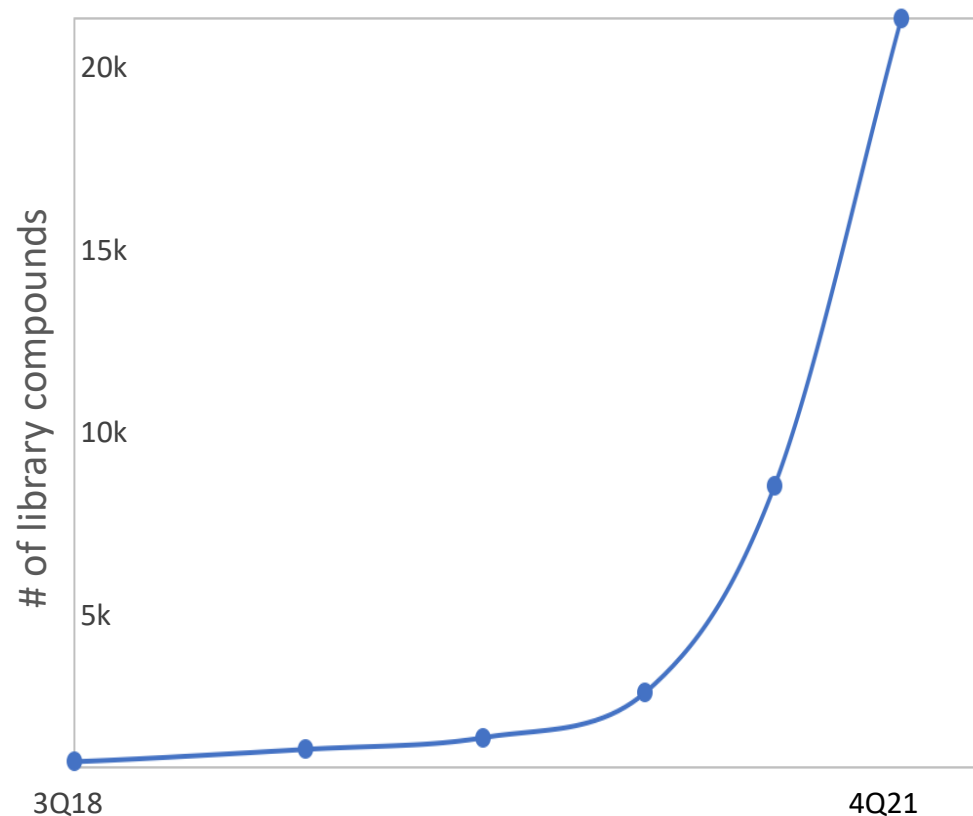
Increasing structural diversity while maintaining drug like properties

Expanding MGD

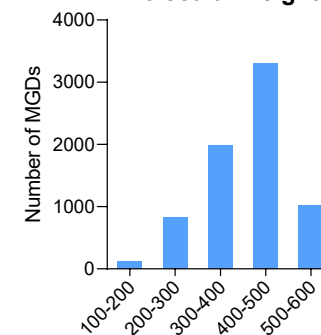
Anatomy



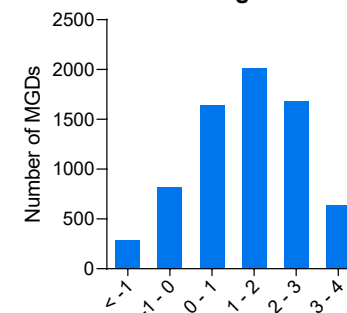
Exponential Growth and Properties



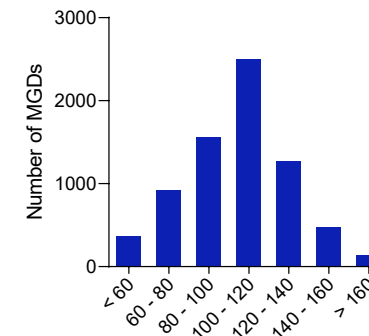
Molecular weight



clogP



Polar surface area



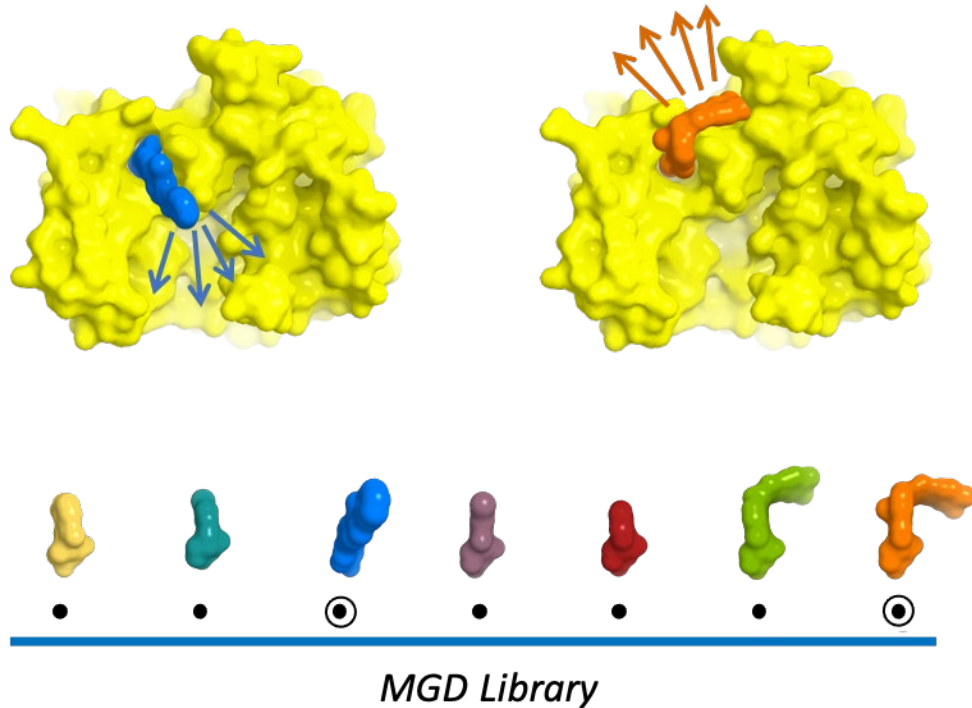
Expanding Chemical Library to >20K unique molecules in 2021



MGDs Designed to Remodel and Reprogram Cereblon Surface Interaction

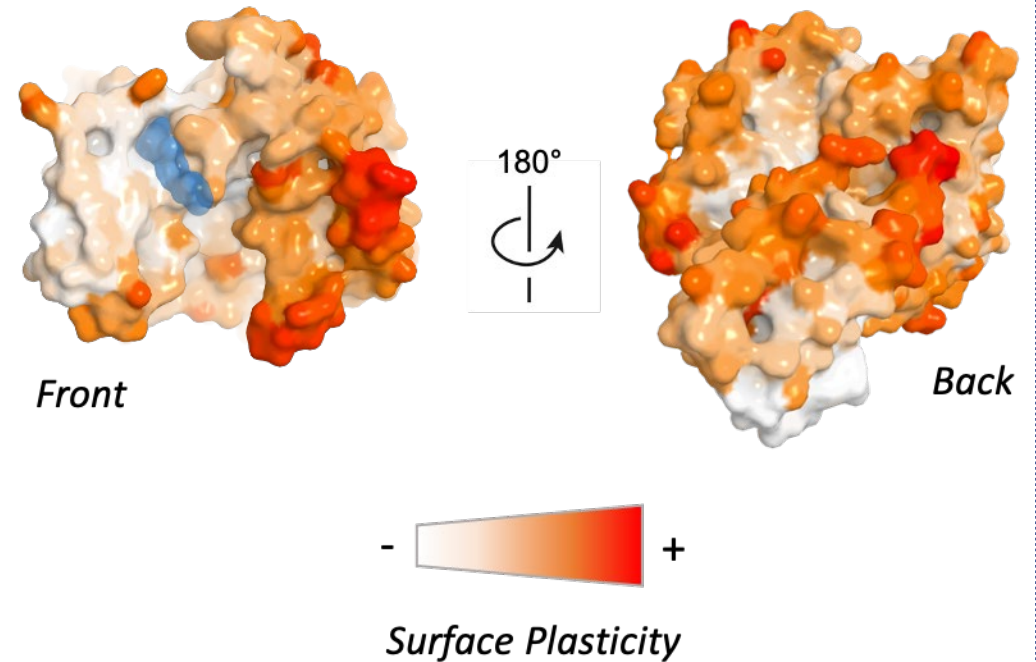
Proximal and distal changes facilitate selective binding to neo-substrates

Proximal remodeling of cereblon



✓ Creates unique interactions with degons

Distal remodeling of cereblon



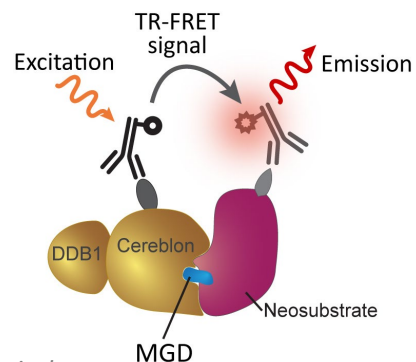
✓ Facilitates selective neosubstrates engagement



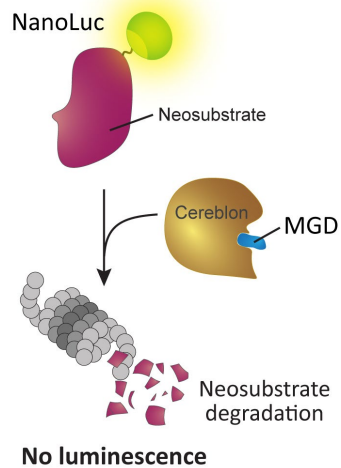
Glueomics™ Toolbox Accelerates Identification of MGDs

Multiple screening formats enable rapid identification and validation of MGDs for novel targets

in vitro screens



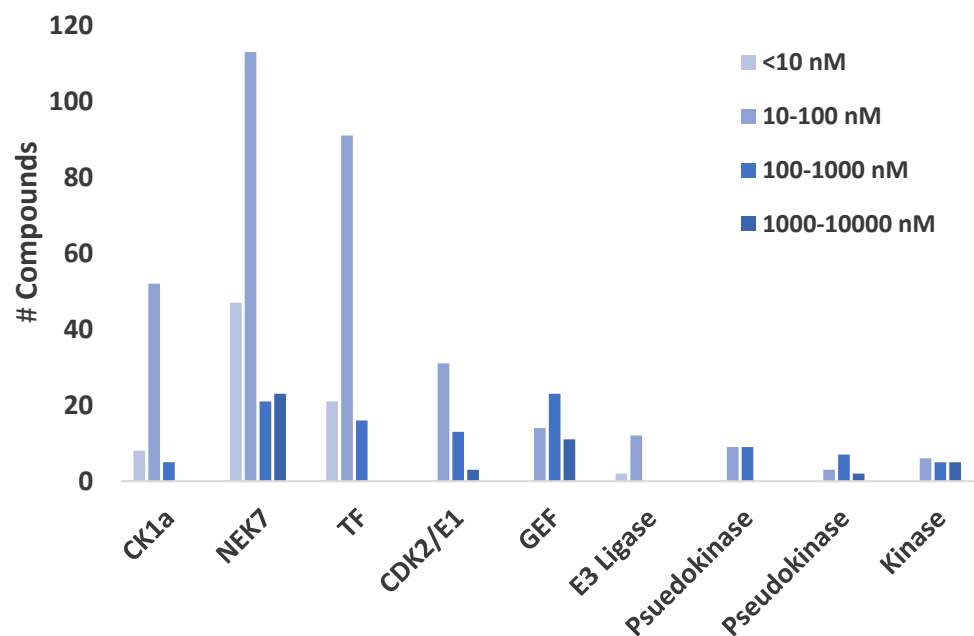
Biochemical



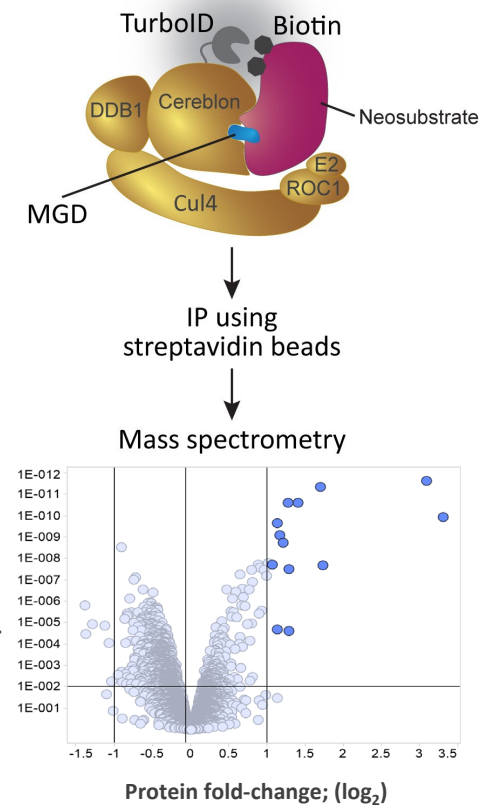
Cellular

Results

EC₅₀ values in a biochemical ternary complex HTRF assay



Chemoproteomics

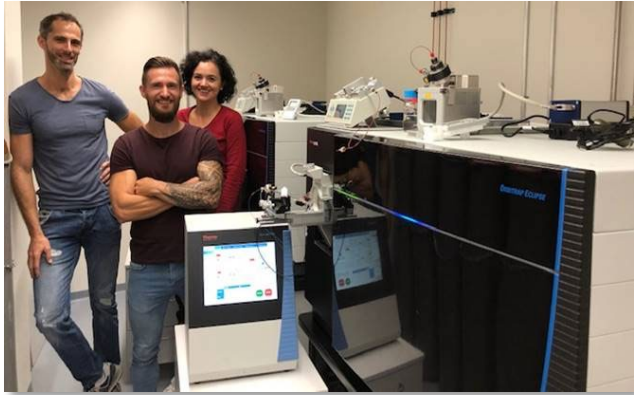


Turbo-ID

Proteomics Platform is Scaled for Success

Purpose-built assay suite for selectivity profiling and identification of novel neo-substrates

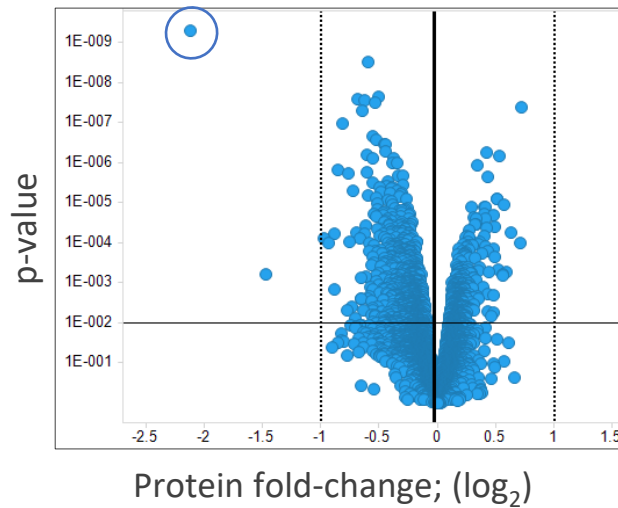
In-house Capabilities



- ✓ 3 Orbitraps
- ✓ Multiple assay formats
- ✓ Double capacity in 2021

Degradation

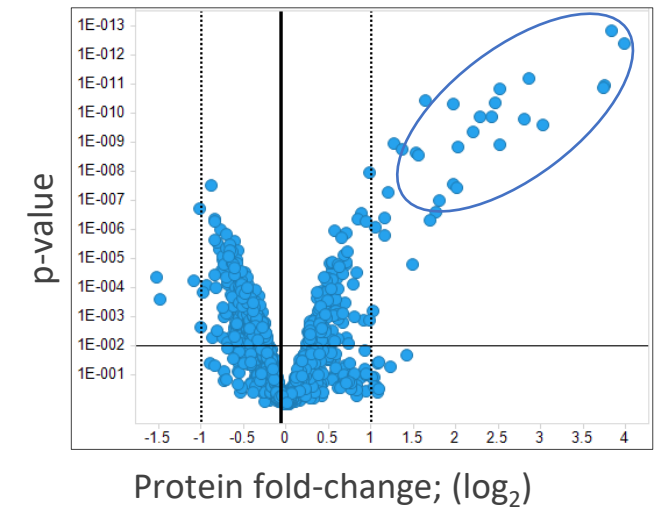
Global Protein expression - TMT Proteomics



- ✓ Degradation
- ✓ Selectivity

Proximity

Turbo ID - TMT Proteomics



- ✓ Complex formation
- ✓ Neosubstrate identification

Multiple screening formats enable rapid identification and validation of MGDs for novel degron targets

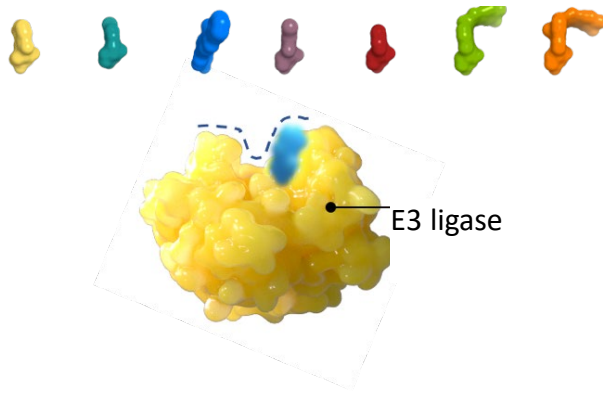


Rhapsody, QuEEN's *in silico* MGD Engine

A suite of proprietary AI-powered algorithms to design, discover and develop MGDs

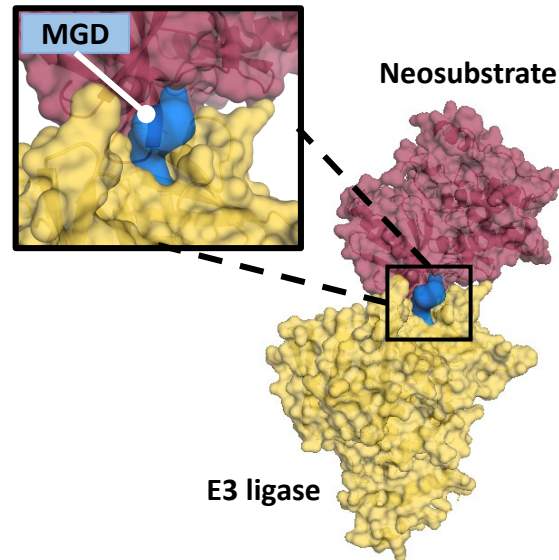
in silico library generation

Creation and e3 ligase docking of novel MGDs, expanding our library to engage more targets



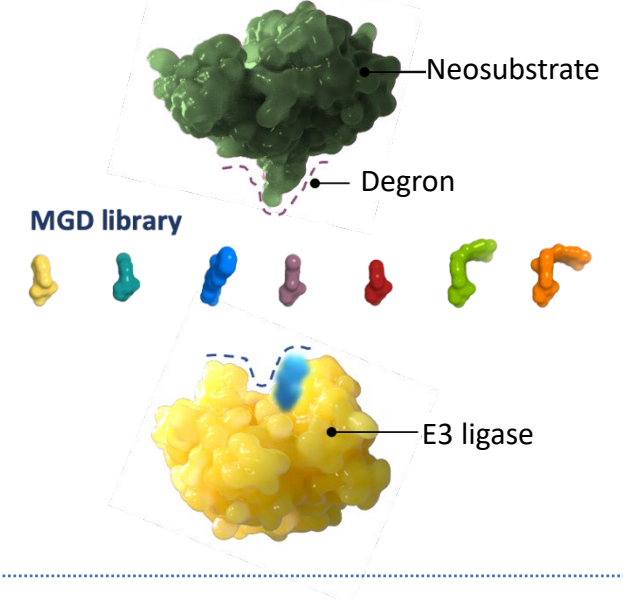
in silico ternary complex models

Ternary complex models enabling MRT scientists to engineer and optimize selective MGDs



in silico MGD screening

Computational screening identifying and prioritizing hits inducing binding and selective degradation



Powered by MTR highly customized AWS infrastructure





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Monte Rosa's Pipeline of MGDs

Leveraging a Leading Drug Discovery Platform

Purpose-built to discover and develop a wide landscape of therapeutically-relevant MGDs

Towards a High-Value Proprietary Pipeline

Targets

Undruggable and inadequately drugged degran-containing proteins

High level of target validation, preclinically and clinically



Clinical Path

Programs with biomarker-based patient selection strategy and clear path to the clinic

Opportunity for rapid clinical PoC for MOA and efficacy



Patient Benefit

Address high unmet needs

Potential to address a wide range of therapeutically-relevant proteins in oncology and beyond

Create synergies within therapeutic areas



Monte Rosa Pipeline

Rapidly advancing wholly owned MGD programs

Target / Program	Indication(s)	Discovery	IND-Enabling	Clinical	Next Anticipated Milestones	Ownership
GSPT1	NSCLC, SCLC, Heme Malignancies				IND filing mid-2022	
NEK7	Inflammatory Diseases				Advance at least one program in addition to NEK7 into Lead Optimization in 2021	
CDK2	Ovarian Cancer, Breast Cancer					
VAV1	T and B Cell Malignancies, Autoimmune Disease					
BCL11A	SCD, β -Thalassemia					
Undisclosed	Multiple					

● Oncology
 ● Autoinflammation
 ● Oncology / immunology
 ● Genetic diseases



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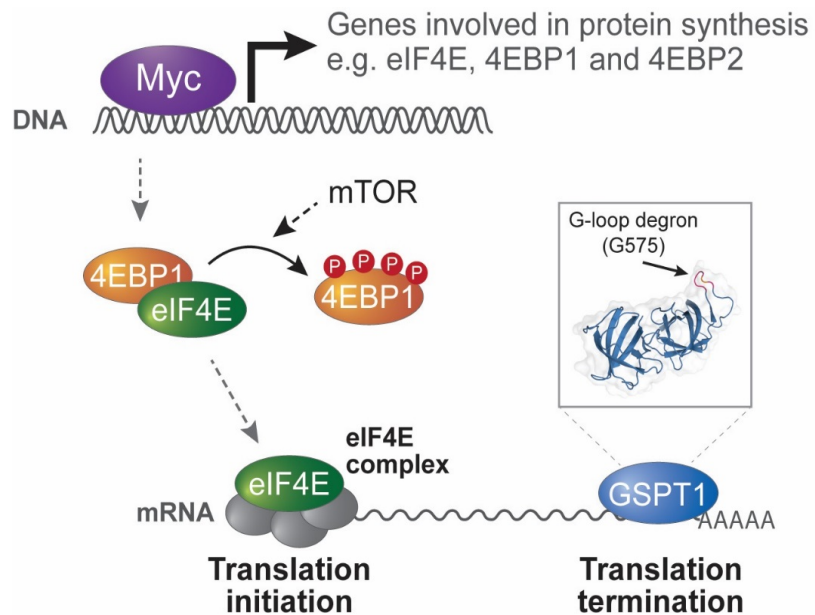
Identification and Development of GSPT1 MGDs

From identifying that GSPT1 is a key regulator and vulnerability of Myc-induced translational addiction to a biomarker-driven program in Myc-addicted tumors

Targeting Myc-Driven Tumors and Their Addiction to Protein Translation

GSPT1 is a key regulator and vulnerability of Myc-induced translational addiction

Myc hijacks the cellular protein translation machinery creating a vulnerability to GSPT1



Target profile

To sustain growth, Myc-driven tumors are **addicted to protein translation**

- Myc regulates the expression of key genes related to protein translation, including the master regulator 4EBP1 and eIF4E

This addiction to protein translation creates a possible **dependency** to the termination translation factor GSPT1, a degran-containing protein

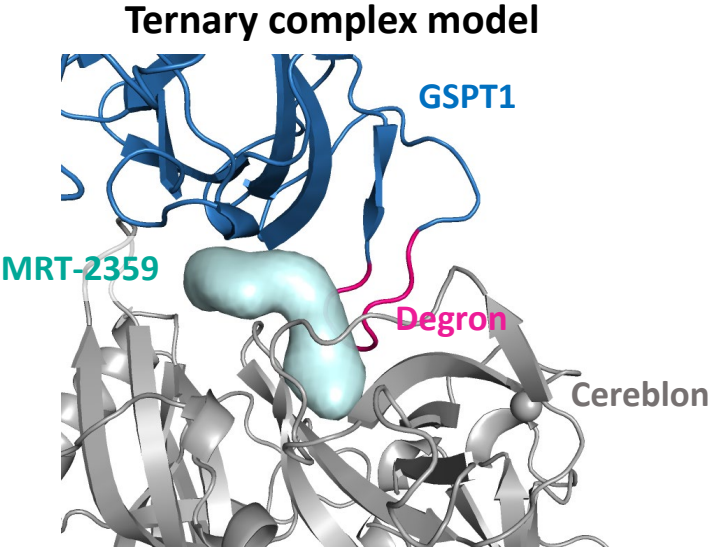
Hypothesis - GSPT1 MGDs exploit this **vulnerability** by:

- Disrupting protein translation output
- Reducing Myc-oncogenic signaling



MRT-2359 is a Potent and Selective GSPT1-directed MGD

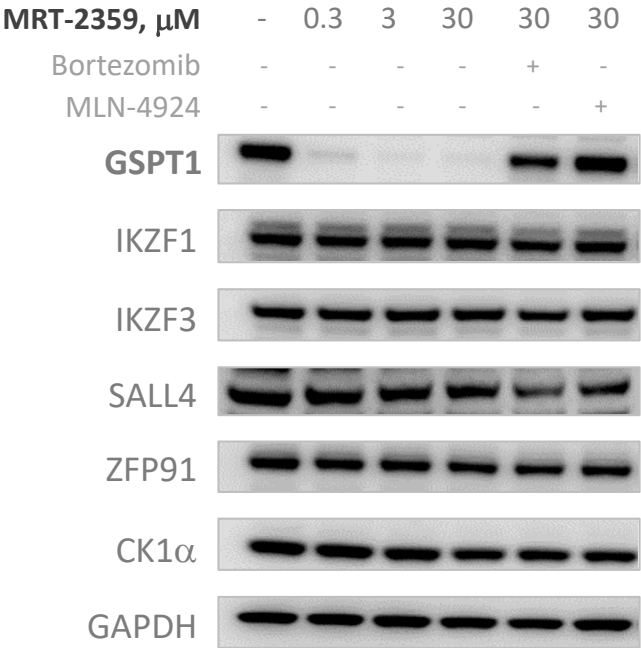
MRT-2359 is a potent inducer of GSPT1-cereblon proximity



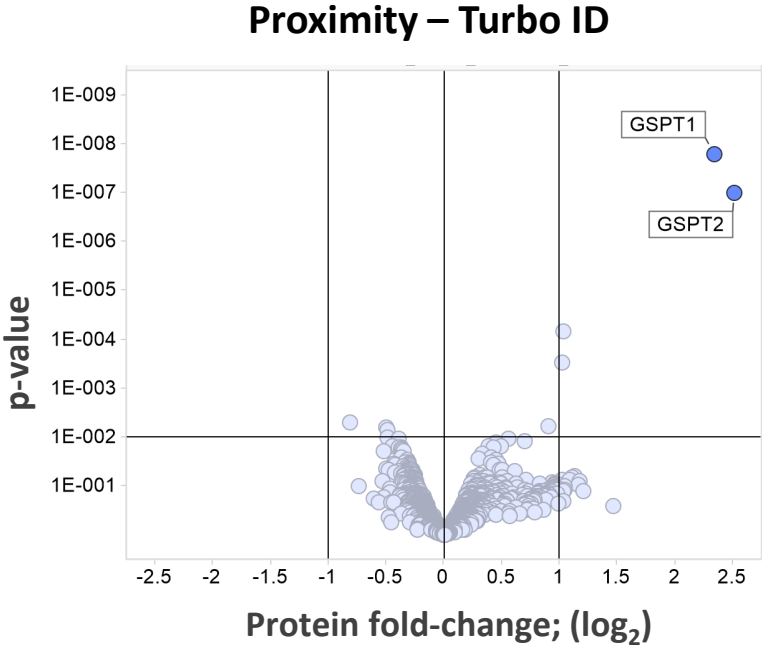
in vitro data

CRBN binding, K_i	113 nM
Ternary complex, EC_{50}	< 7 nM
Degradation, DC_{50}	80 nM

MRT-2359 is a selective GSPT1-directed MGD



6hr post treatment in MM1S and Kelly (SALL4)

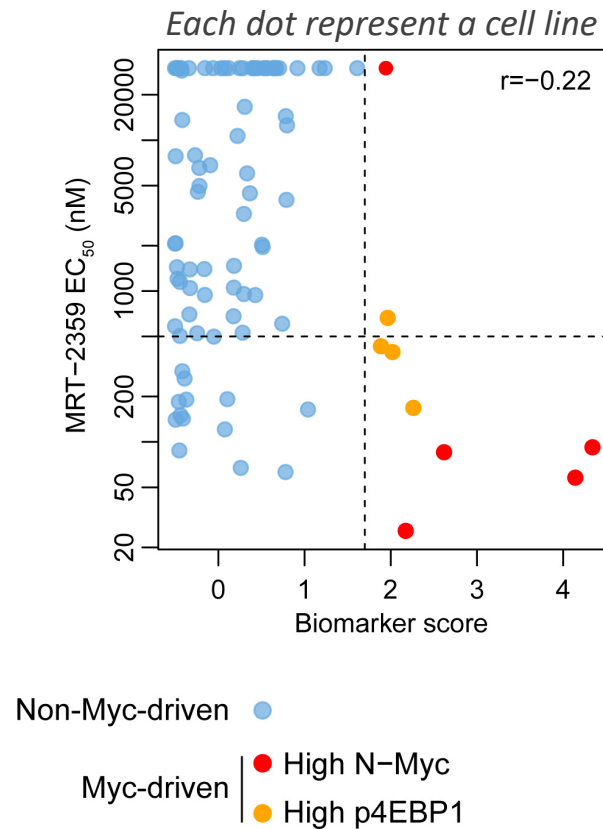


1hr post treatment

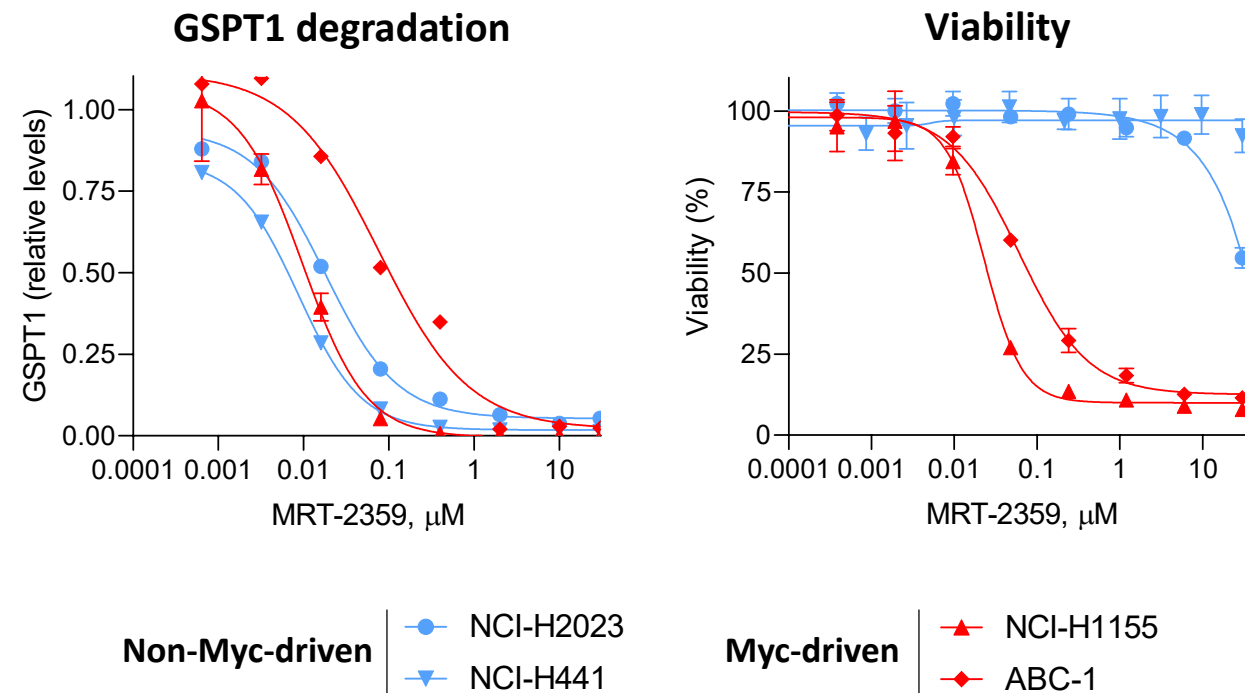


Myc-Driven NSCLC lines are Highly Sensitive to MRT-2359

Myc-driven NSCLC cell lines are sensitive to MRT-2359



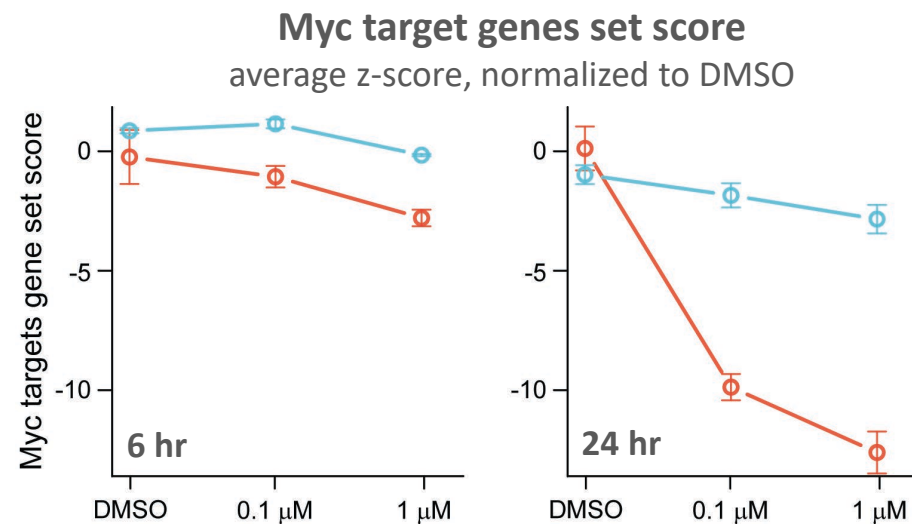
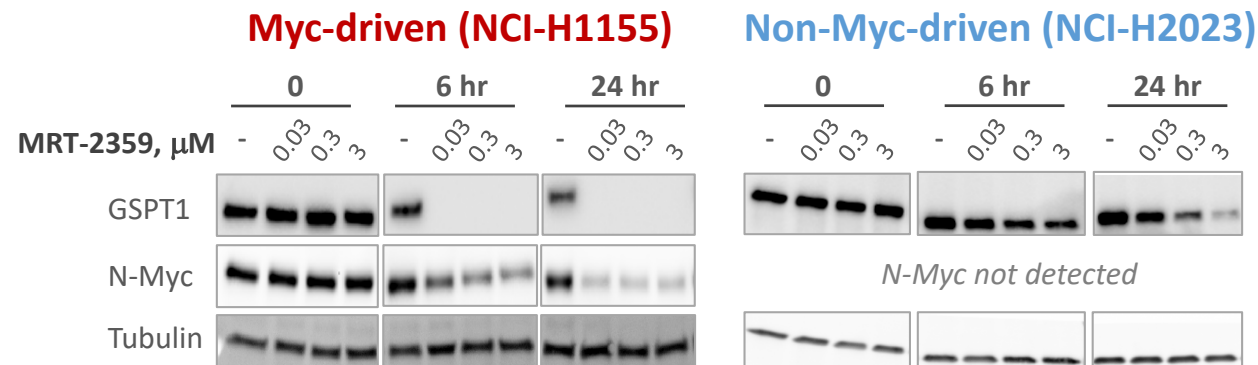
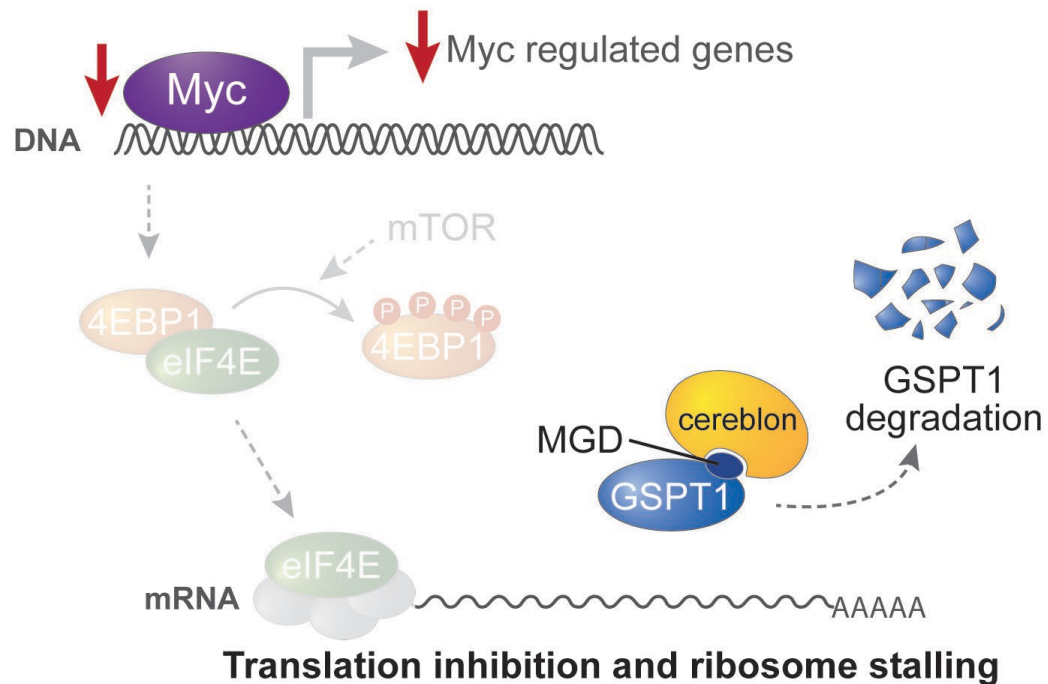
MRT-2359 induces GSPT1 degradation in all cell models, but selective killing in high N-Myc lines only



GSPT1 western blot at 6 hr (N-Myc high) and 24 hr (low). 72 hr viability assay (CTG)

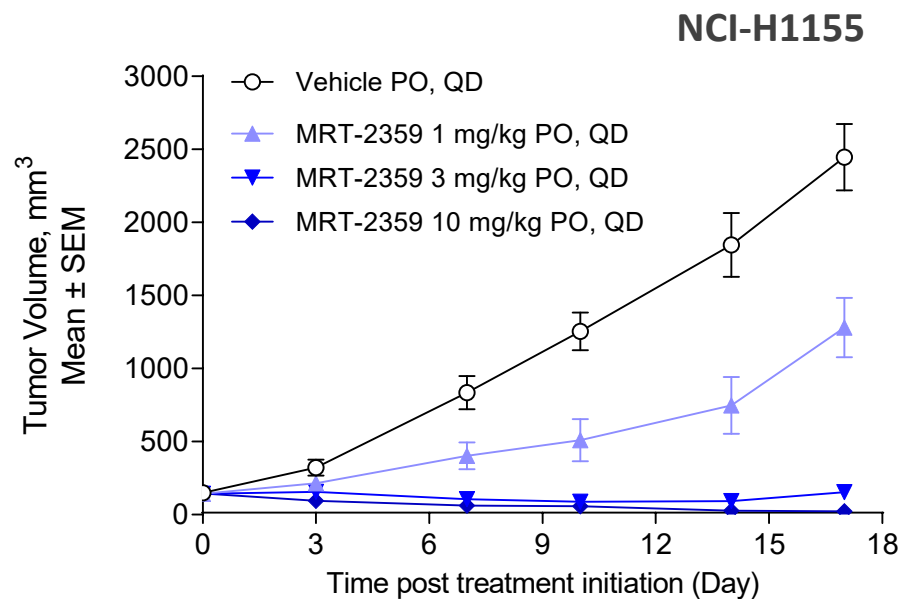
MRT-2359 Only Effects N-Myc Pathway in Myc-driven Cells

GSPT1-directed MGD degradation affect translation,
a critical vulnerability of Myc-driven cells



Oral dosing of MRT-2359 Induces Regressions in Myc-driven Xenograft Model

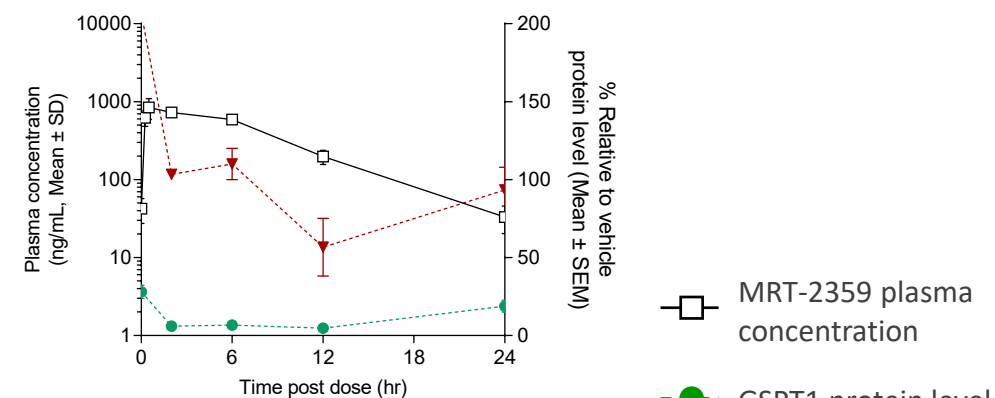
Oral dosing of MRT-2359 shows strong activity in Myc-driven Xenograft NSCLC model



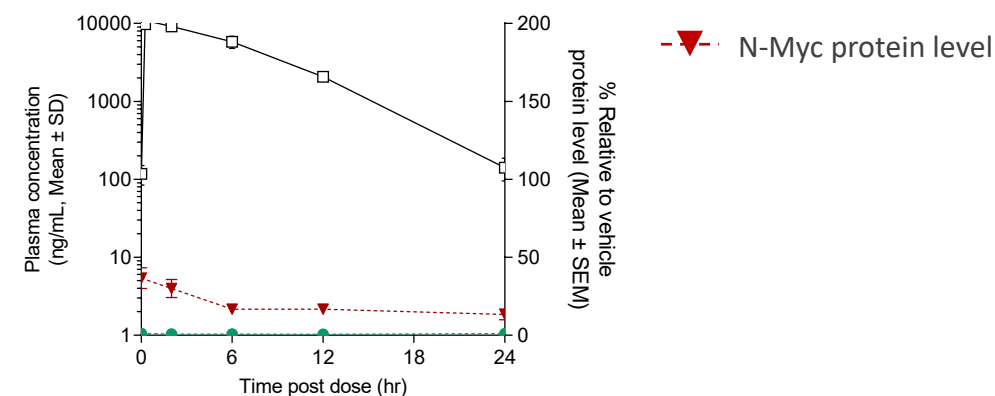
Dose- and time-dependent degradation of GSPT1 is associated with N-Myc downregulation

Day 5

1 mg/kg



10 mg/kg



Targeting Myc-driven Tumors with GSPT1-directed MGDs

Potential indications and patient stratification hypotheses

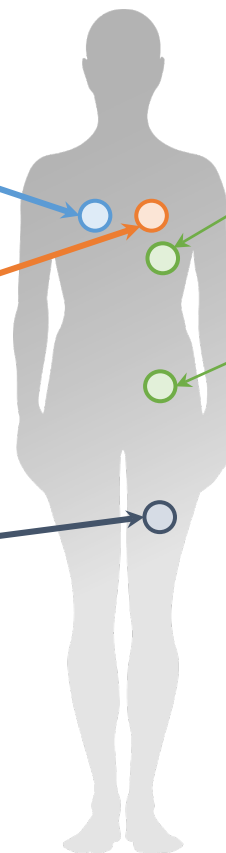
Indications considered for Phase I/II trial

Small cell lung cancer – 66K patients
50%

Non-small cell lung cancer – 352K patients (LUAD + SCC)
7 - 10%

Multiple myeloma – 61K patients
36%

Lymphomas – 8K patients
30 - 100%



Additional possible indications

Triple-neg breast cancer – 68K patients
30%

Ovarian cancer – 63K patients
64%

Tumors with neuroendocrine features
Neuroblastoma
Retinoblastoma
Medulloblastoma
Neuroendocrine lung cancer, Lu-NET
Neuroendocrine prostate cancer, NEPC

■ L-Myc overexpression/amplification ■ N-Myc overexpression/amplification ■ c-Myc amplification ■ c-Myc translocation/rearrangement

Patient diagnosed incidence #s, major markets (US, EU and JP): Decision Resources Group (DRG)

Patient stratification %s: Schaub - Cell Systems 2018; Massó-Vallés – Exp. Op. therapeutic targets 2020; Sesques and Johnson - Blood 2016



Targeting Myc-addicted Tumors with MRT-2359

IND-enabling activities have been initiated

- Rationally designed **potent and selective** GSPT1-directed MGD
- **Orally bioavailable** development candidate
- Favorable **drug-like properties** and ADMET profile
- Robust **antitumor activity *in vivo*** in **multiple tumor models**
- **IND-enabling** activities initiated
- **Patient stratification hypothesis** developed and being validated

**IND filing
in mid-2022**







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Discovery Stage Programs

Discovery Stage Pipeline

Advancing multiple programs into Lead Optimization

Target / Program	Indication(s)	Discovery	Lead Optimization
NEK7	Inflammatory Diseases		
CDK2	Ovarian Cancer, Breast Cancer		
VAV1	T and B Cell Malignancies, Autoimmune Disease		
BCL11A	SCD, β -Thalassemia		
Undisclosed	Multiple		

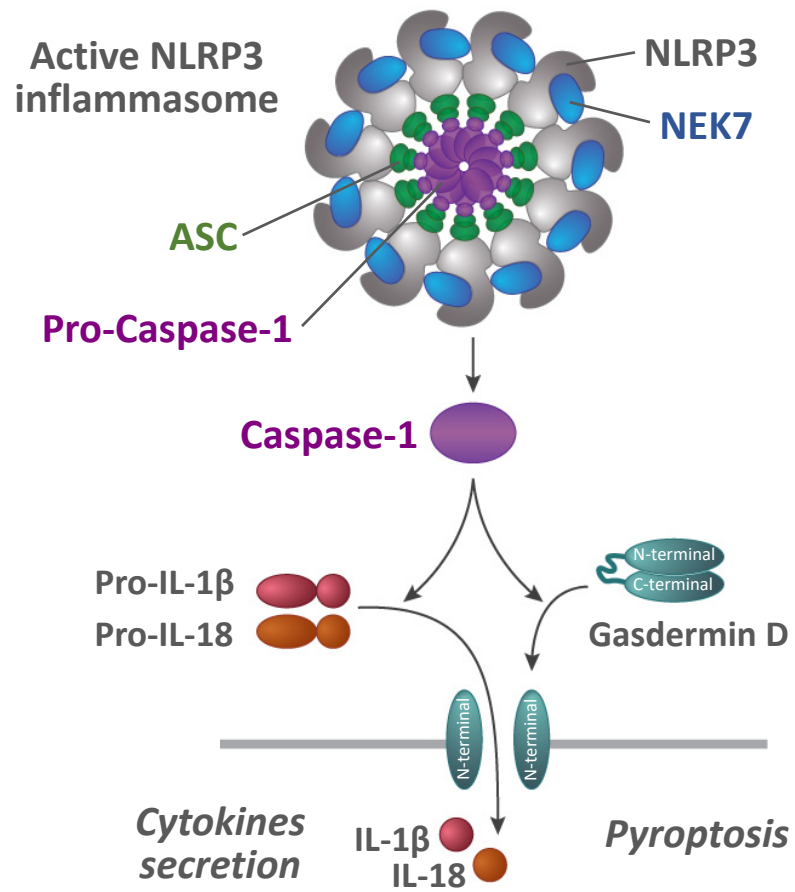
 Oncology  Autoinflammation  Oncology / immunology  Genetic diseases



NEK7 (NIMA-Related Kinase 7) as a Target for Inflammatory Disease

An opportunity to expand into the non-oncology disease space

NEK7 is an essential regulator of the inflammasome



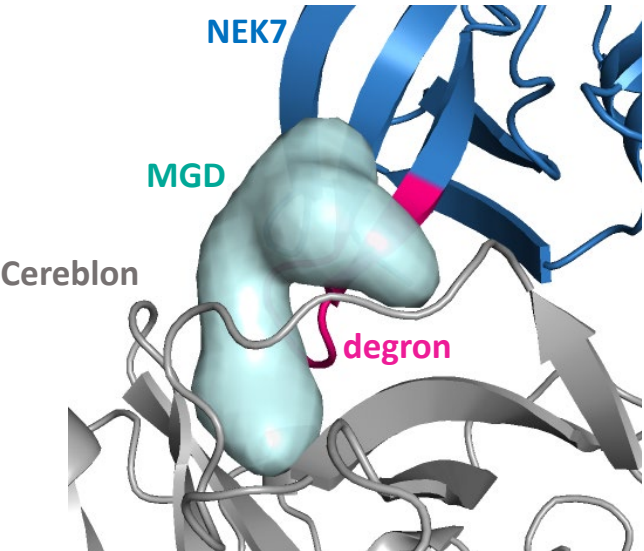
Target profile

- ✓ Therapeutic hypothesis: Diseases with over-activated or mutated NLRP3 inflammasome
 - NEK7 licenses NLRP3 assembly in a kinase independent manner
 - NEK7-deficient macrophages are severely impaired in IL-1 β and IL-18 secretion
- ✓ Clinical opportunity: First-in-class NEK7 degraders for
 - Over-activated NLRP3 inflammasome: metabolic pathologies, cardiovascular diseases, inflammatory and neurologic disorders (e.g., Gout 17.1M patients, NASH 2.3M patients, acute HF 8.2M patients)
 - NLRP3 activating mutations: Cryopyrin-associated periodic syndromes (1-2 patients per million in EU and US)
- ✓ Differentiation: Novel target within the inflammasome and mechanism of action

Rationally Designed NEK7-Directed MGDs are Selective Degraders

Demonstration of selective NEK7 degradation with MGD treated cells

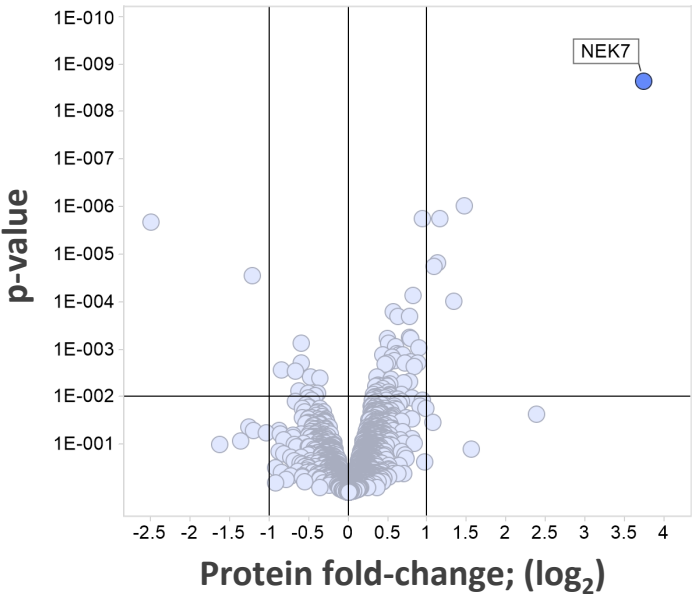
Rhapsody™ model enables rapid chemistry optimization



in vitro data

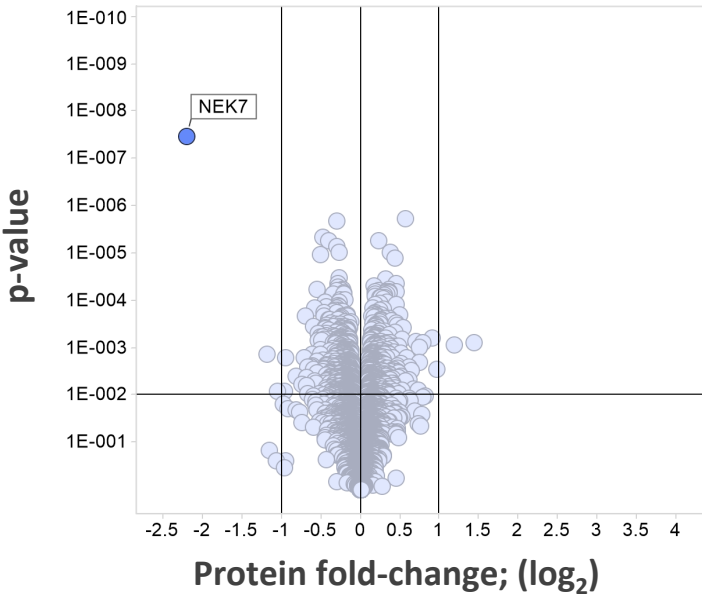
CRBN binding, K_i	48 nM
Ternary complex, EC_{50}	20 nM
Degradation, DC_{50}	10 nM

Rationally designed MGDs promote selective CRBN proximity



Turbo-ID – 6hr post treatment

NEK7-directed MGD promotes selective degradation of NEK7

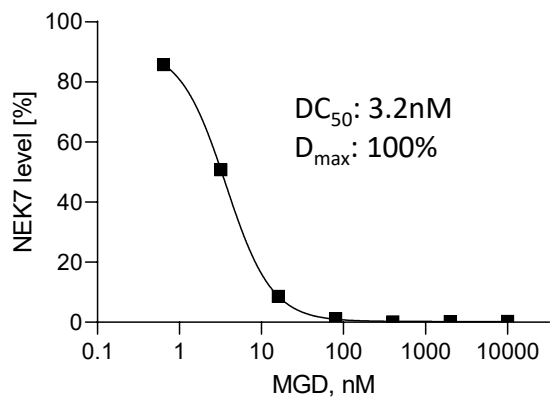


TMT-Proteomics – 24hr post treatment

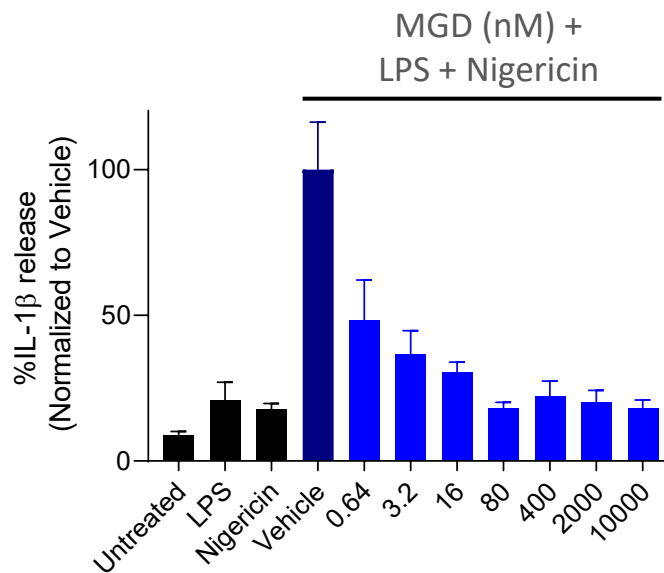


Inhibition of NLRP3 Pathway in Human Monocyte-derived Macrophages

NEK7-directed MGD promotes NEK7 degradation and pathway engagement in hMDMs



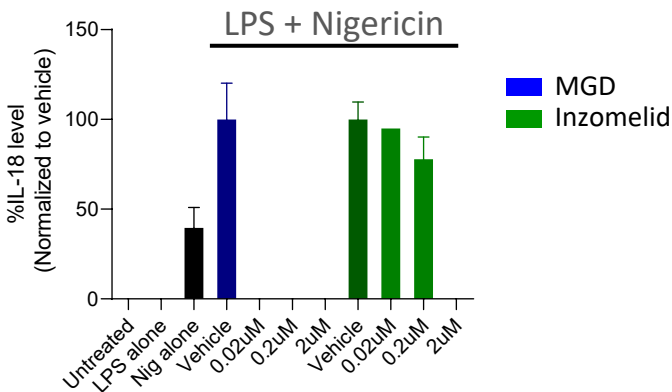
Western blot – 24 hr



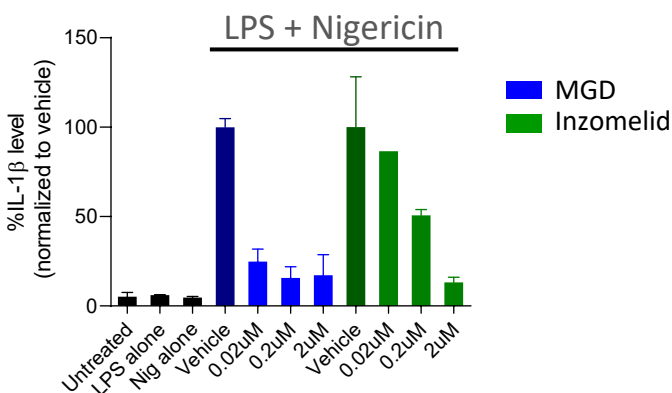
Treatment (20 hr) of primed hMDMs

NEK7-directed MGD compared to NLRP3 inhibitor

IL-18



IL-1β



Treatment (20 hr) of primed hMDMs

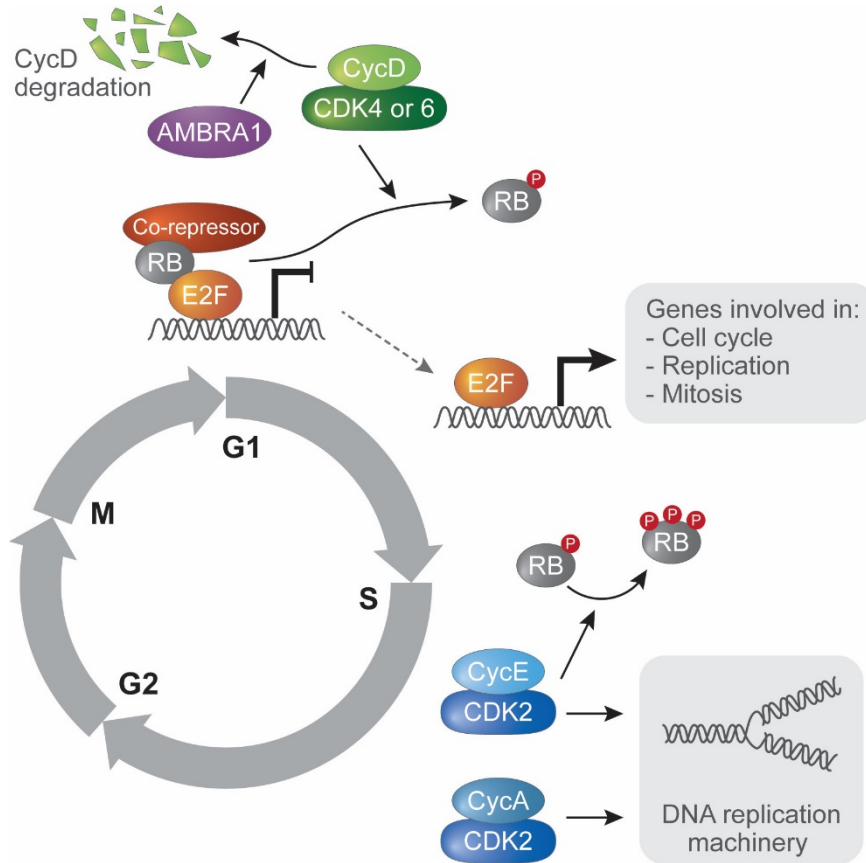
CASP1 and LDH showed similar profile



CDK2 as a Target for Solid Tumors

Unlocking the potential to achieve target selectivity through recognition of the degron

CDK2 is one of the key regulators of the cell cycle



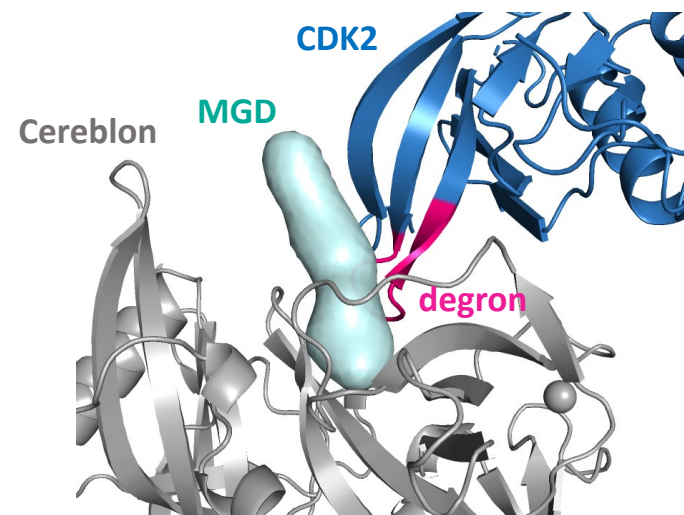
Target profile

- ✓ **Therapeutic hypothesis:** Tumors with CDK2 pathway activation by:
 - CyclinE1/E2 amplification or loss of AMBRA1
 - Loss of RB
- ✓ **Clinical Opportunity:** CDK2 driven cancers: ER positive breast cancer (444K patients), ovarian cancer (63K patients), and endometrial cancer (118K patients), as well as breast cancer post treatment with CDK4/6 inhibitors
- ✓ **Differentiation:** Opportunity to selectively target CDK2 over other CDKs

Rationally Designed CDK2-Directed MGDs are Selective Degraders

Demonstration of selective CDK2 degradation with MGD treated cells

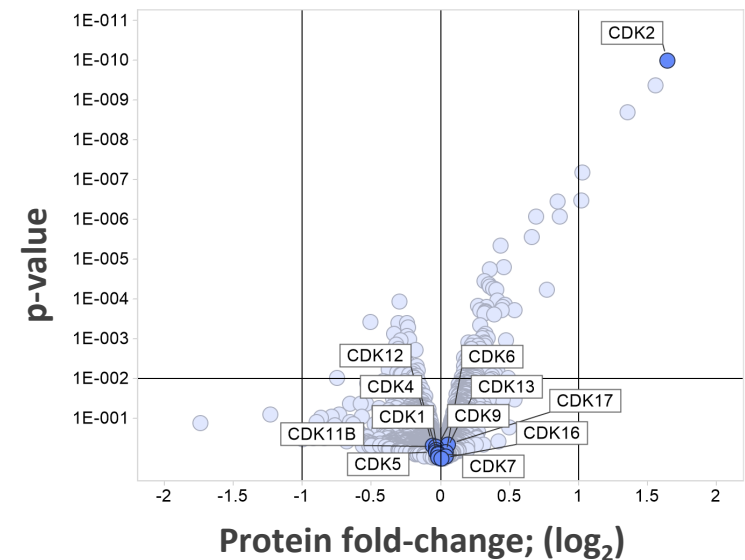
Rhapsody™ model enables rapid chemistry optimization



in vitro data

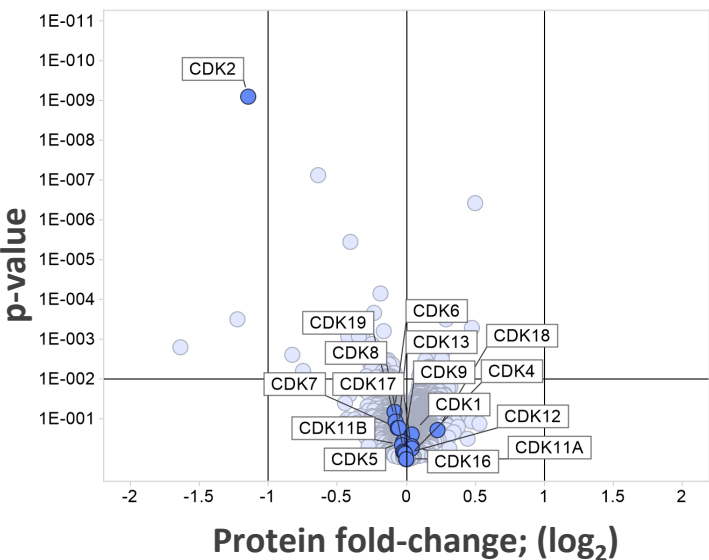
CRBN binding, K_i	163 nM
Ternary complex, EC_{50}	9 nM

Rationally designed MGDs promote more selective CRBN proximity



Turbo-ID – 6hr post treatment

Rationally designed MGDs selectively degrade CDK2



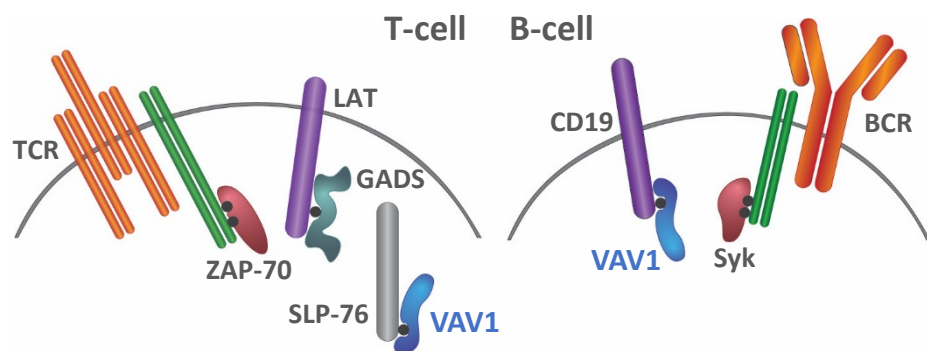
TMT-Proteomics – 24hr post treatment



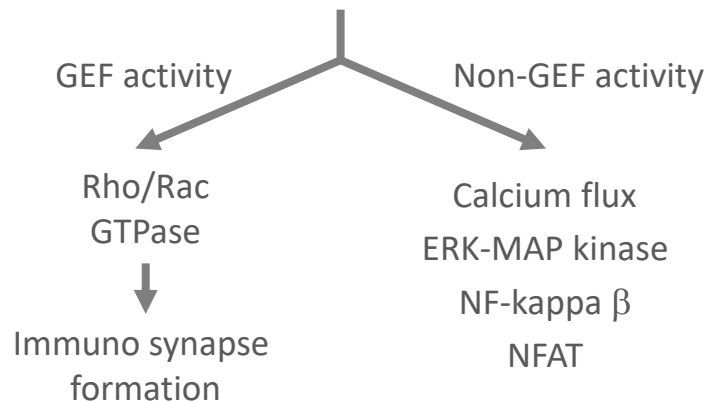
VAV1 as a Target for Cancer and Autoimmune Disease

Potential to address an undruggable target

VAV1 plays a key role in T-cell and B-cell development and activation



Activated VAV1

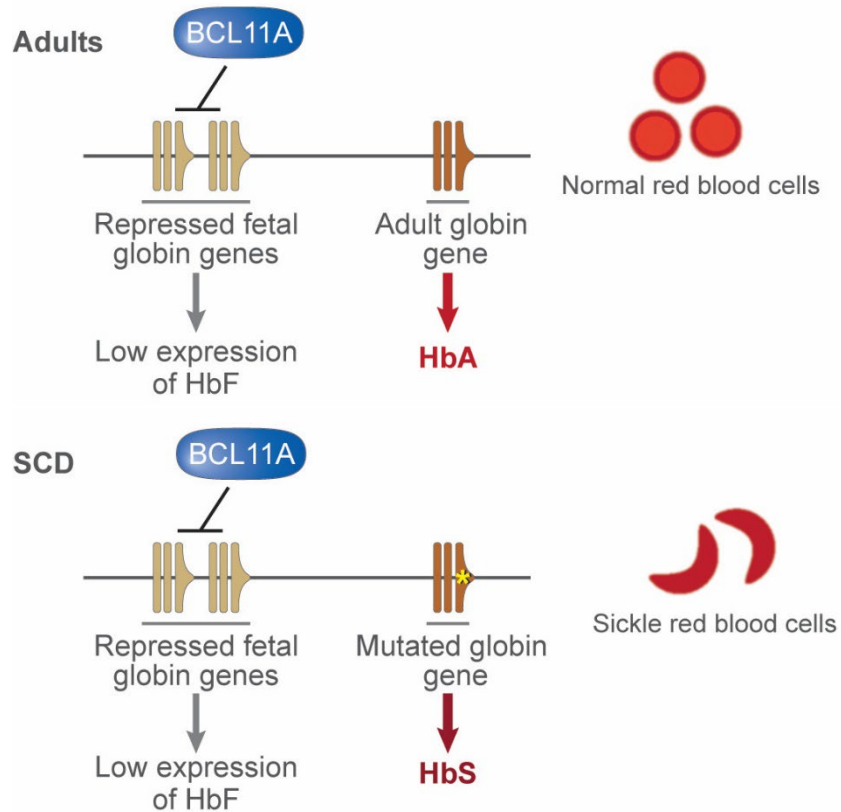


Target profile

- ✓ Therapeutic hypothesis: Diseases with VAV1 activating mutations or autoimmune disorders
 - VAV1 activation mutations identified in leukemia, lymphoma and lung cancer
 - VAV1 KO mice improved multiple autoimmune models
- ✓ Clinical Opportunity: First-in-class VAV1 degraders for
 - T-cell and B-cell lymphomas: DLBCL (66K patients) and Burkitt lymphoma
 - Autoimmune disorders including MS (1.2M patients), myasthenia gravis (36K - 60K patients in US), and acute graft-versus-host disease (10K patients)
- ✓ Differentiation: VAV1 is currently considered undruggable

BCL11A as a Target for Hemoglobinopathies (SCD and β -Thalassemia)

BCL11A is the zinc finger transcription repressor of the fetal globin genes

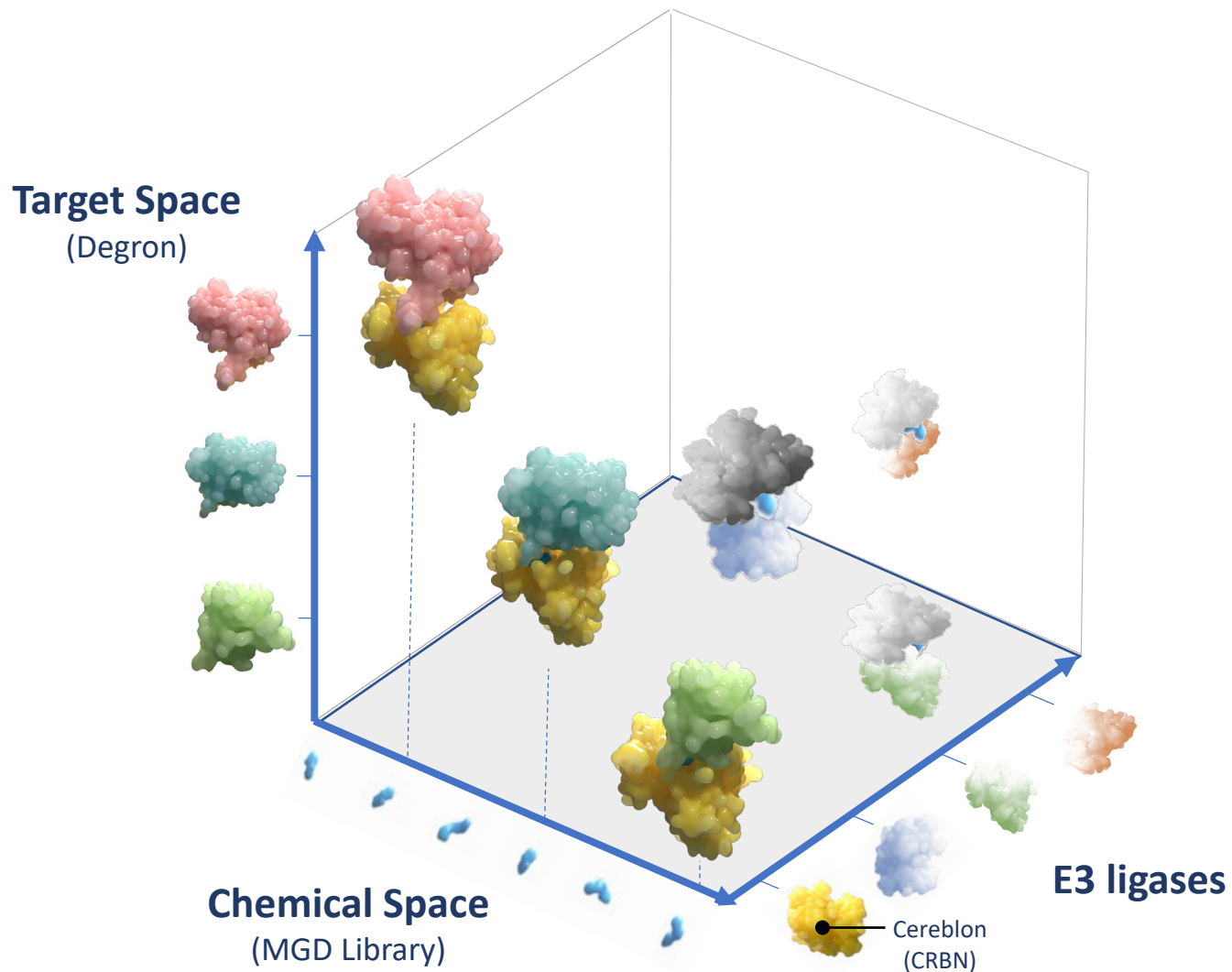


Target profile

- ✓ Therapeutic hypothesis: Reactivate expression of fetal hemoglobin (HbF) to compensate for mutated adult globin
- ✓ Clinical Opportunity: First-in-class BCL11A degraders for
 - Sickle cell disease (SCD)
 - 155,000 patients (US and EU)
 - >6M patients (ROW)
 - β -thalassemia
 - 17,000 patients (US and EU)
- ✓ Differentiation: BCL11A is currently considered undruggable

Unlocking the Full Potential of Protein Degradation with MGDs

Quantitative and engineered elimination of proteins across a broad spectrum of diseases



- Oncology
- Immunology
- Inflammation
- Metabolic disorders
- Neurodegeneration
- Genetic diseases



Monte Rosa
THERAPEUTICS

Thank You
