



HUMAN DATA FOR NEXT  
GENERATION MEDICINES



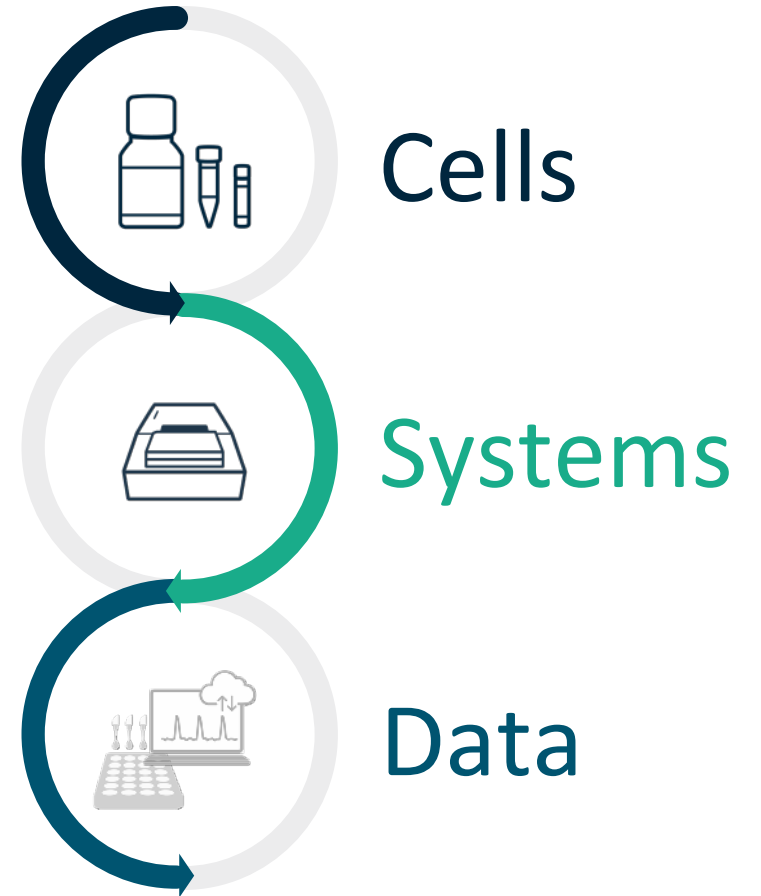
# We Drive Discovery with Human Functional Data

▶

Human.  
Functional.  
Data.

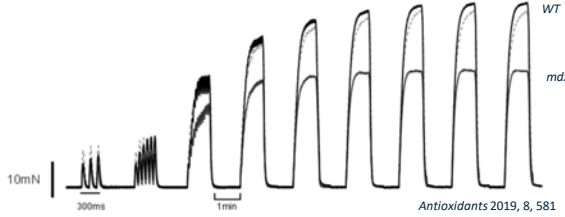
## Human from the very beginning:

- Curi Bio delivers **human functional data** to drive critical decisions for next-generation medicines.
- Curi Bio's integrated ecosystem of human cell models, biosystems instrumentation products, and data analytics platforms provides researchers access to unprecedented insights into functional biology.
- Scientists rely on Curi Bio's offerings to guide discovery, development, and R&D decision making at critical junctures in the process of advancing new medicines to the clinic.



# We Measure Clinically-Relevant Function

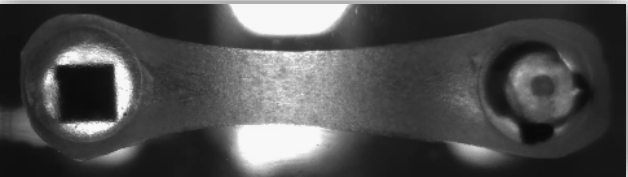
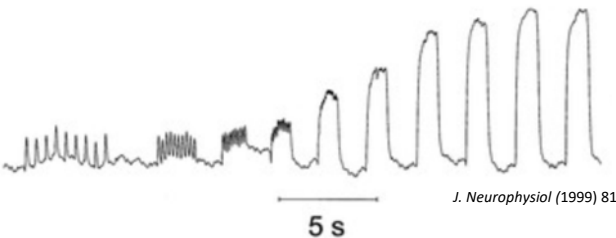
Mouse EMG



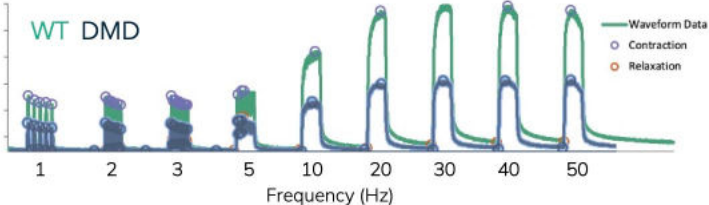
Dog EMG



Human EMG



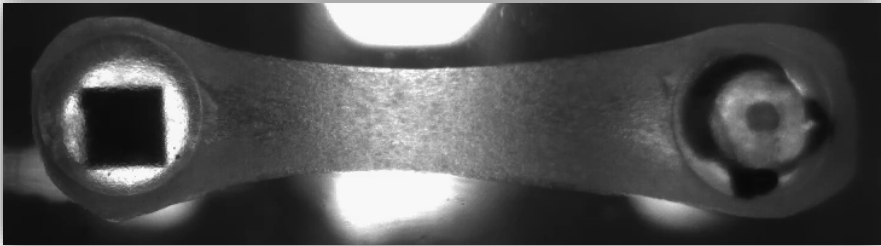
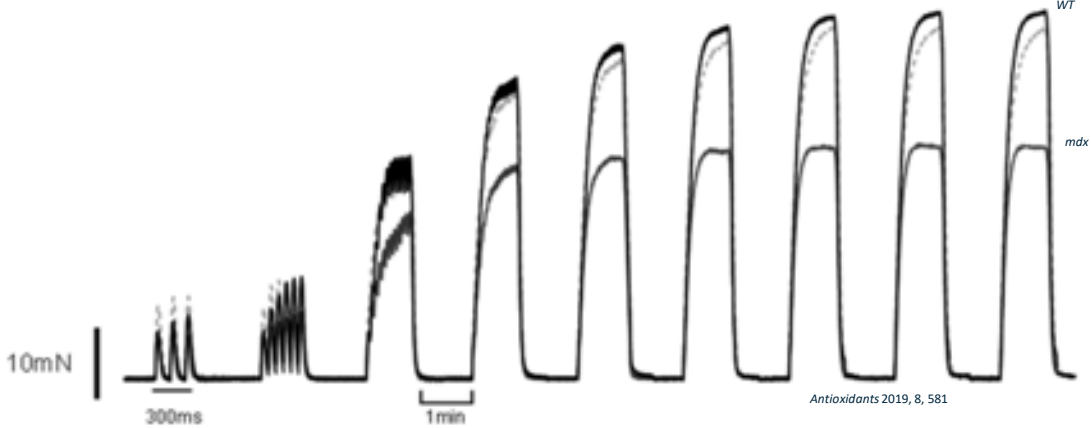
3D EMT on Mantarray



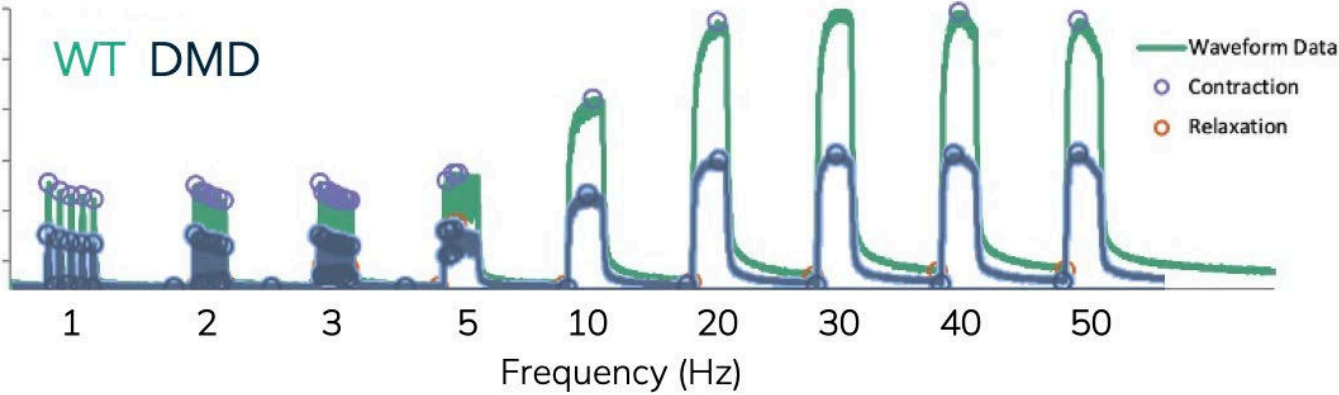
# We Measure Clinically-Relevant Function

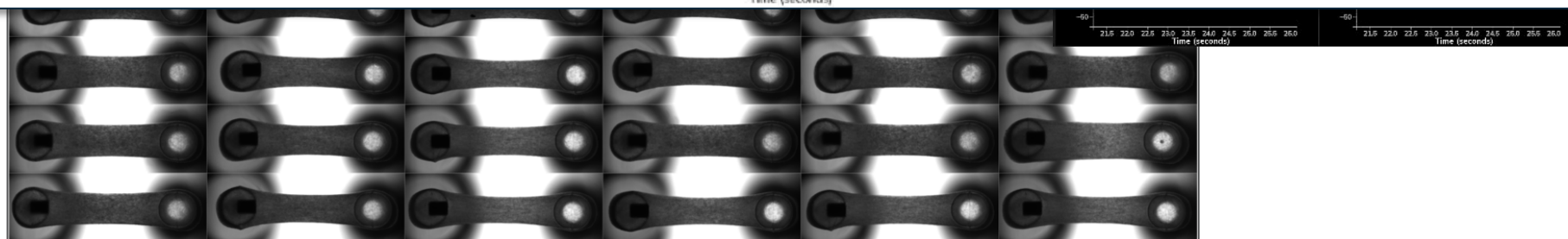
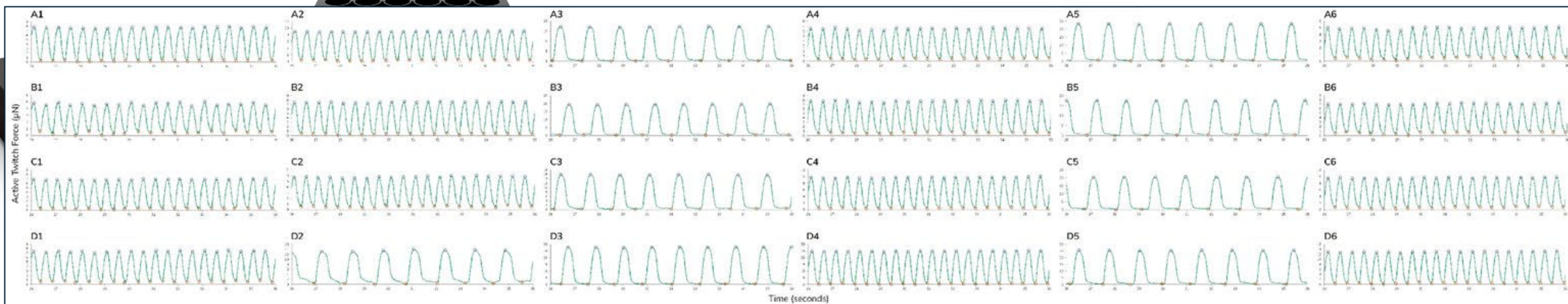


Mouse EMG



3D EMT on Mantarray





### 1) Tissue Formation

### 2) Functional assessments



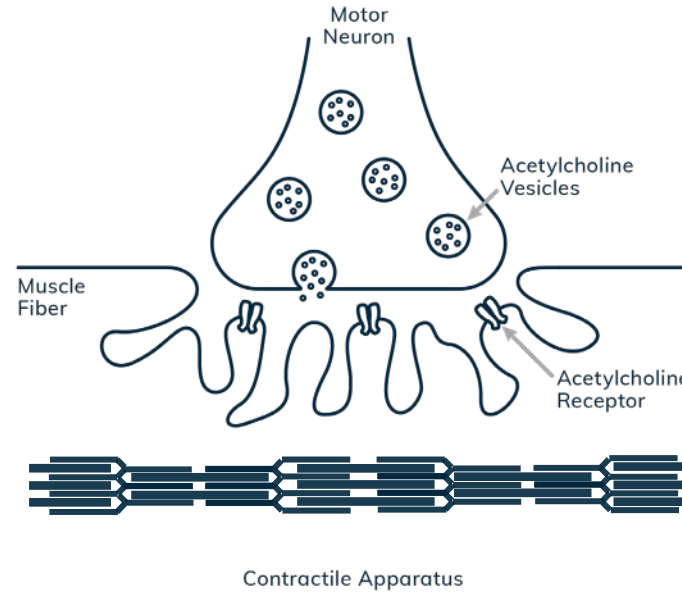
# The NMJ Translational Gap

## Neuromuscular Junction (NMJ)

Drives skeletal muscle contraction via acetylcholine-mediated synaptic transmission

Modulated by neurotransmitters, neurotoxins, and pharmacological agents

Central to neuromuscular diseases including ALS, SMA, and myasthenia gravis



## Animal Models

## Current *In Vitro* Models

## Limitations

Species-specific NMJ physiology limits human translation

Ethical concerns (e.g., 3Rs)

Challenging to isolate and interrogate mechanism

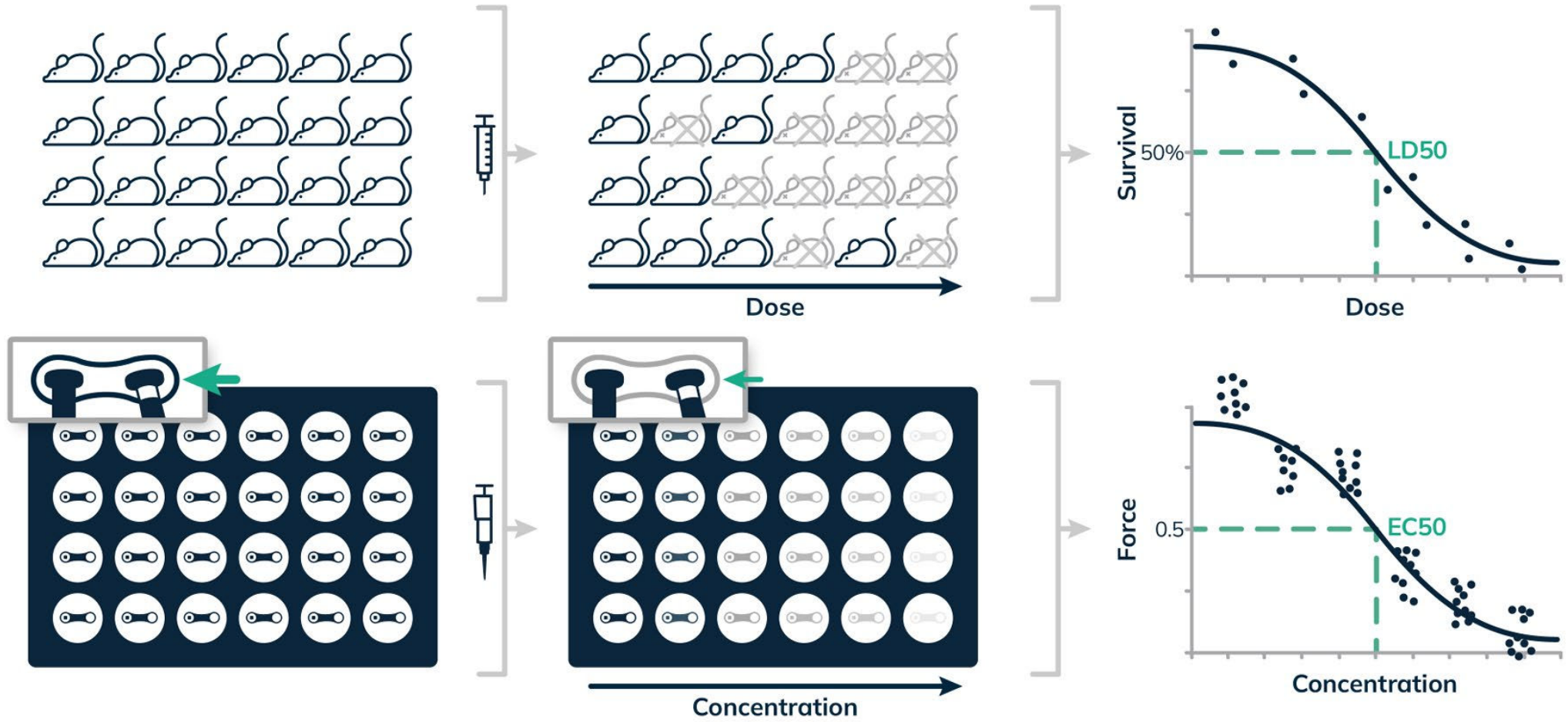
Difficult to replicate or scale reproducibly

Reliance on spontaneous neural activity

Proxy biochemical or imaging endpoints may not reflect functional output

There is a critical need for a scalable, reproducible NMJ platform that recapitulates 3D human physiology and enables direct measurement of neuron-driven muscle contraction

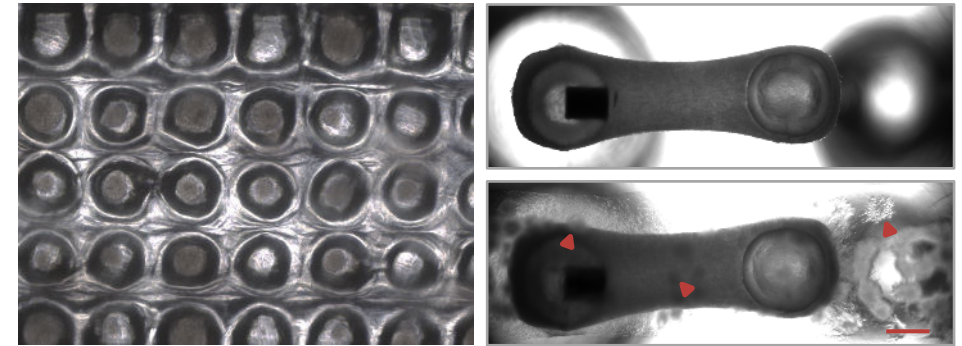
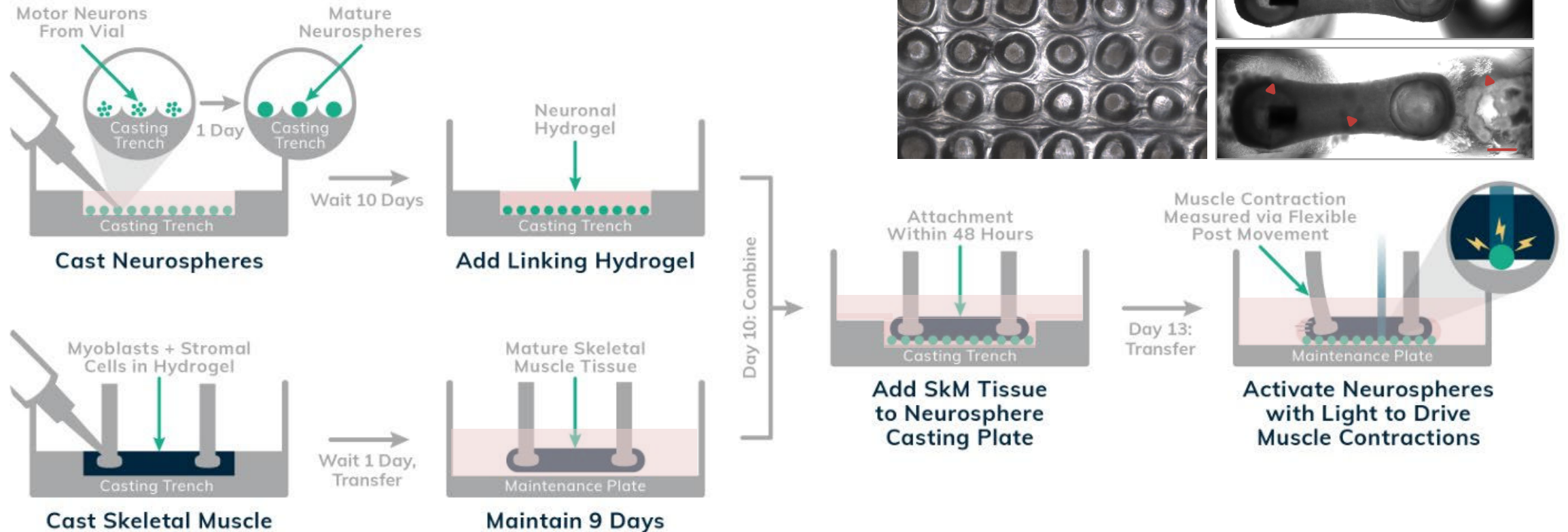
# Replacing the MLB



Curi's assay design is analogous to the MLB, but without complex injection variation and animal handling

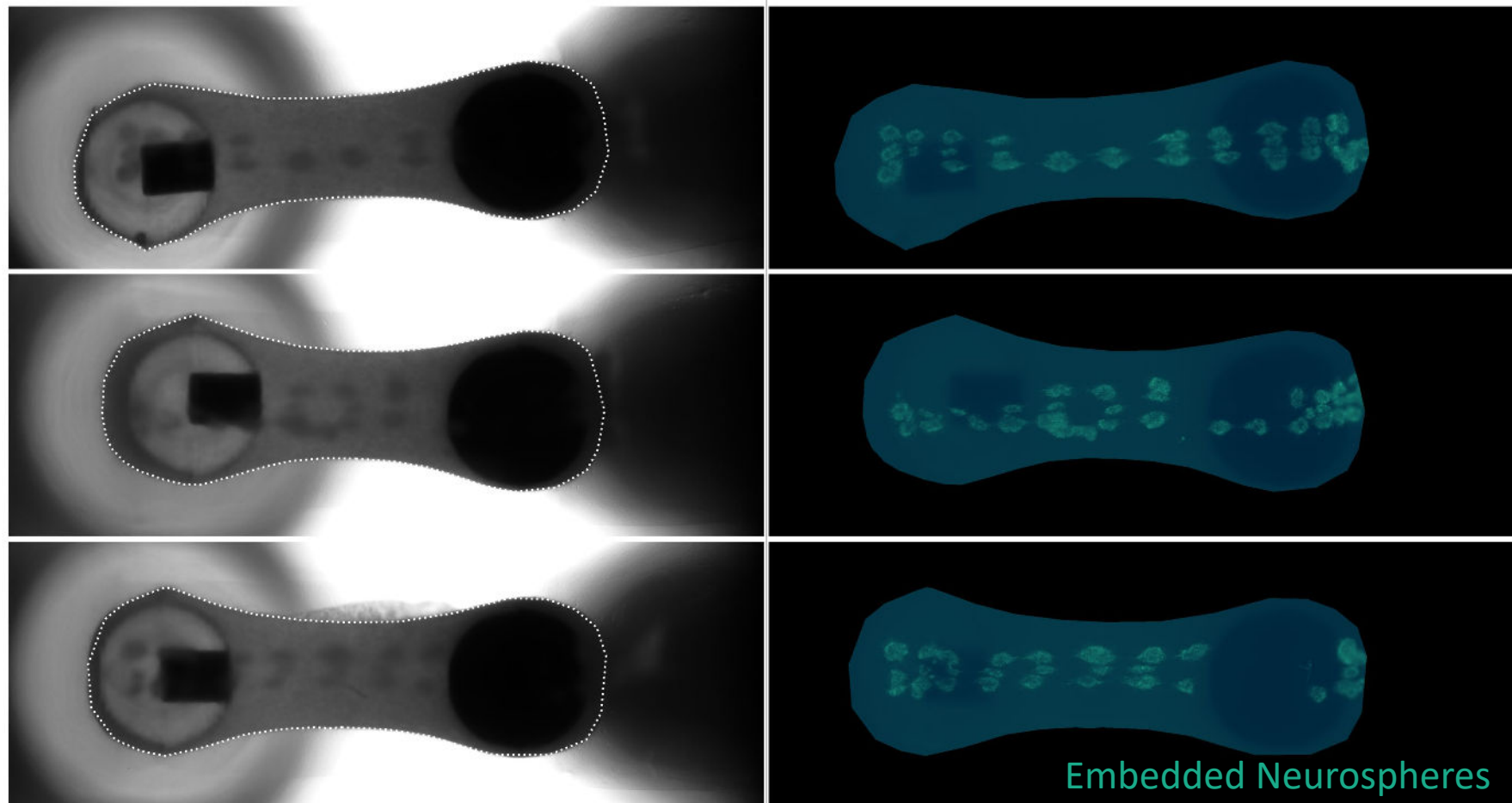
# Facile Neurosphere Seeding for NMJ Co-cultures

Neurosphere Modification of Current Mantarray Casting Trench: From LN2 to Co-culture Tissue in a Single Consumable



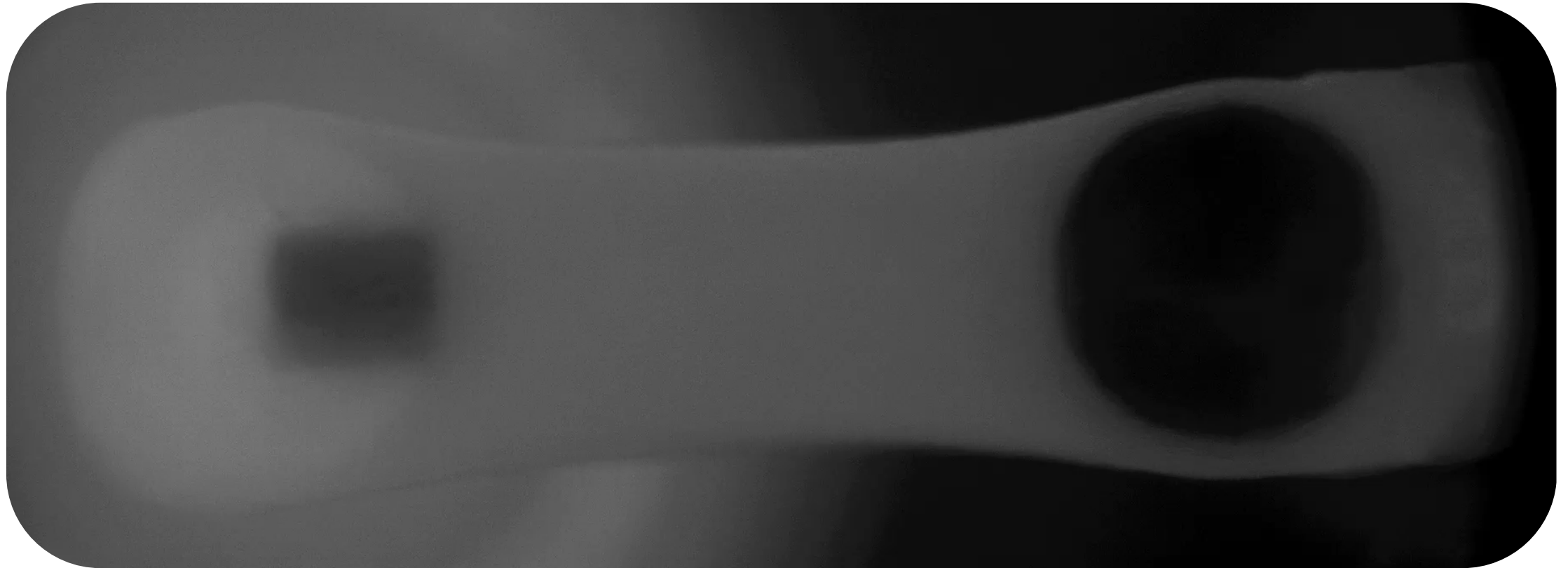
NMJ spheroid consumable makes generation of spheroids and 3D co-culture creation with engineered muscles simple and reproducible.

# Facile Neurosphere Seeding for NMJ Co-cultures



Uniform patterning of 45 motor neuron neurospheres evenly across 3D skeletal muscle tissues drives reproducible innervation and reliable neuromuscular function

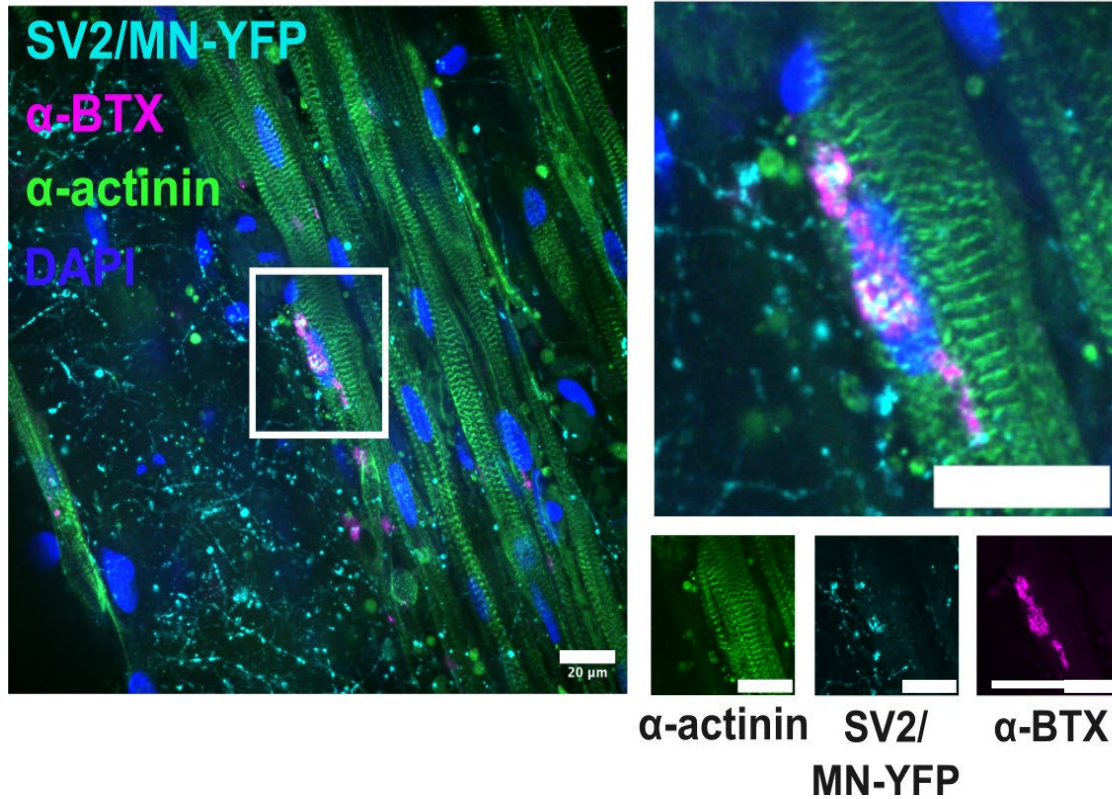
# Light-Sensitive NMJ Co-Cultures



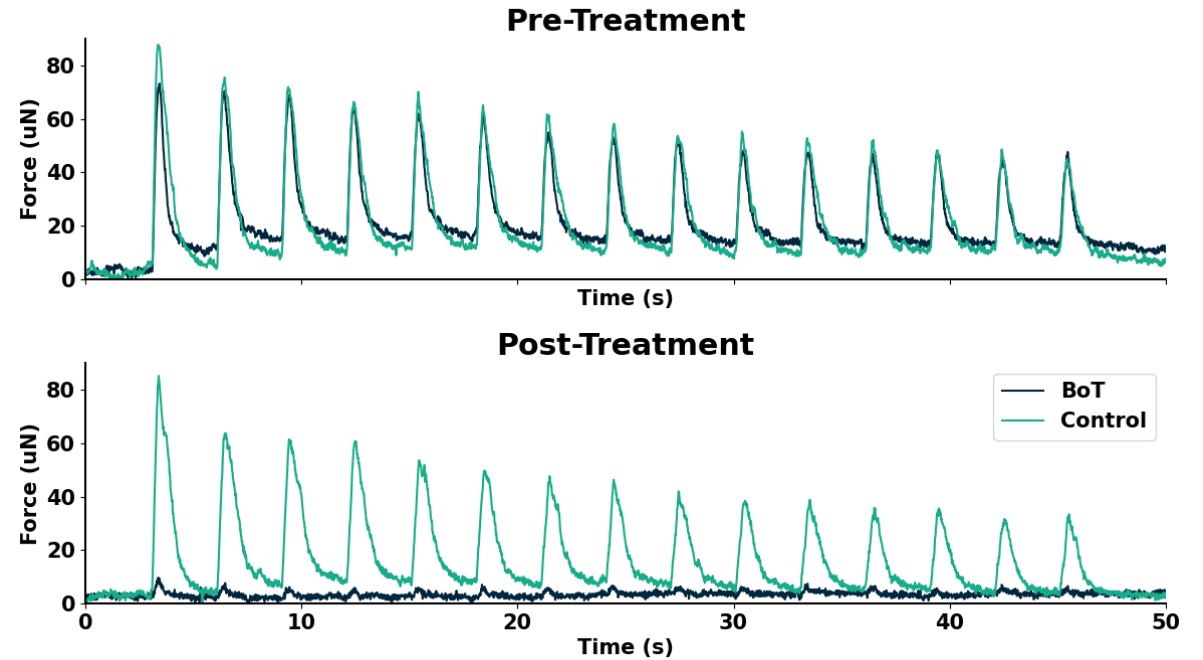
Optogenetic activation enables real time measurement of neuron-driven function in innervated tissues

# Structural and Functional NMJ Formation

## NMJ Morphology

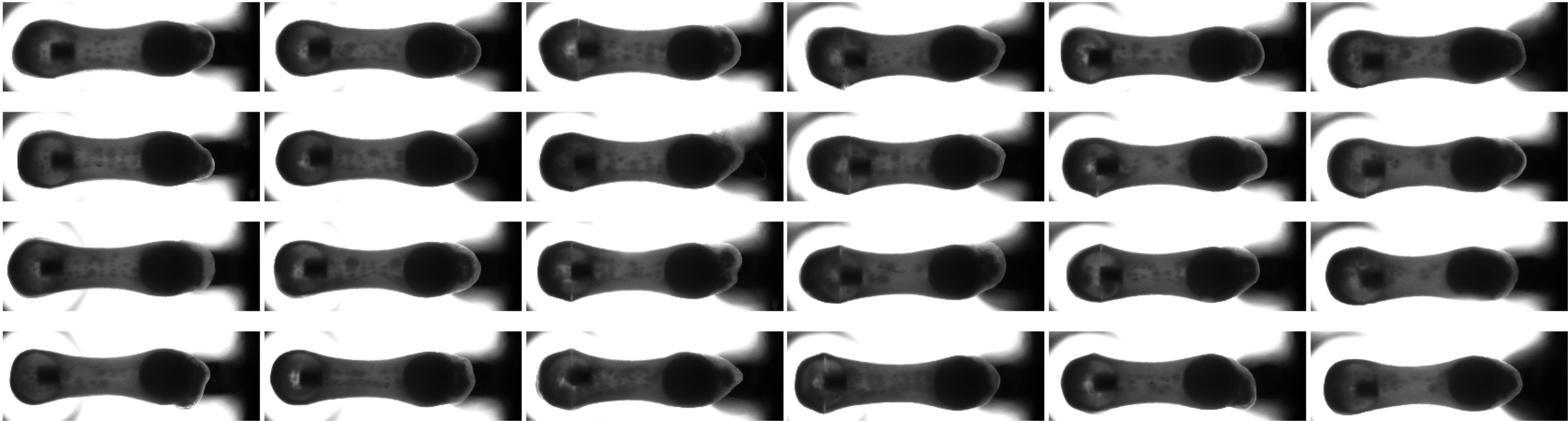


## BoNT Blocks Neuron-Mediated Contraction



Curi's assay measures the loss of muscle contractility in response to applied drugs

# Single-Plate Dose Response

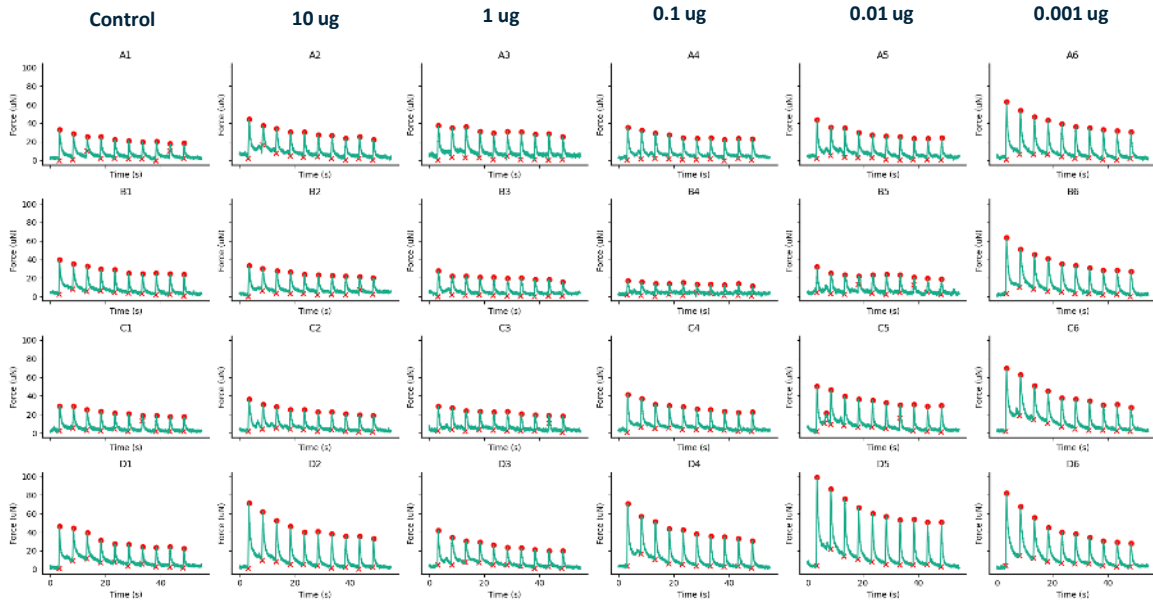


Curi's NMJ is reliable, consistent, and can be made by simple robotic pipetters or junior personnel

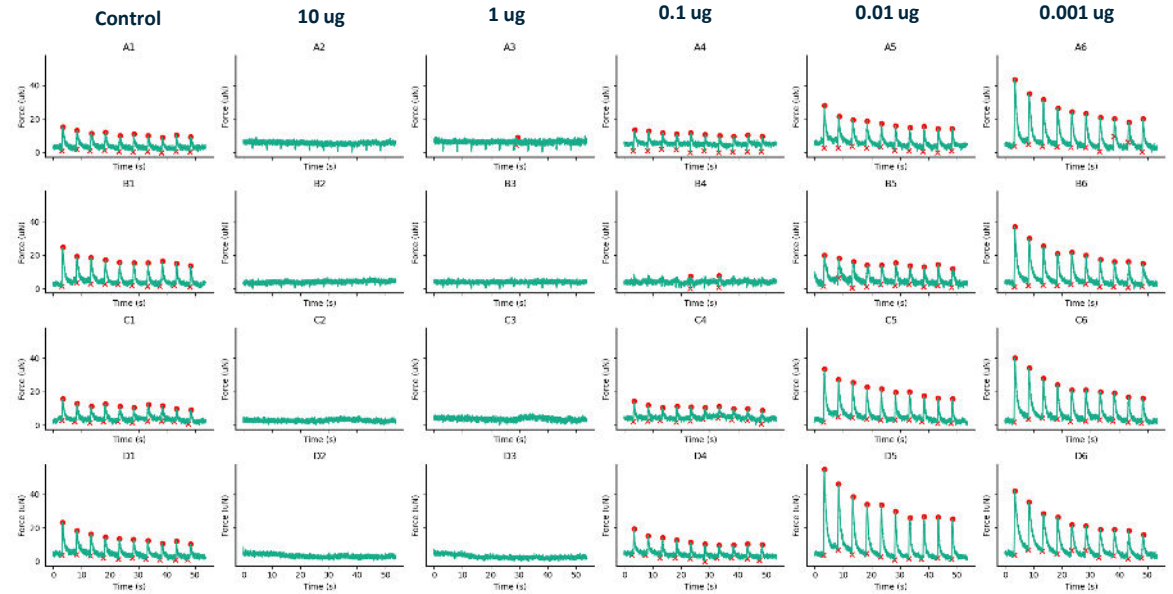
# Single-Plate Dose Response



## Pre-Treatment

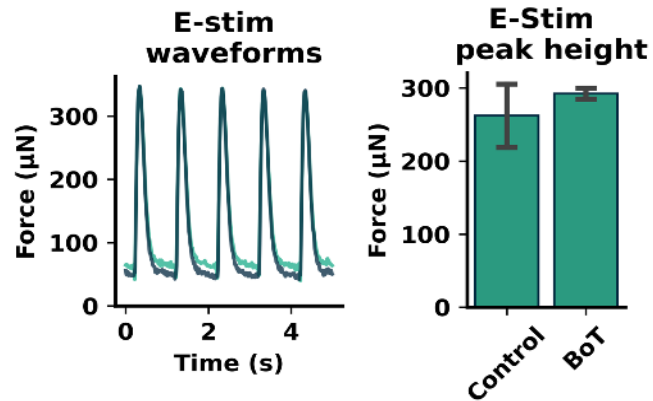
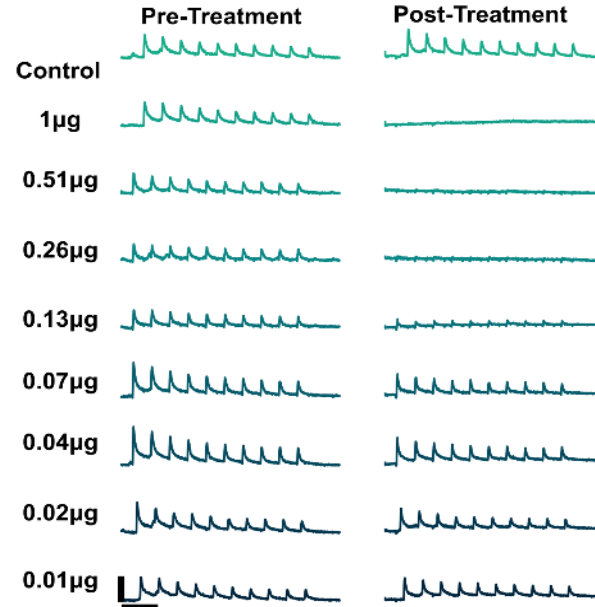
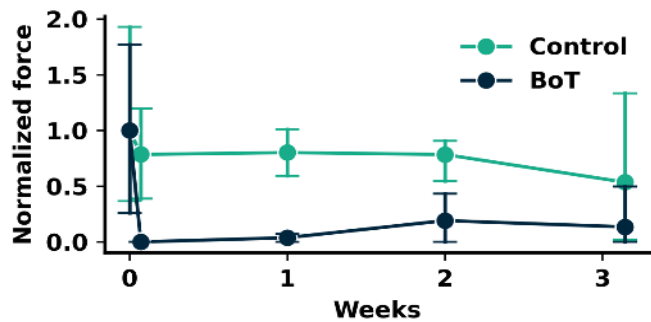
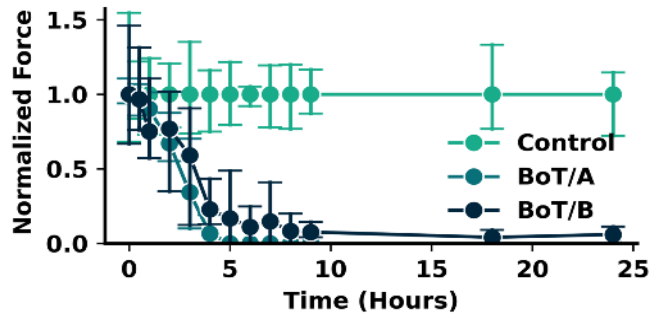
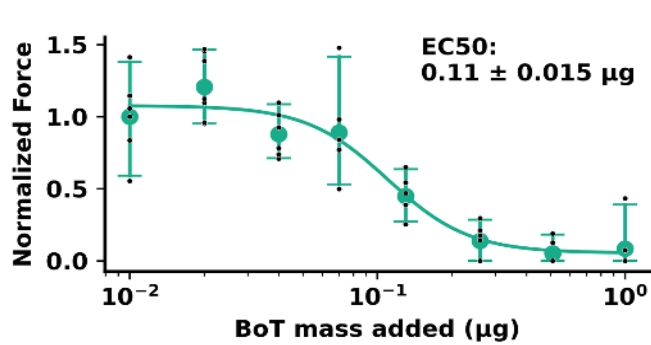


## 24 hours Post-Treatment



Curi's assay measures the loss of muscle contractility in response to applied drugs

# BoNT Dose-Response in a Dish



## Functional blockade by botulinum toxins

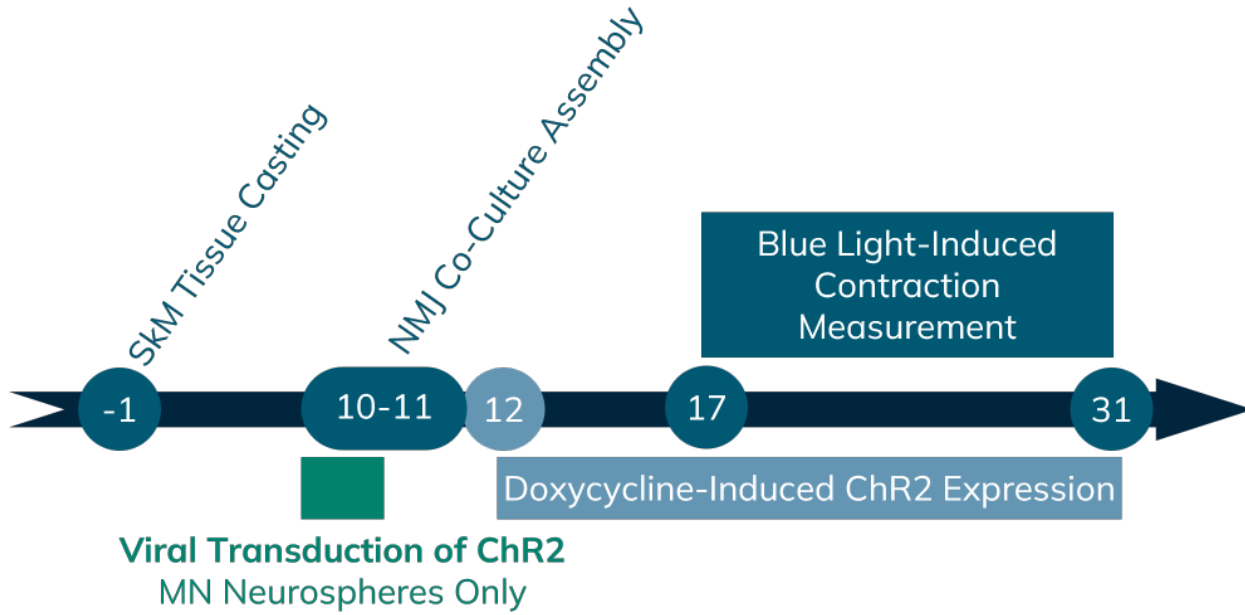
- Clear dose dependent activity
- Sensitive to both BoT/A and BoT/B toxin complexes
- Lasting blockade >2 weeks following treatment

## SkM component unaffected by BoT treatment

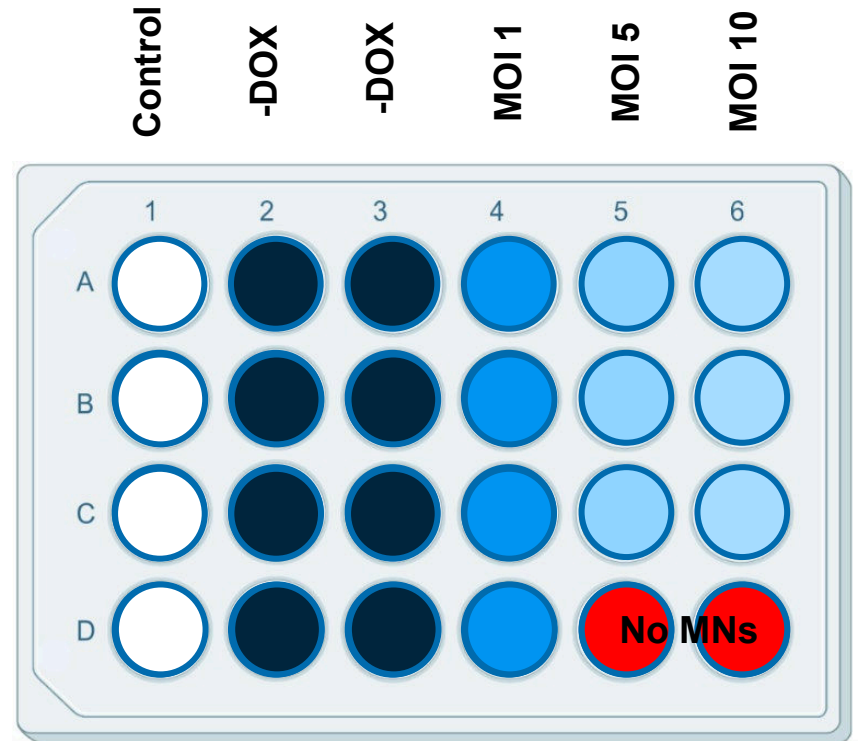
- Co-culture tissues exhibiting loss of blue light response remain equally functional in response to e-stim following BoT treatment

Morphological examination of synapses increases confidence in biological relevance of this model for BoNT potency testing

# Viral Delivery of ChR2

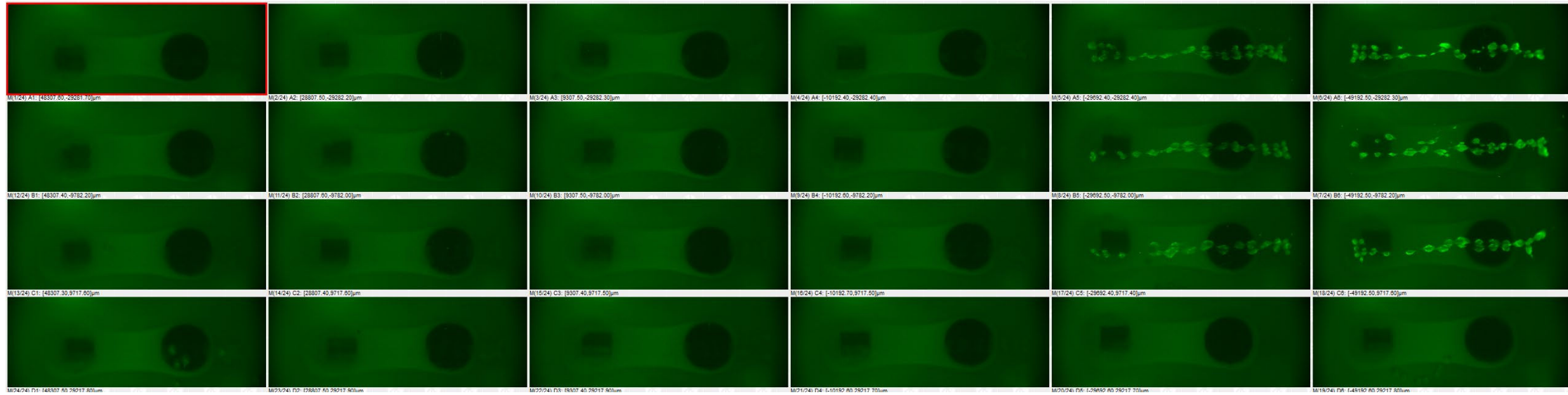


SkM – 24-WT Lot 1B  
MNs – WTC11-OPOT Lot #11A

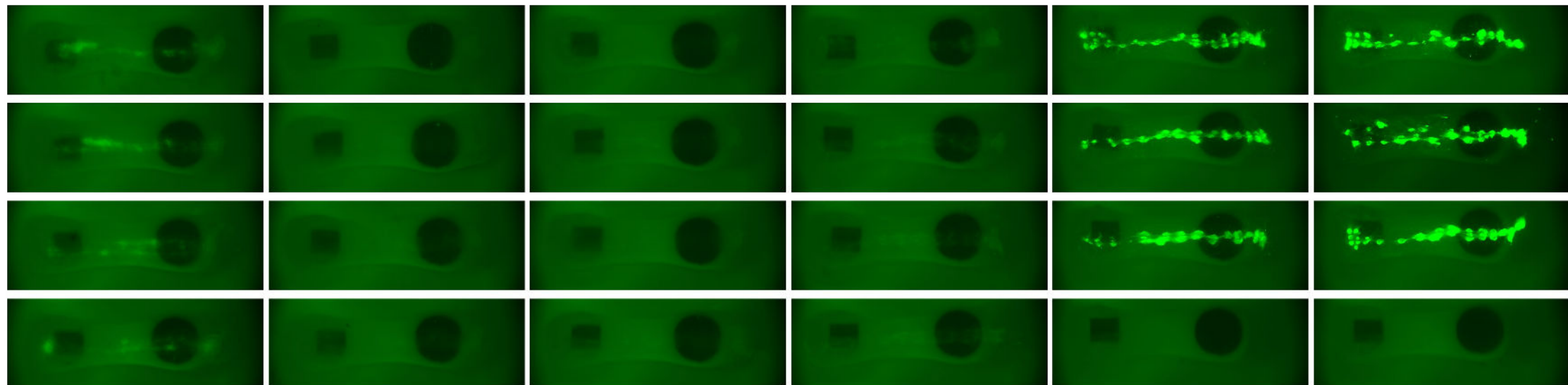


# Viral Delivery of ChR2

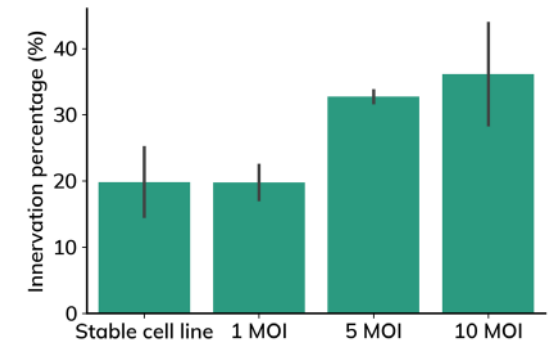
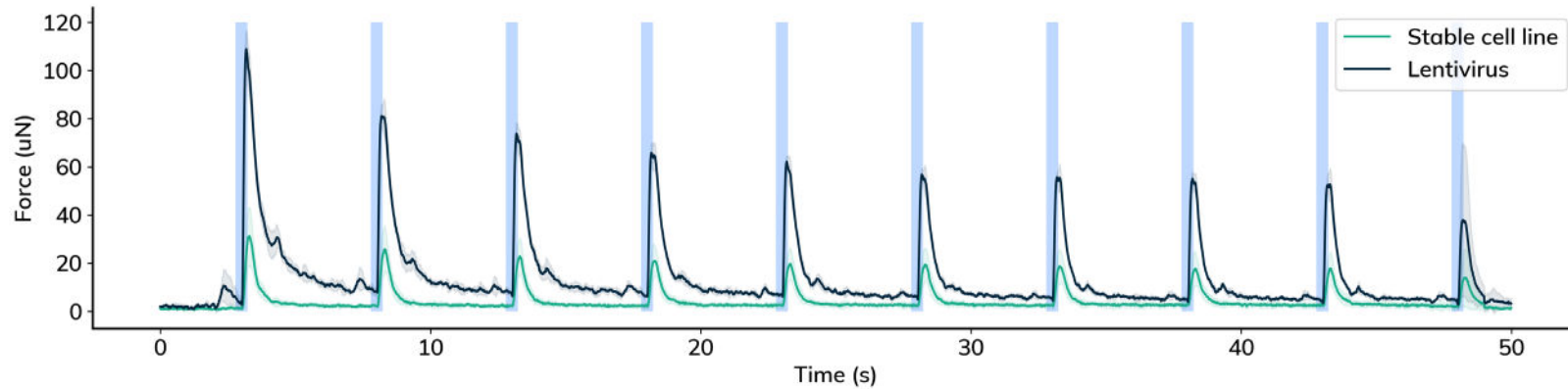
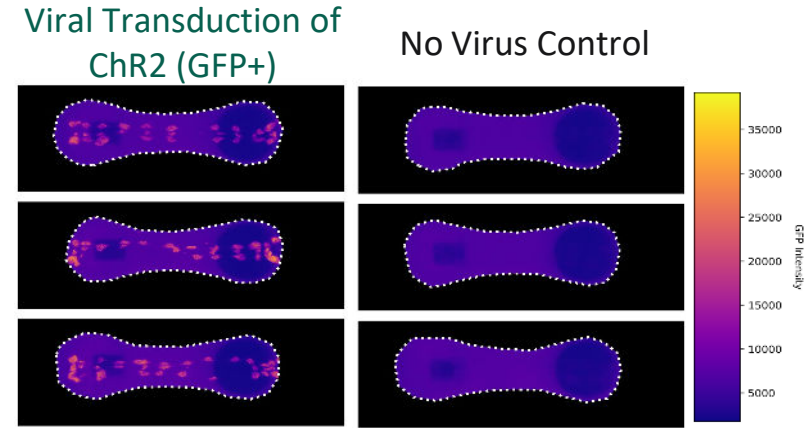
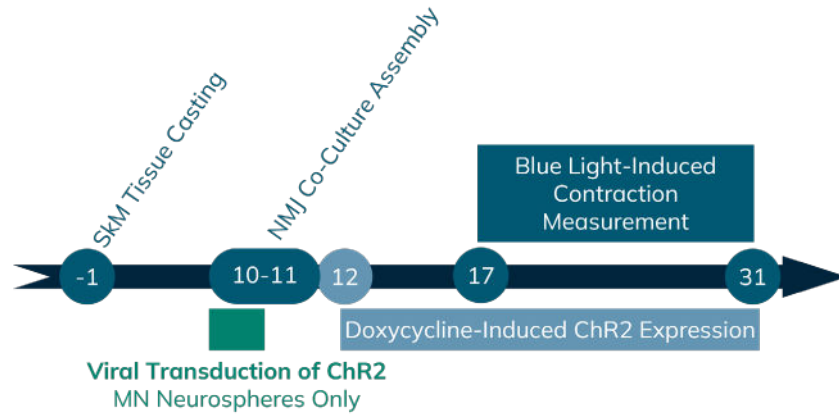
Day 13  
(2 DPT)



Day 21  
(11 DPT)



# Viral Delivery of ChR2

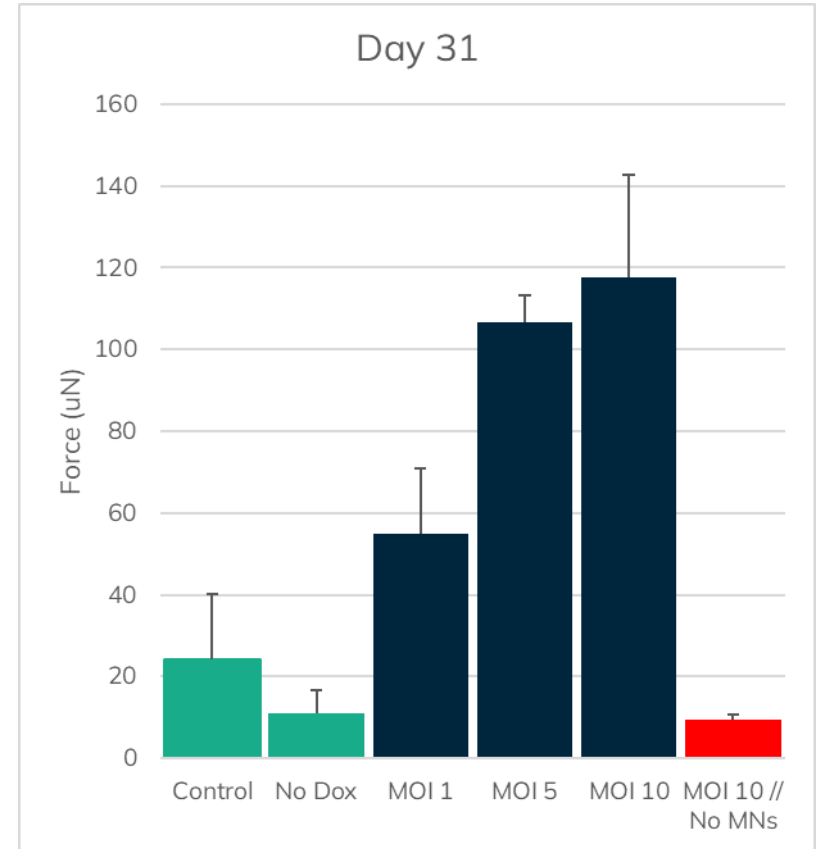
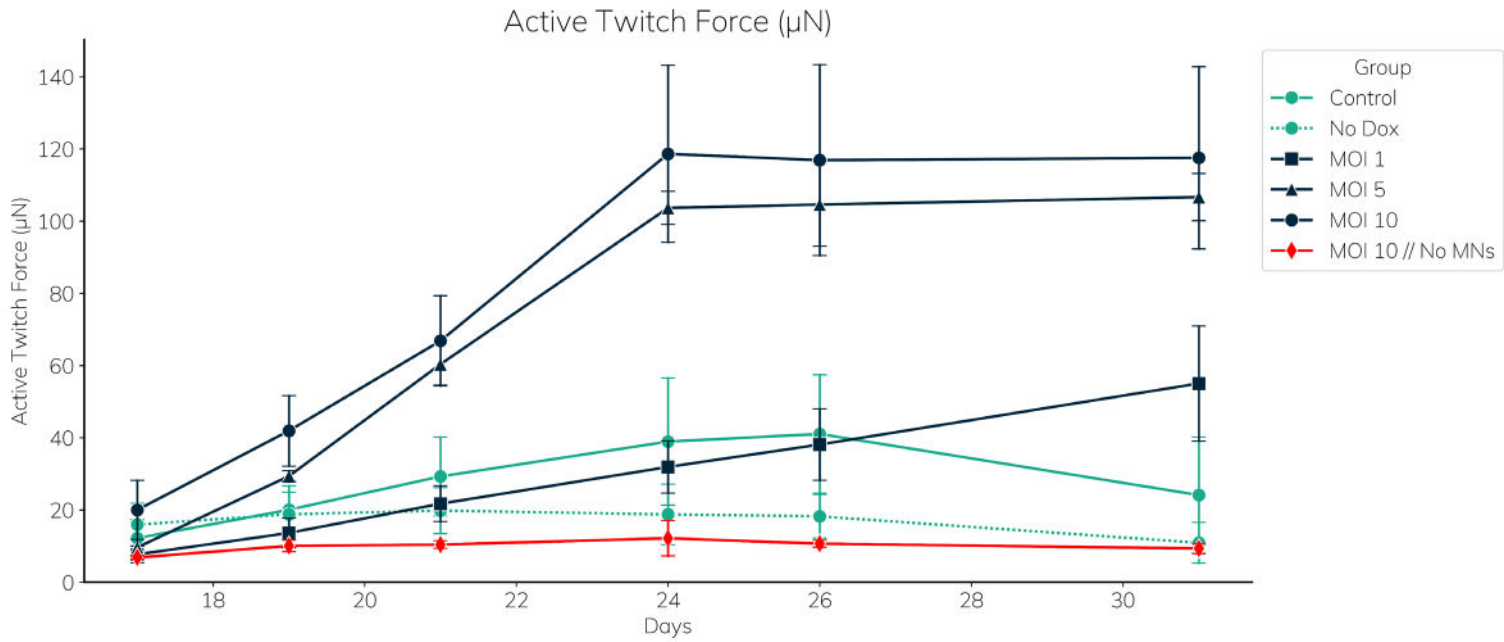


Viral delivery has the potential to hugely improve flexibility of the system to allow disease lines to be used

# Viral Delivery of ChR2



Blue light

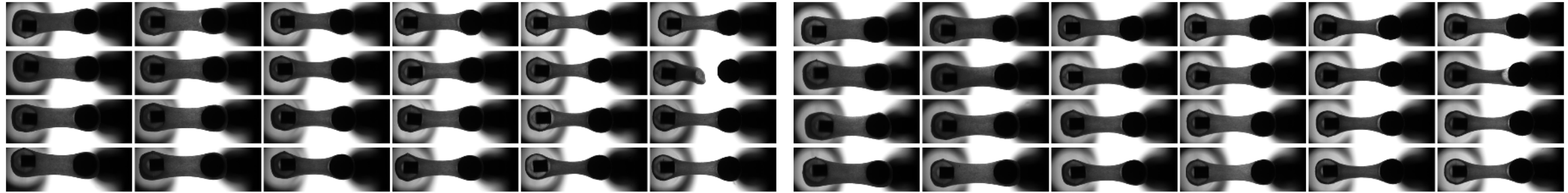


# Tissue images

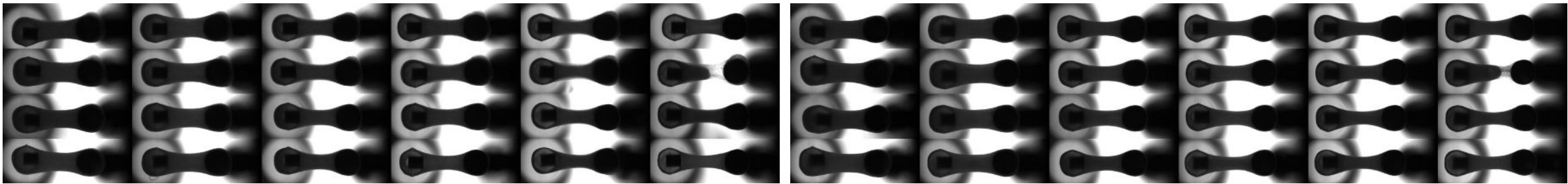
Plate 1

Plate 2

Day 10



Day 28





integrates human stem cell derived **cells**,  
with tissue-specific **systems**, to generate  
human-relevant **data**

improves prediction of safety and efficacy

reduces reliance on animal testing

accelerates development by eliminating  
unsafe projects early

enables discovery with predictive models of  
human disease



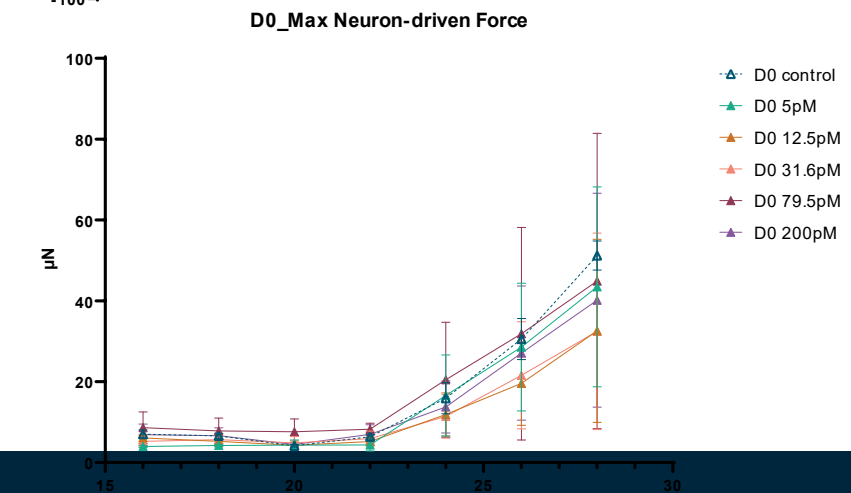
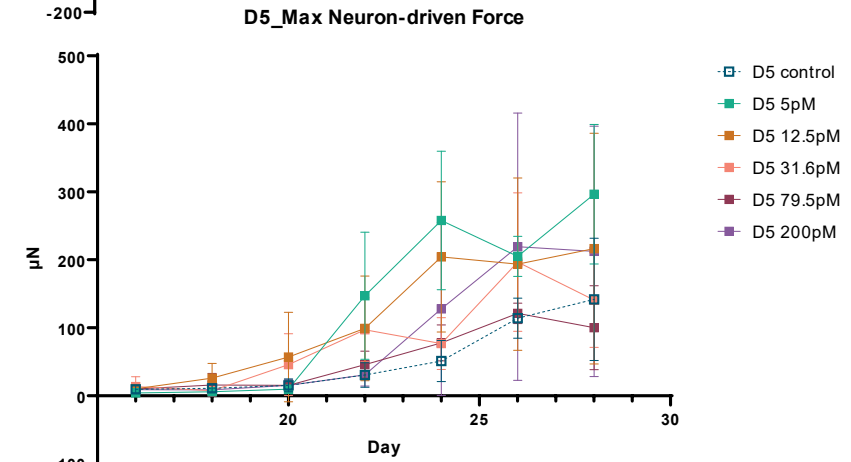
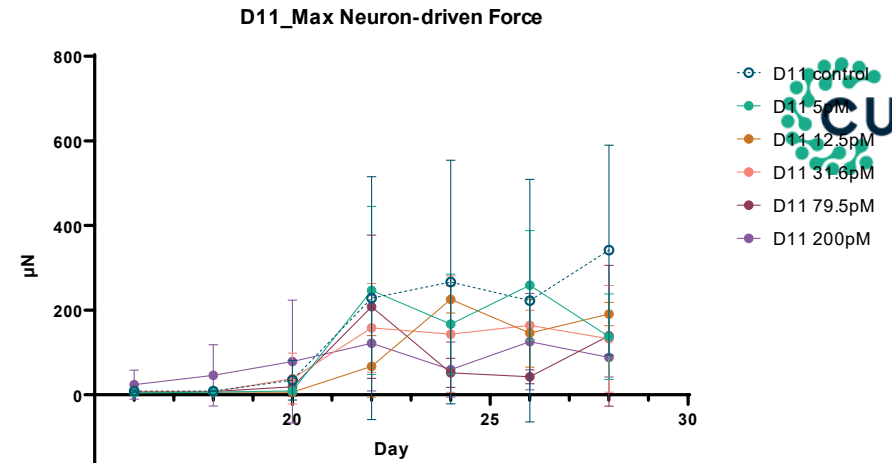
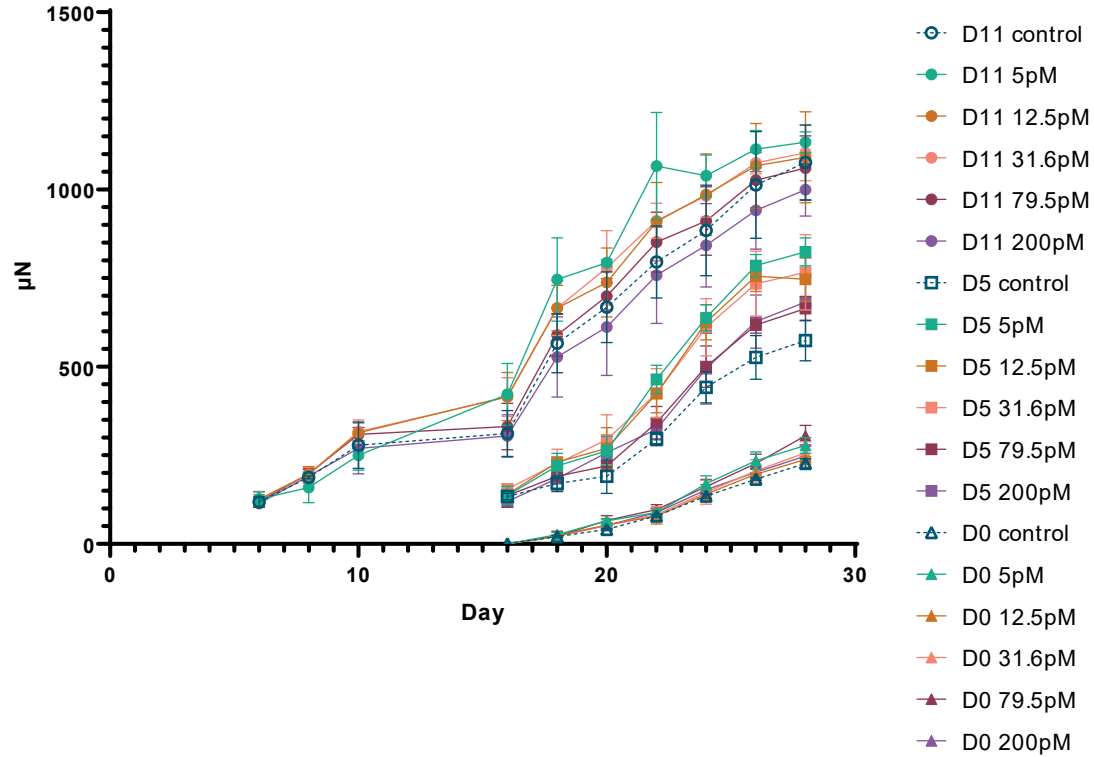
Contact Curi Bio

Curi Bio, Inc.  
[contact@curibio.com](mailto:contact@curibio.com)

# PRIMARY SKM MODEL



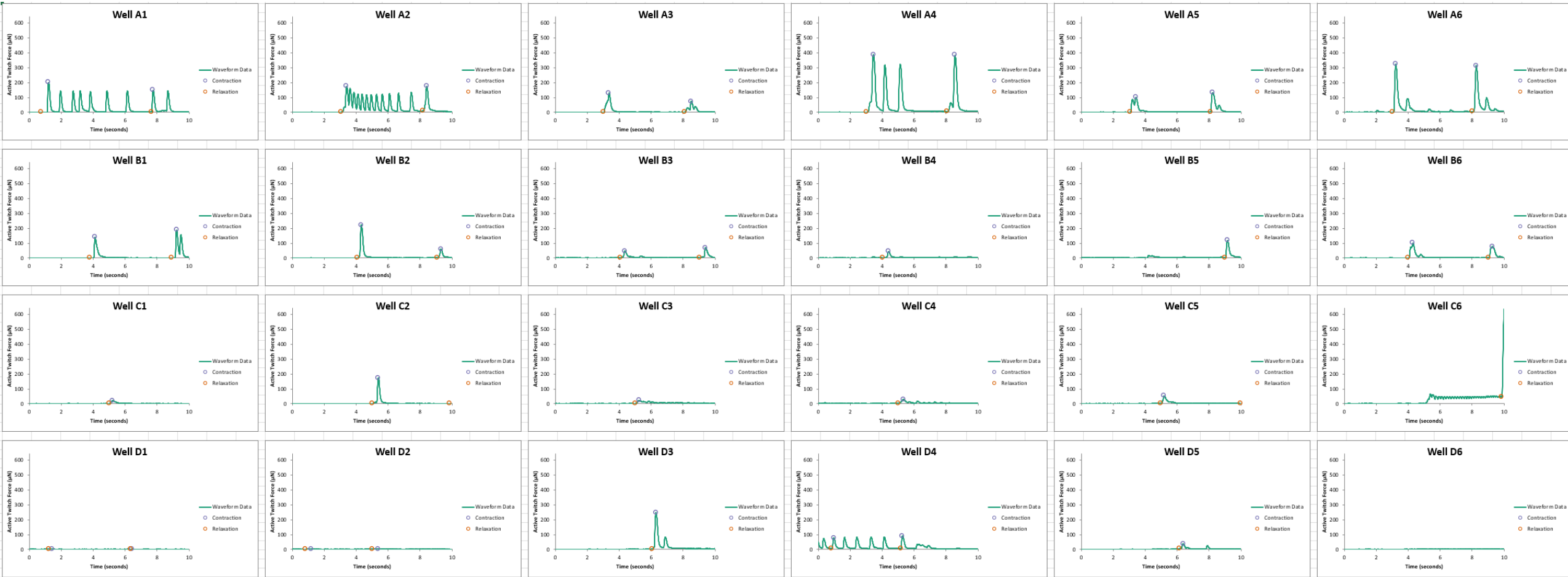
Max Active Twitch Force



# PRIMARY SKM MODEL



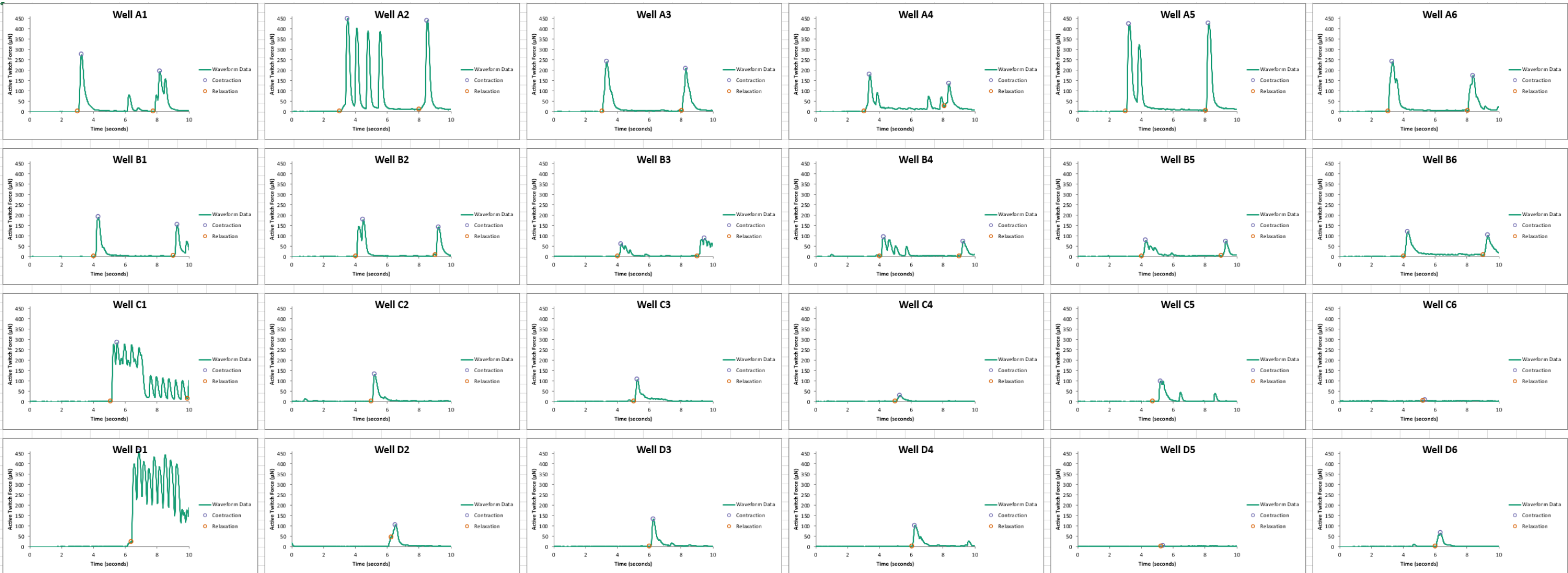
## Plate 1



# PRIMARY SKM MODEL



## Plate 2



# PRIMARY SKM MODEL



## Plate 3

