



**Weill Cornell Medicine**

# Innovation at Weill Cornell Medicine

Overview and Licensing Opportunities

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KDDF C&D Tech Fair  
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# Cornell University: Founded 1865 in Ithaca, New York

*“I would found an institution where any person can find instruction in any study”*



- Federal Land Grant Institution of New York State
- Private Endowed University
- Member of the Ivy League/Ancient Eight
- **Ranked 17<sup>th</sup> in National Universities** by US News and World Reports (2022-2023)
- 16 Colleges and Schools
  - **Weill Cornell Medicine** is the medical college of Cornell University and is based in New York City



**Weill Cornell Medicine**

# Cornell University Research Enterprise

*\$1.18 B in annual research expenditure*

(FY22)

~51%

~49%



Cornell University



**Weill Cornell Medicine**



**CORNELL  
TECH**



**Weill Cornell  
Medicine-Qatar**



Ithaca



Geneva, NY



Cornell Tech  
NYC



Weill Cornell Medicine  
NYC



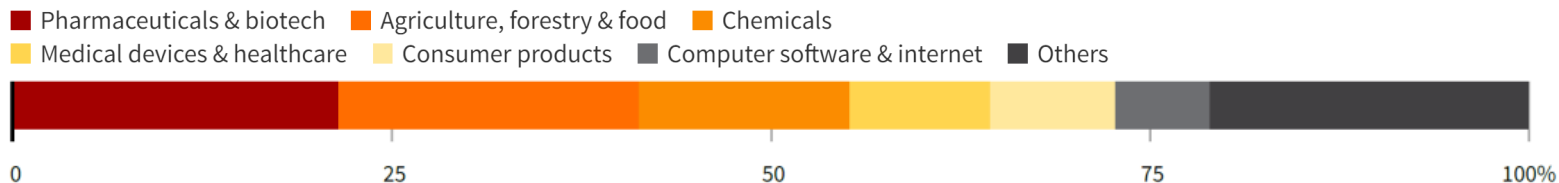
Weill Cornell  
Medicine Qatar



**Weill Cornell Medicine**

# Cornell University was ranked 9<sup>th</sup> most innovative university in the world in 2019

## 505 Total Patent Families Filed between 2012-2017



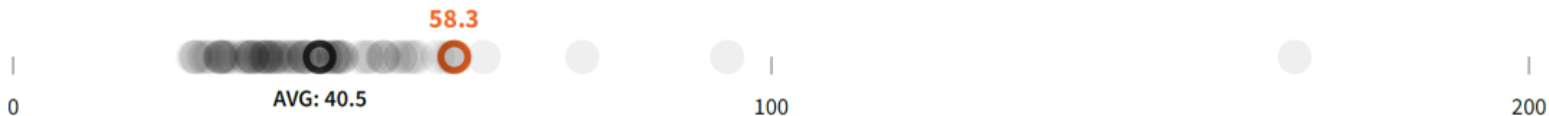
## Success Rate

Ratio of patents filed by the institution between 2012 and 2017 that were subsequently granted by patent offices



## Commercial Impact Score 58.3

Indicator of how often basic research originating at an institution has influenced commercial R&D activity, measured by academic papers cited in patent filings. Higher scores are better.

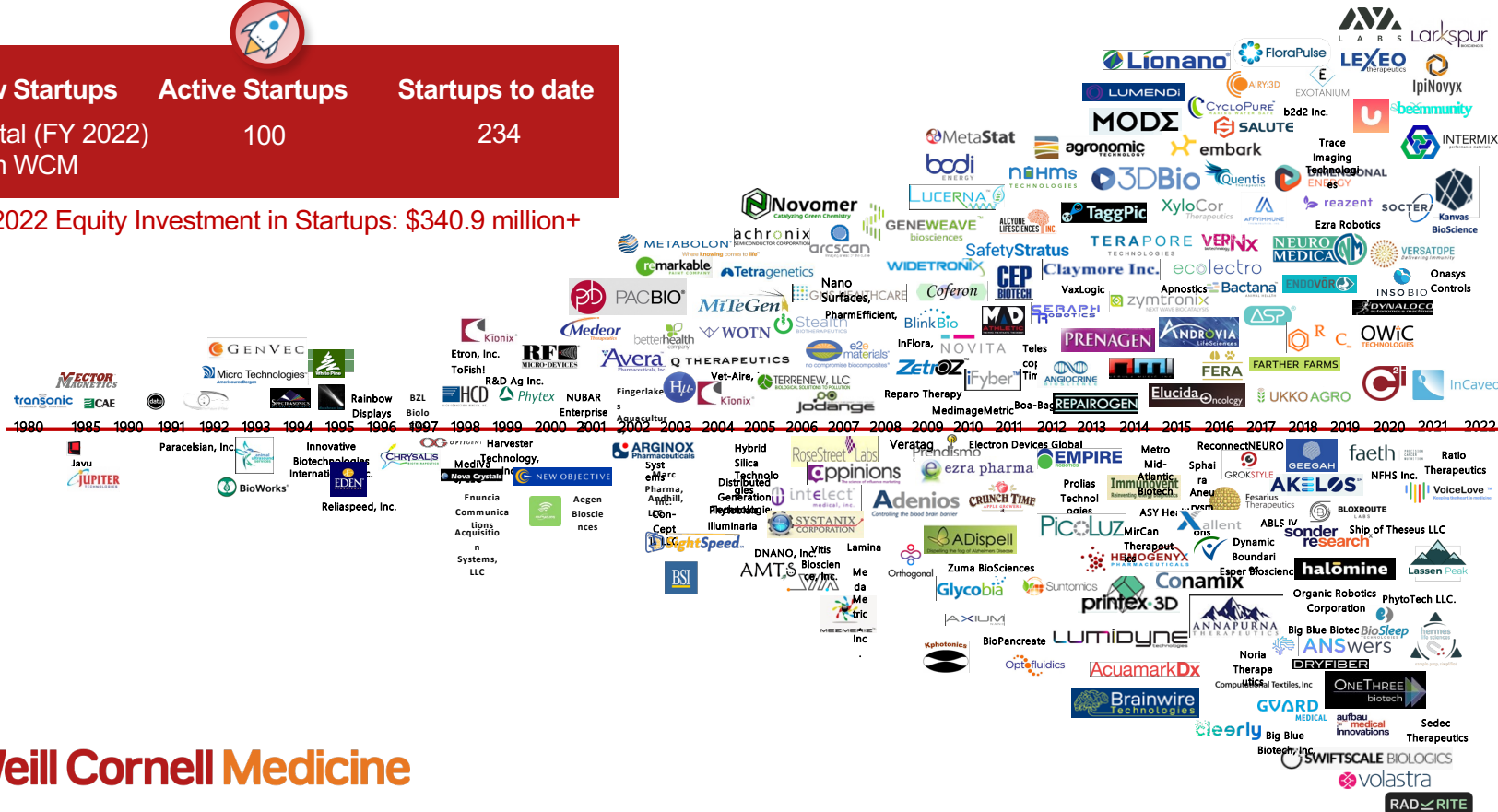


# Cornell University has launched over 234 startups to date



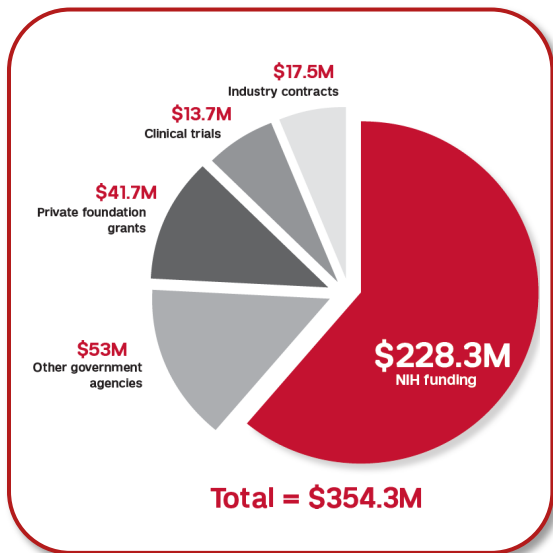
# New Startups	Active Startups	Startups to date
11 Total (FY 2022)	100	234
6 from WCM		

FY2022 Equity Investment in Startups: \$340.9 million+



# Weill Cornell Medicine: Research Overview

## Research Funding FY2021 – 2022\*

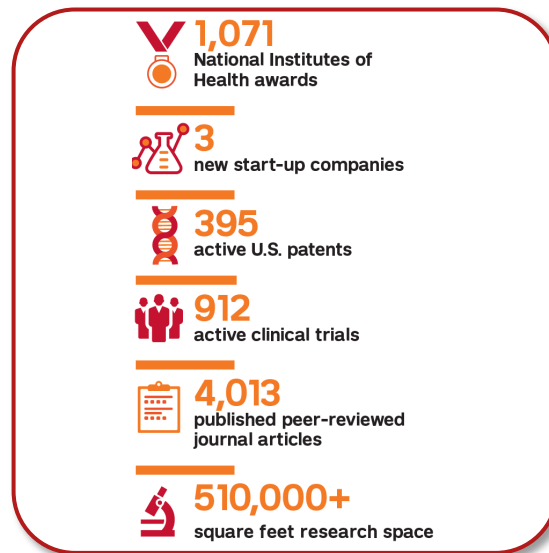


## Faculty Memberships\*

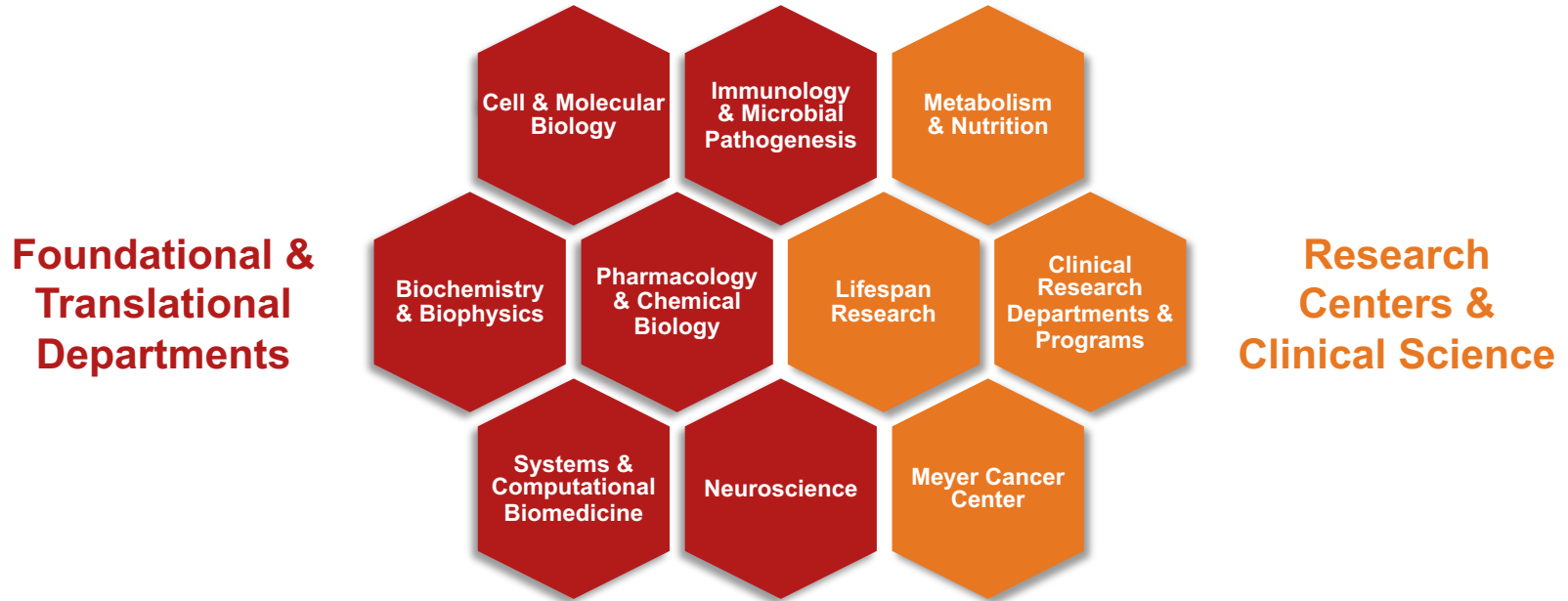
### Faculty Memberships\*

- 46** America Society for Clinical Investigation
- 12** National Academy of Medicine
- 4** National Academy of Sciences
- 1** Howard Hughes Medical Institute
- 1** Nobel Laureate

## Highlights 2020 – 2021\*



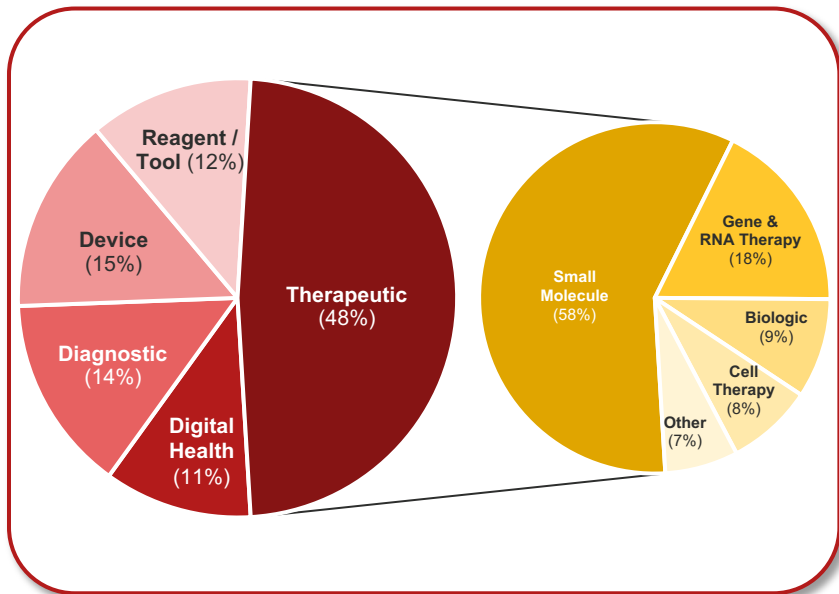
# Weill Cornell Medicine: Research Priorities



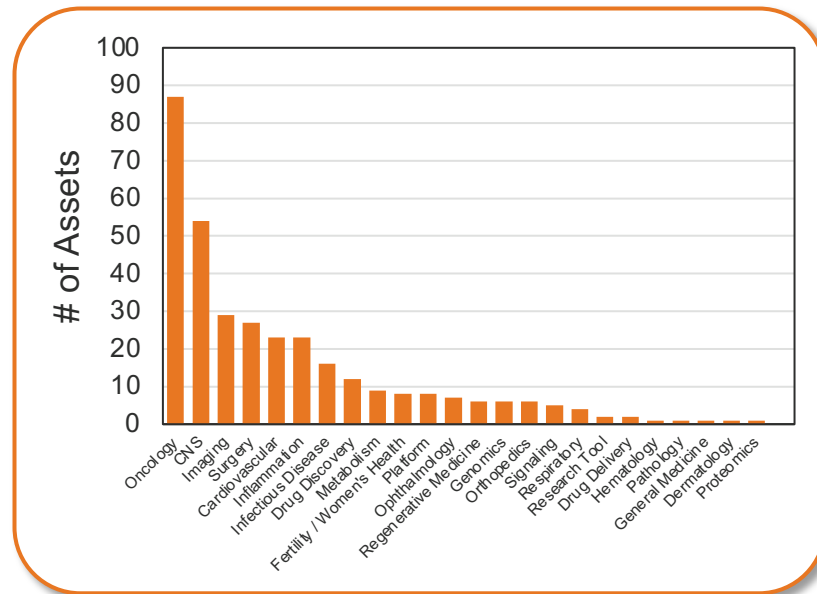
WCM is actively expanding institutional capabilities in computational research, starting with a renewed focus on precision medicine and AI through Systems & Computational Biomedicine and the establishment of a **Biomedical Informatics** clinical department

# Weill Cornell Medicine: Available IP Portfolio Overview

## Technology Categories



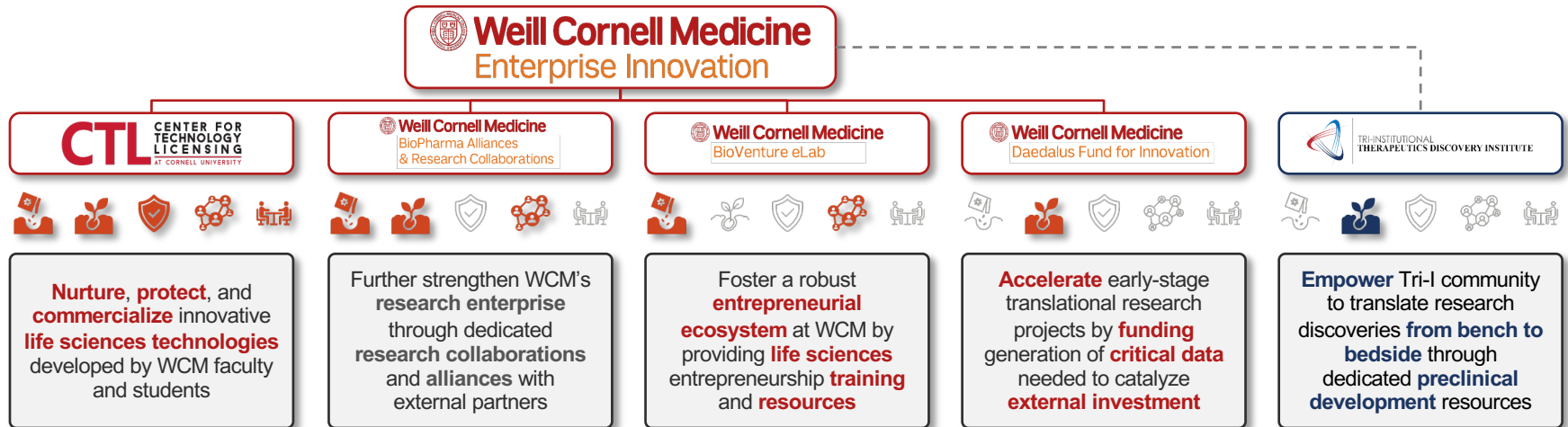
## Technology Fields (Primary)



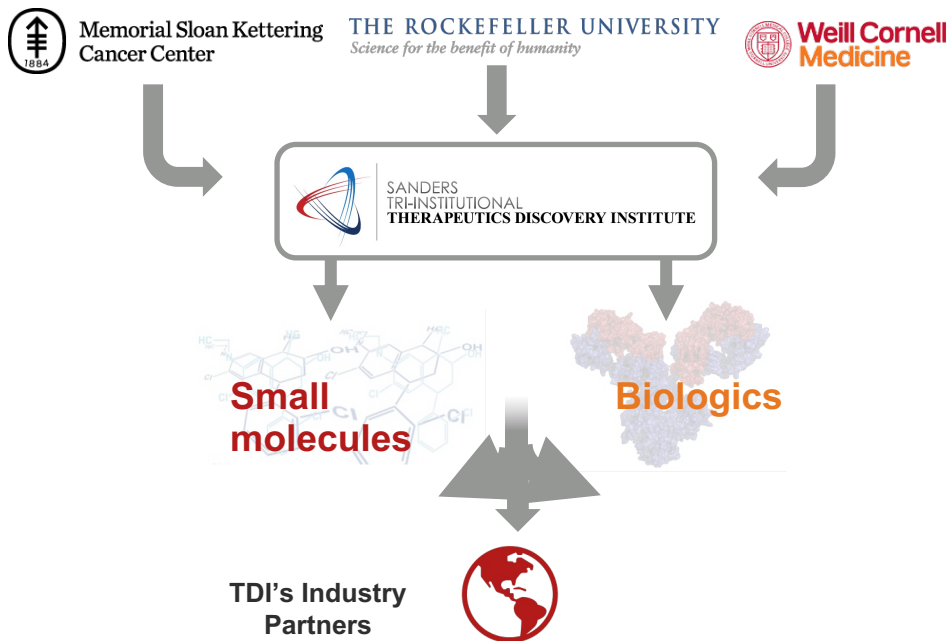


# Weill Cornell Medicine Enterprise Innovation

Each branch of WCM EI collaboratively supports key aspects of the innovation lifecycle



# Sanders Tri-Institutional Therapeutics Discovery Institute (Tri-I TDI)



## Sanders TRI-I TDI Mission

The **Sanders Tri-Institutional Discovery Institute** is a therapeutics accelerator which works in partnership with Memorial Sloan-Kettering Cancer Center, The Rockefeller University and Weill Cornell Medicine

This collaboration partners the **creative power of academia with Pharma-quality drug discovery** to advance groundbreaking biological discoveries to preclinical studies

All TDI program graduates are ready for commercial development and have **in vitro and in vivo proof-of-concept, preliminary safety, and IP protection**

# Weill Cornell Medicine Enterprise Innovation

WCM EI Accelerates the best of biomedical innovation to market and translates groundbreaking research into revolutionary care

**FY 2023  
Achievements**

**3**

**New Startups**

**38**

**Options and  
Licenses**

**83**

**WCM Products  
on the Market**

**89**

**Invention  
Disclosures**

**126**

**Entrepreneurship  
Events**

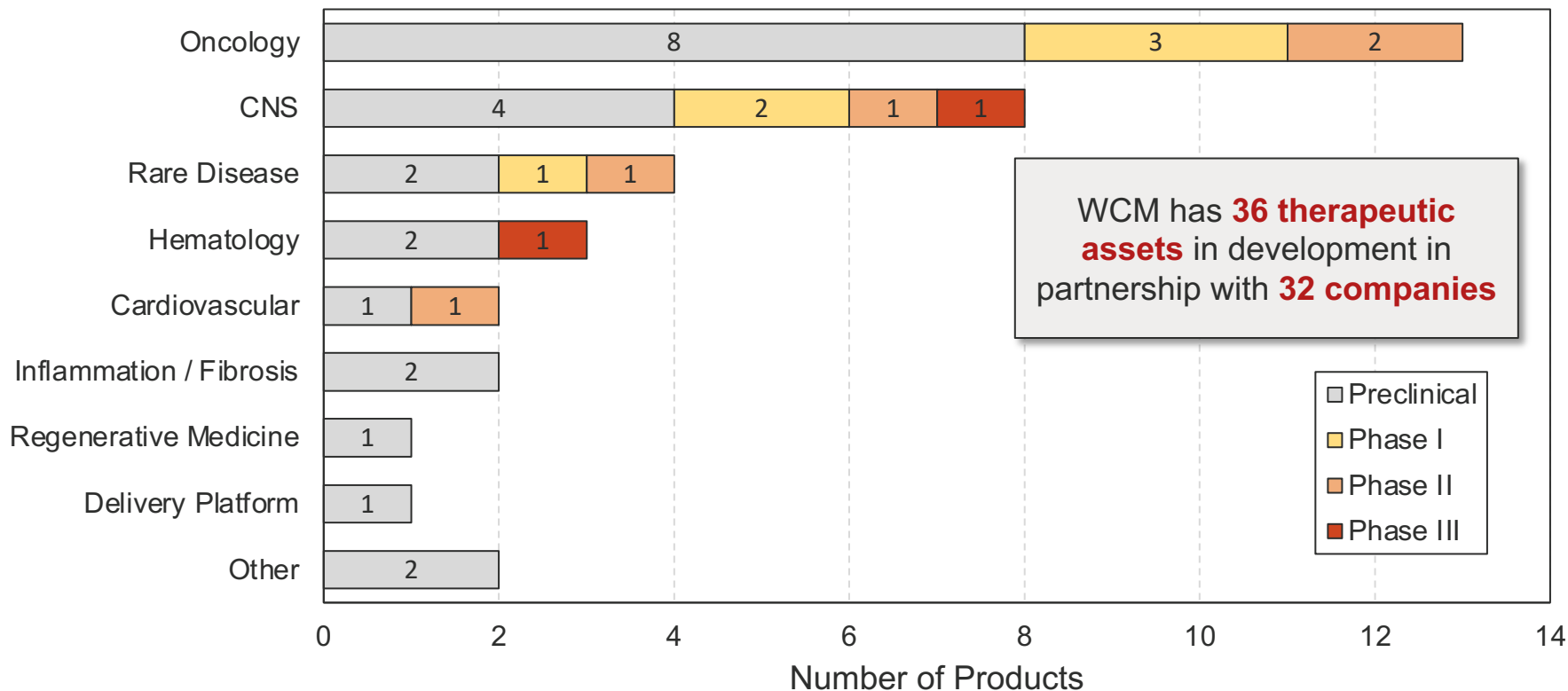
**\$200k**

**Gap Funding  
Distributed**



**Weill Cornell Medicine**

# WCM Partnered Pipeline: Therapeutics



# Partnering with Weill Cornell Medicine EI

WCM Enterprise Innovation is your door to partnership, licensing, and collaboration at Weill Cornell Medicine



# Resources Available to Weill Cornell Medicine Licensees



**Access to Core Facilities** such as the Clinical and Translational Research Center through collaboration or direct engagement



**Affiliation with New York Presbyterian Hospital (NYP)** and surrounding institutions such as **MSK** and **Rockefeller University**



**Access to Tangible Materials and Data assets** from the Weill Cornell Medicine clinical infrastructure



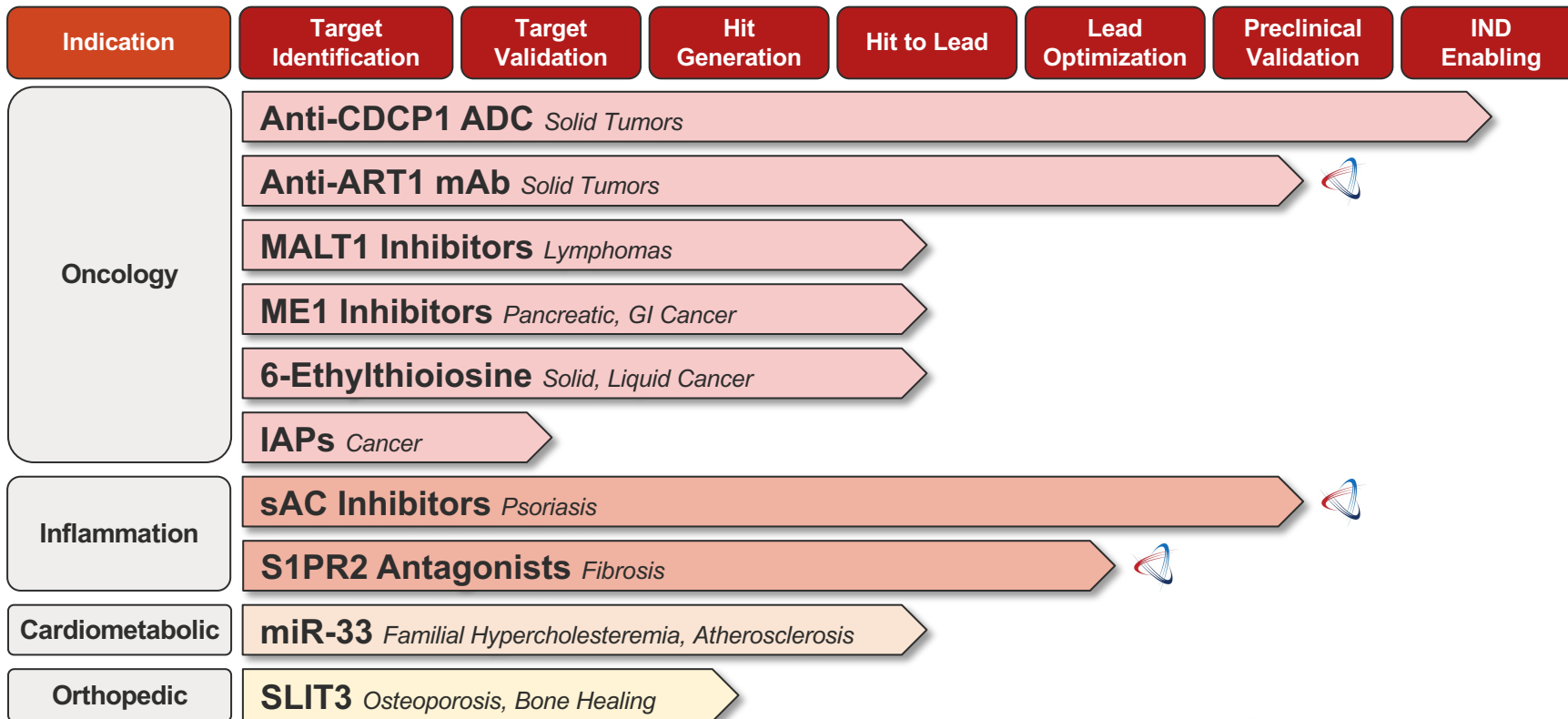
Work with Weill Cornell Medicine investigators and clinicians who are **Key Opinion Leaders** in their fields



**Access to cross campus collaboration** at Cornell University, Cornell Tech, and Weill Cornell Medicine - Qatar



# Projects featured at the 6<sup>th</sup> KDDF C&D Tech Fair



# Anti-CDCP1 Antibody-Drug Conjugate for the Treatment of Solid Tumors

## Development Summary

**Lead Inventor:** Lewis Cantley

**Target:** CUB domain-containing protein 1 (CDCP1)

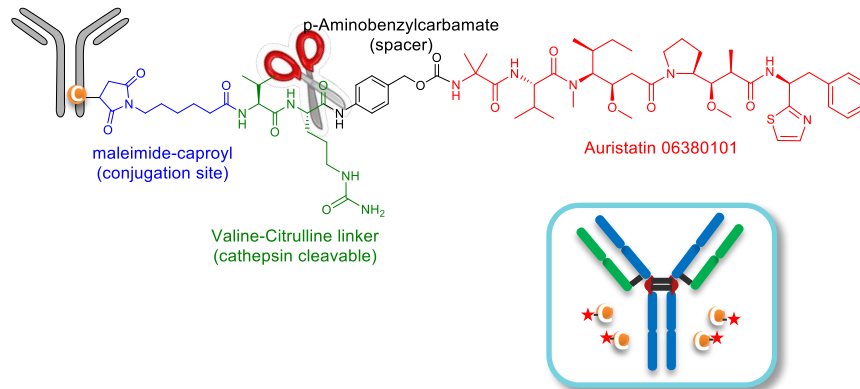
**Modality:** Humanized Antibody Drug Conjugate (ADC)

**Indication:** Solid Tumors

**Mechanism of Action:** CDCP1 is overexpressed in multiple solid tumor types and interacts with oncogenic signaling pathways RAS, EGFR, Src and more to promote tumor growth, metastasis, and resistance

**Discovery:** Antibody engineered through extensive phage screening and optimized to improve binding and manufacturing characteristics

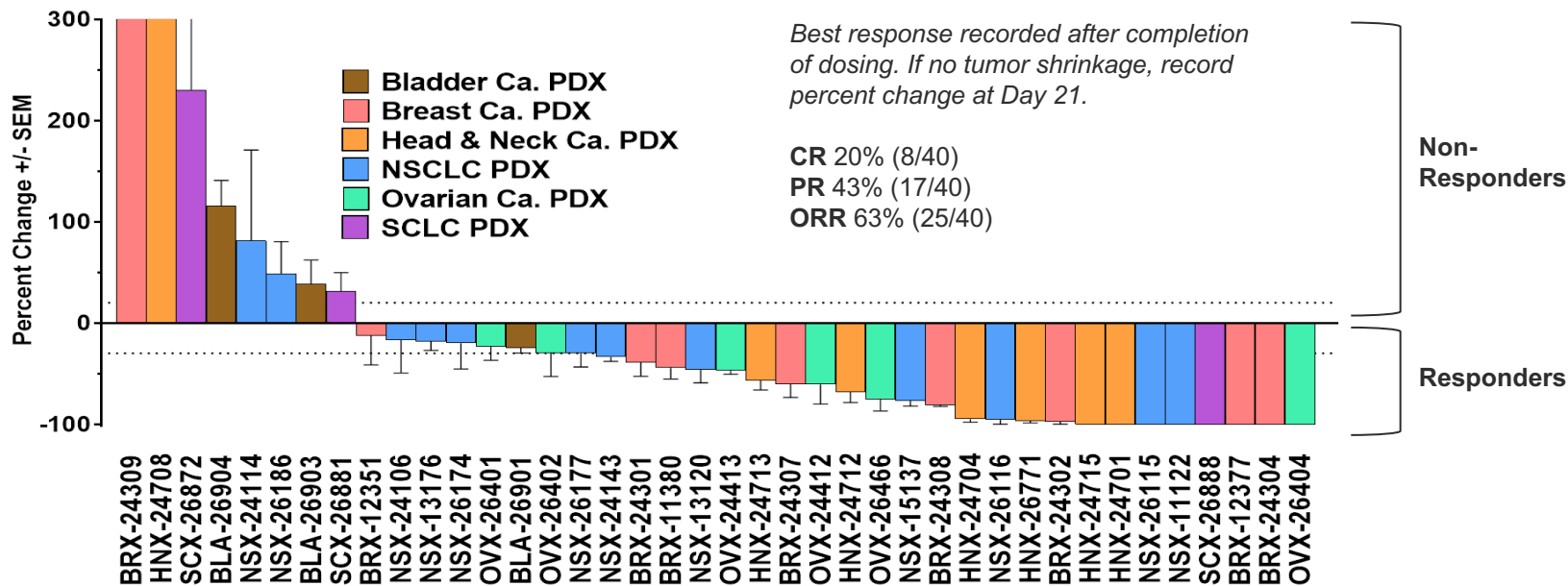
**Stage of Development:** Ready for IND-enabling studies





# Anti-CDCP1 Antibody-Drug Conjugate for the Treatment of Solid Tumors

The CDCP1 ADC has broad in vivo efficacy in PDX models of multiple solid tumor types



# Anti-CDCP1 Antibody-Drug Conjugate for the Treatment of Solid Tumors



## Development Achievements

- ✓ Anti-CDCP1 antibody screening and validation
- ✓ Generation of an anti-CDCP1 hADC lead candidate with demonstrated *in vitro* activity
- ✓ Confirmed *in vivo* activity in a broad range of solid tumor PDX models with favorable PK/PD
- ✓ Anti-CDCP1 hADC was generally well tolerated in Cynomolgus ETS studies



## Next Steps



License anti-CDCP1 hADC candidate to an industry partner with the capabilities and resources to drive IND-enabling studies

# Anti-ART1 Monoclonal Antibody for Improved Anticancer Immunotherapy

## Development Summary

**Lead Inventors:** Brendon Stiles and Tim McGraw

**Target:** ADP-ribosyltransferase-1 (ART1)

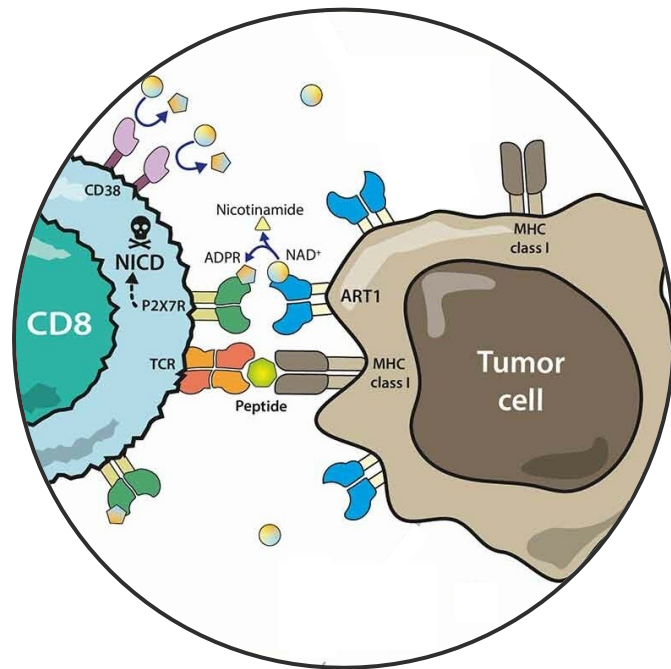
**Modality:** Humanized Monoclonal Antibody

**Indication:** Solid Tumors

**Mechanism of Action:** ART1 is an extracellular enzyme that modifies ion channel P2X7R to cause constitutive opening and apoptosis

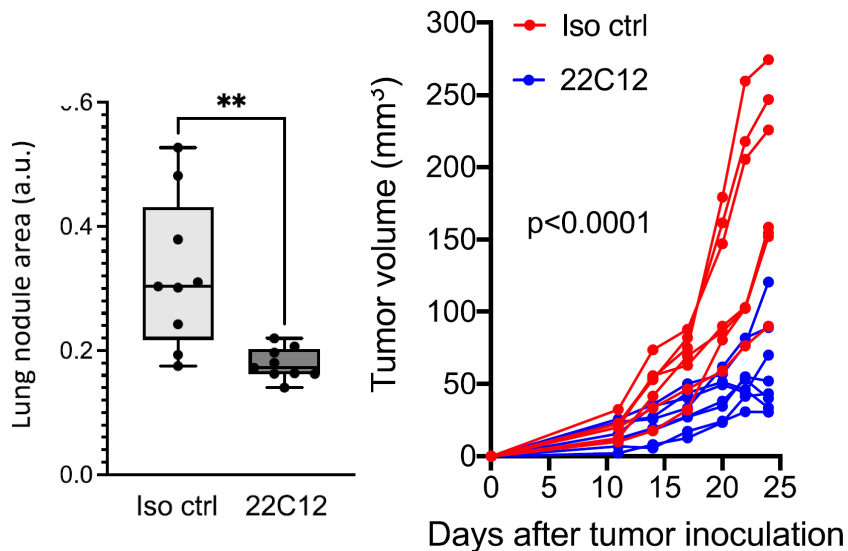
**Discovery:** 22C12 is a highly potent and specific anti-ART1 monoclonal antibody developed in collaboration with the Tri-I TDI

**Stage of Development:** Ready for IND-enabling studies

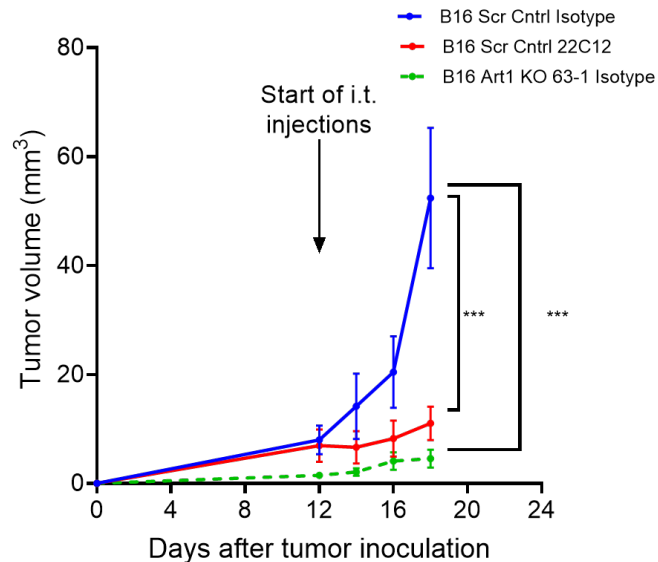


# Anti-ART1 Monoclonal Antibody for Improved Anticancer Immunotherapy

## Non-Small Cell Lung Cancer Mouse Model



## Melanoma Mouse Model



# Anti-ART1 Monoclonal Antibody for Improved Anticancer Immunotherapy



## Development Achievements

- ✓ Development of 22C12 using the AlivaMab mouse
- ✓ *In vitro* validation of 22C12 affinity for ART1 and blockade of ART1 activity
- ✓ Demonstration of activity against lung cancer and melanoma models *in vivo* in mice
- ✓ Confirmation of P2X7R downregulation, ART1 upregulation in human NSCLC



## Next Steps



License anti-ART1 mAbs to an industry partner with the capabilities and resources to drive clinical development

# Soluble Adenylyl Cyclase (sAC) Inhibitors for the Treatment of Psoriasis

## Development Summary

**Lead Inventor:** Jonathan Zippin

**Target:** Soluble Adenylyl Cyclase (sAC)

**Modality:** Small Molecule

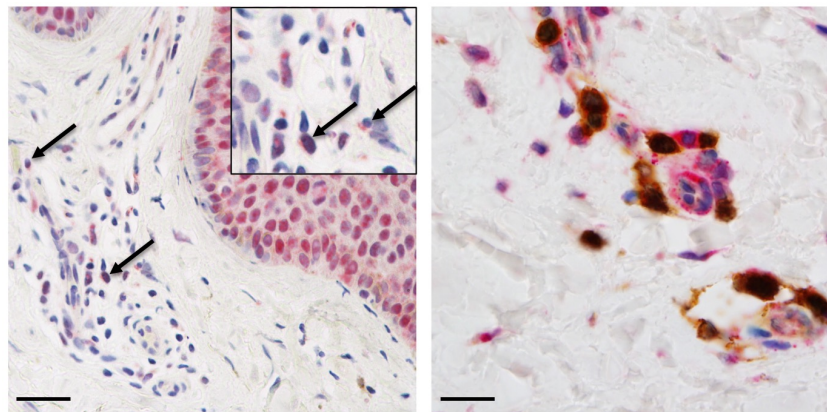
**Indication:** Psoriasis

**Mechanism of Action:** sAC inhibitors prevent the induction of Th17-mediated psoriasis by preventing Th17 cell polarization and growth upon topical administration

**Discovery:** High throughput screening studies identified LRE1 as an allosteric inhibitor of sAC and potent analogs were developed with <100 nM EC<sub>50</sub> and attractive PK characteristics

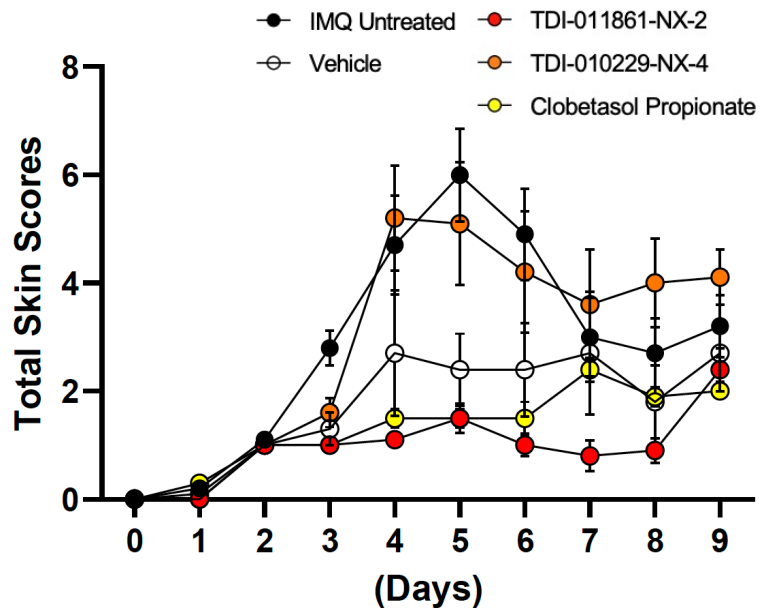
**Stage of Development:** Preclinical

### Psoriasis Skin Lesions Express sAC in Lymphocytes

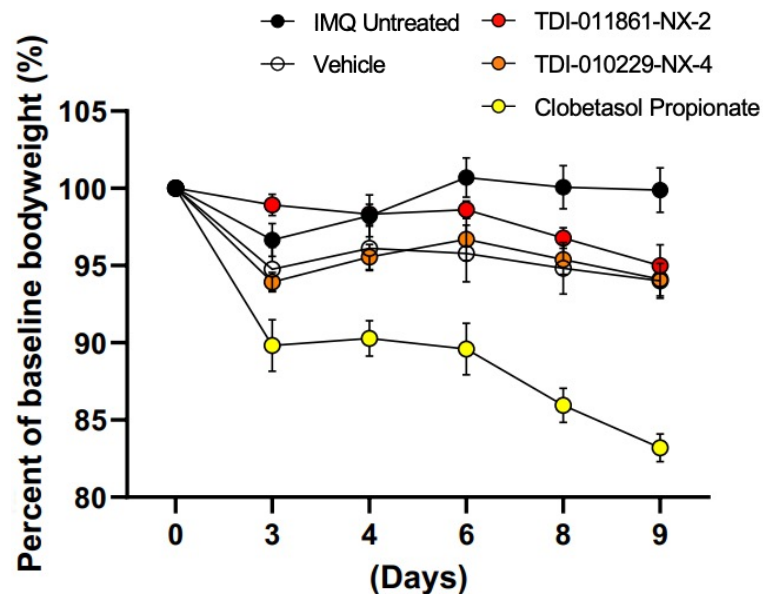


# Soluble Adenylyl Cyclase (sAC) Inhibitors for the Treatment of Psoriasis

## TDI-11861 Reduces Skin Scores



## TDI-11861 Does Not Affect Weight



# Soluble Adenylyl Cyclase (sAC) Inhibitors for the Treatment of Psoriasis



## Development Achievements

- ✓ LRE1 was identified as an allosteric inhibitor of sAC from a high throughput screen
- ✓ Analogs of LRE1 with <100 nM EC<sub>50</sub> and attractive PK characteristics were developed
- ✓ Topically administered TDI-11861 has similar efficacy to clobetasol but without weight loss
- ✓ No significant activity against >310 kinases or 47 other well-known targets identified



## Next Steps



License sAC inhibitors or collaborate with an industry partner with the capabilities and resources to drive IND-enabling studies



# Contact for Interest in Licensing Weill Cornell Medicine Technologies



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