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Embryoid Body-based OCM for Cardiotoxicity Testing

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DOCTORAL STUDENT

DR. DAVID THREADGILL

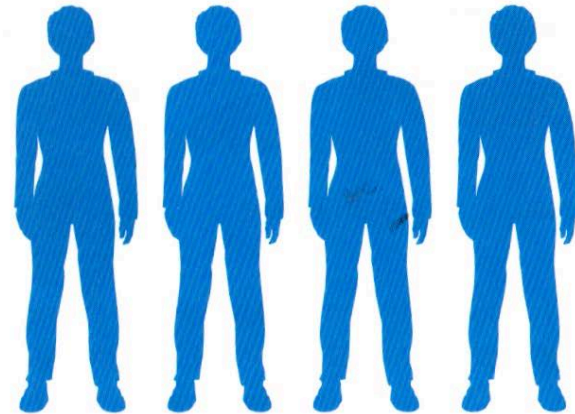
TEXAS A&M UNIVERSITY

03-11-17

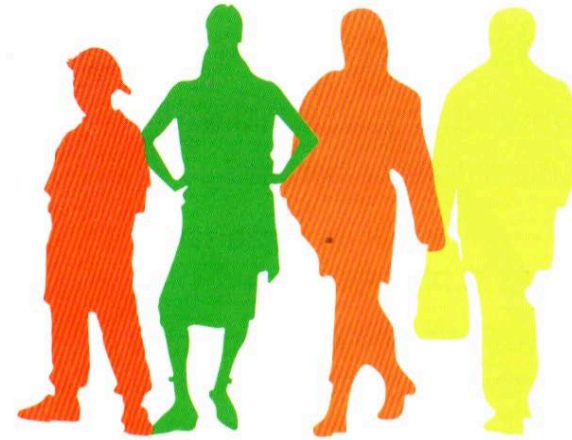


Population vs. Individual Response

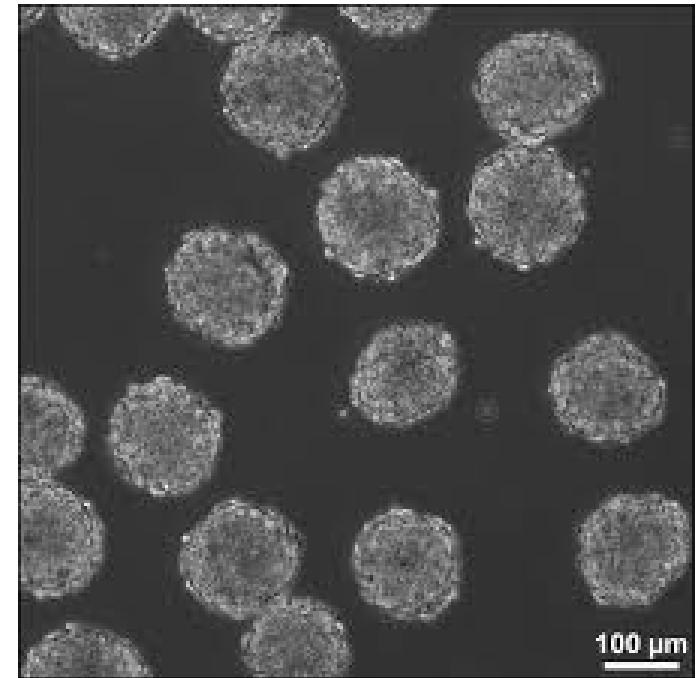
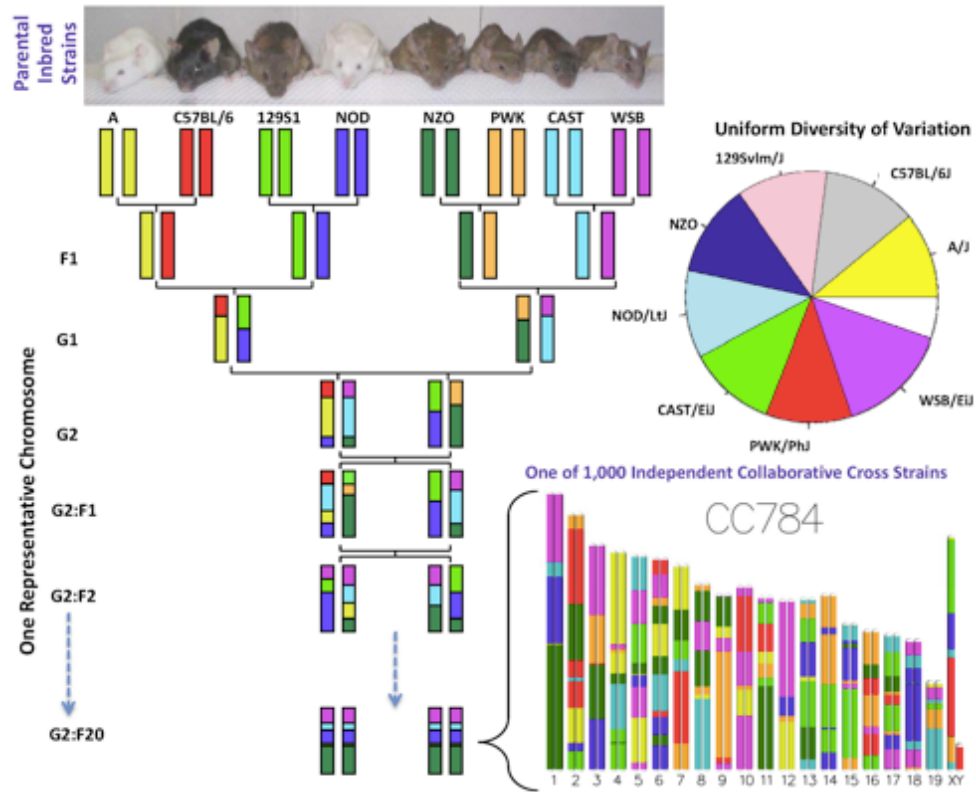
Group I



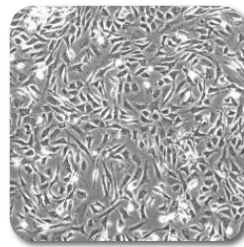
Group II



Collaborative Cross iPSC



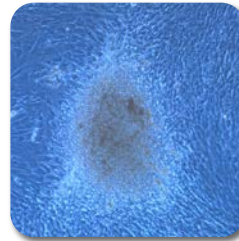
Project Overview



Mouse Embryonic
Fibroblasts



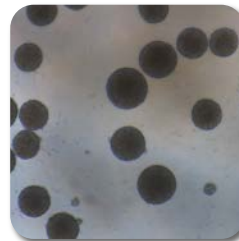
Reprogramming
(12 weeks)



Induced Pluripotent
Stem Cells



Differentiation
(2 weeks)

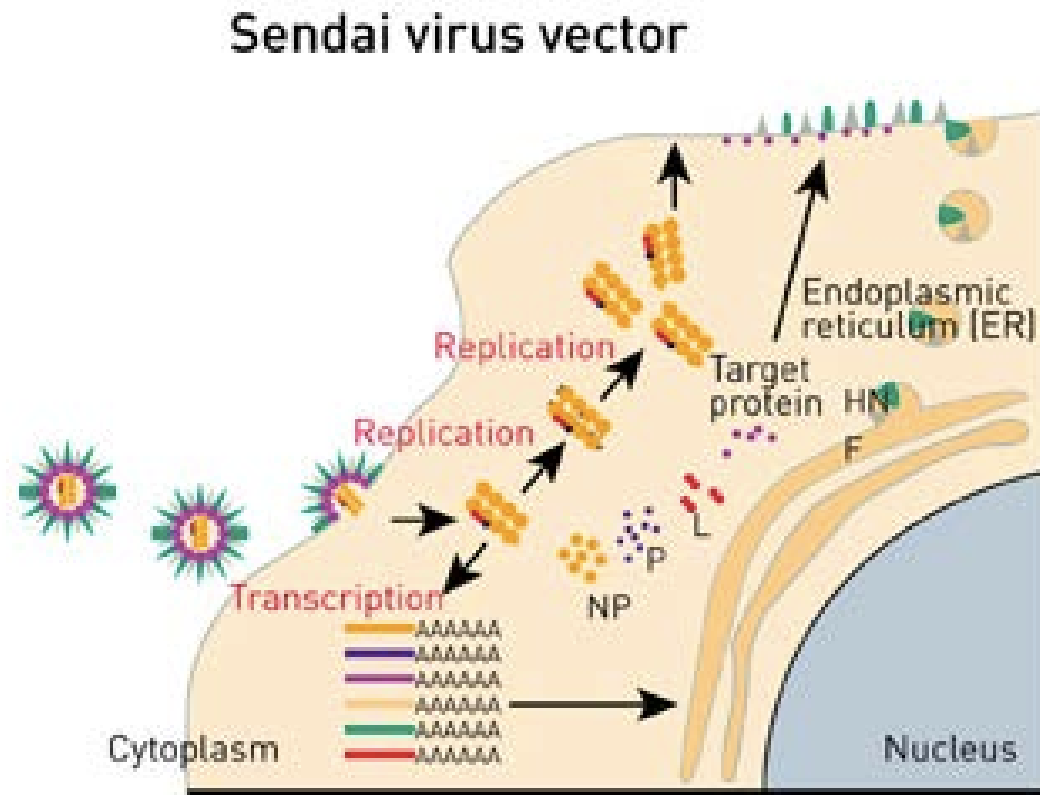
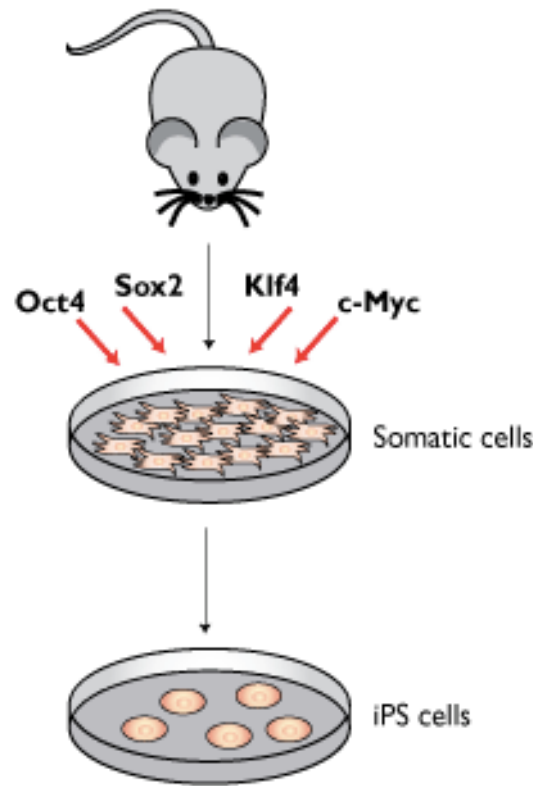


Contracting
Embryoid Body

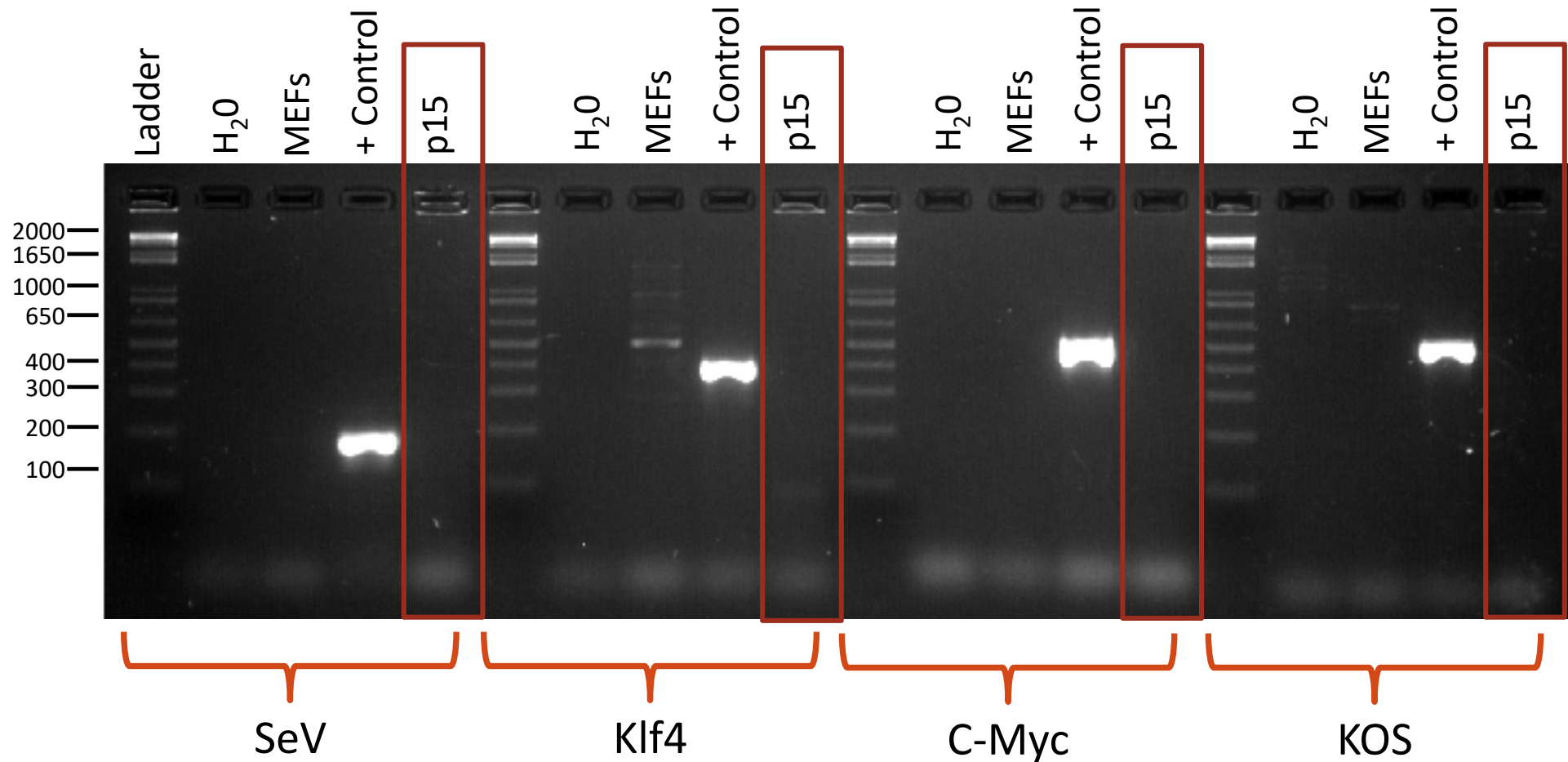


Chemical Application and
Quantitative Measurements

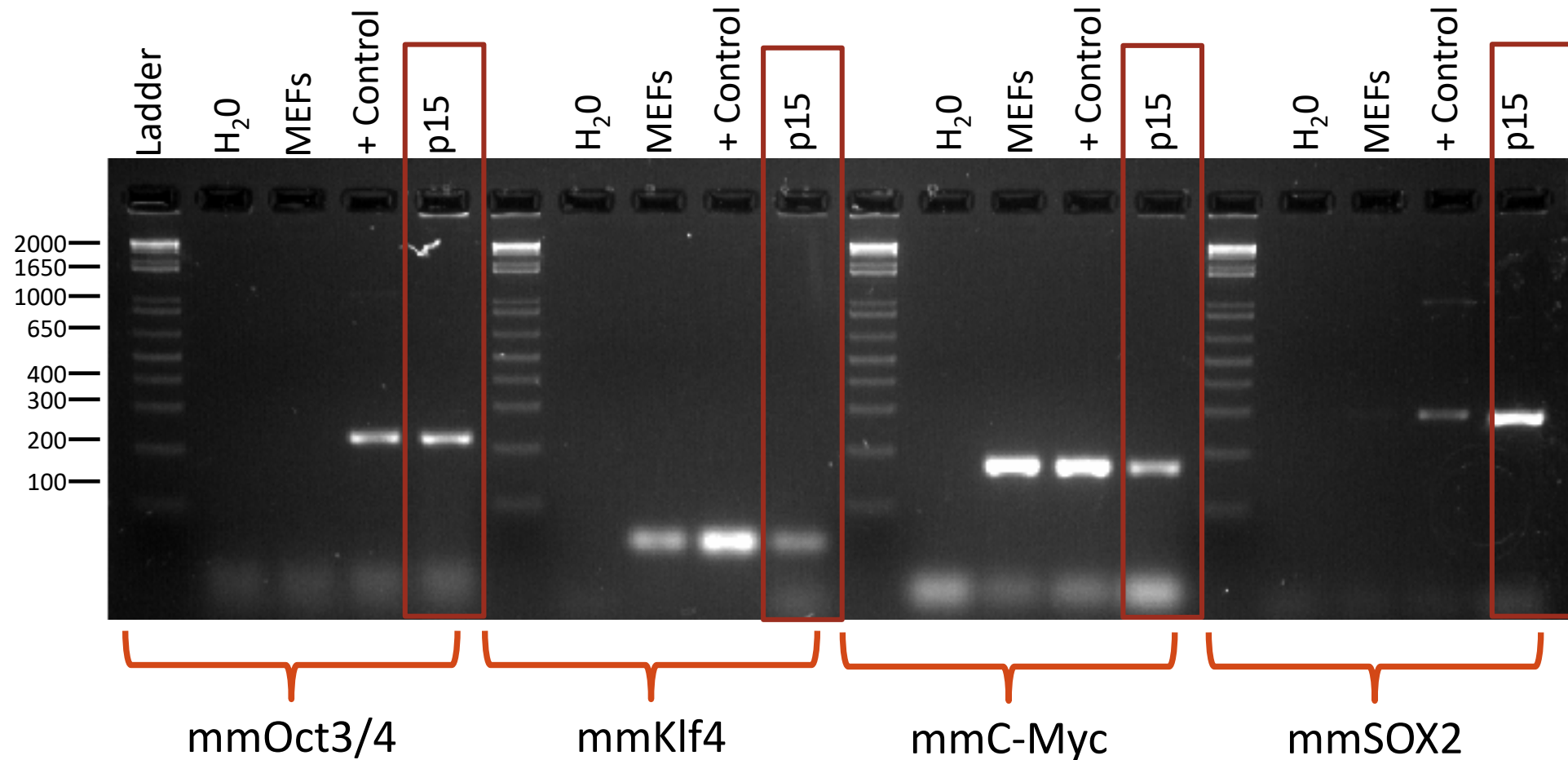
Induced Pluripotent Stem Cells (iPSCs)



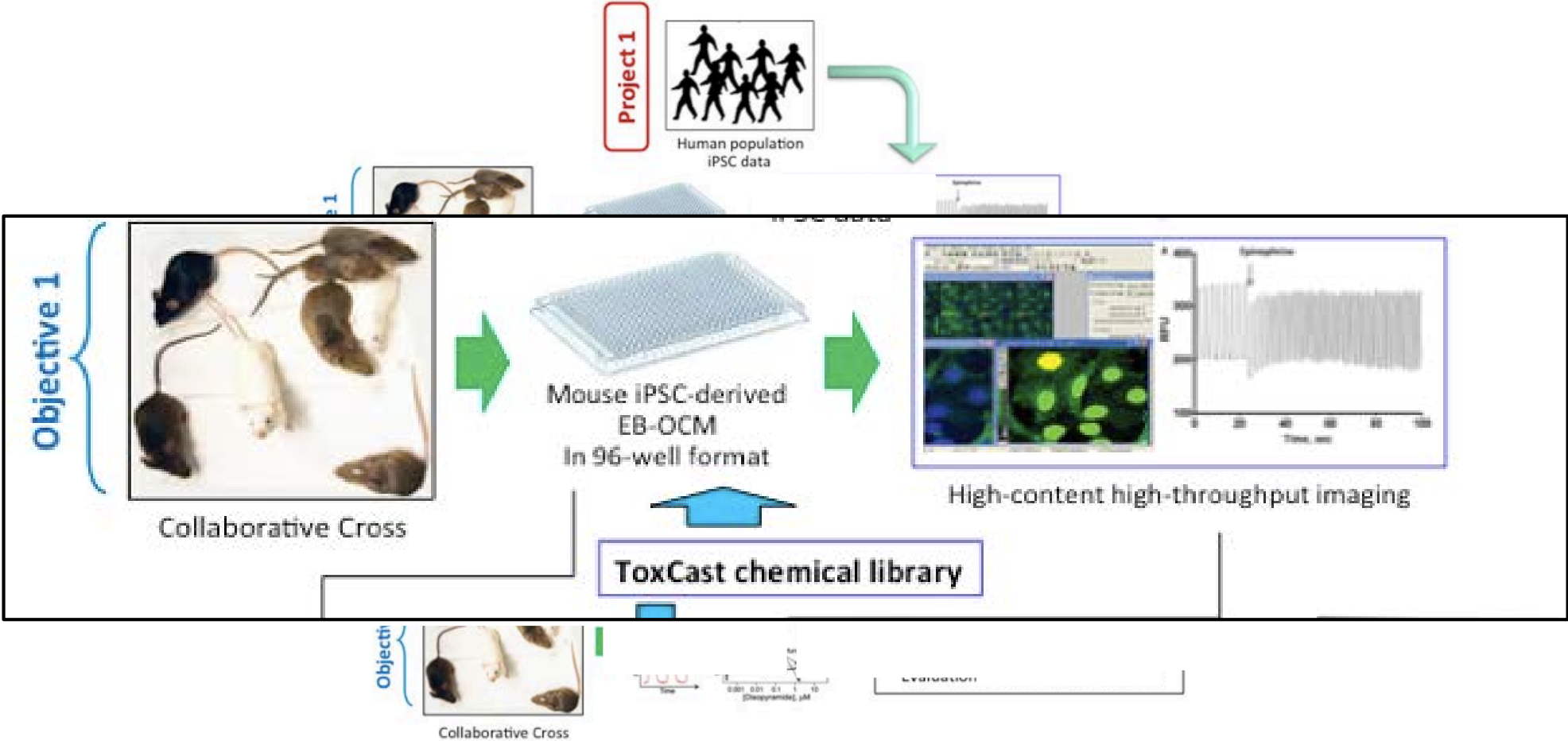
Clearing Sendai Virus



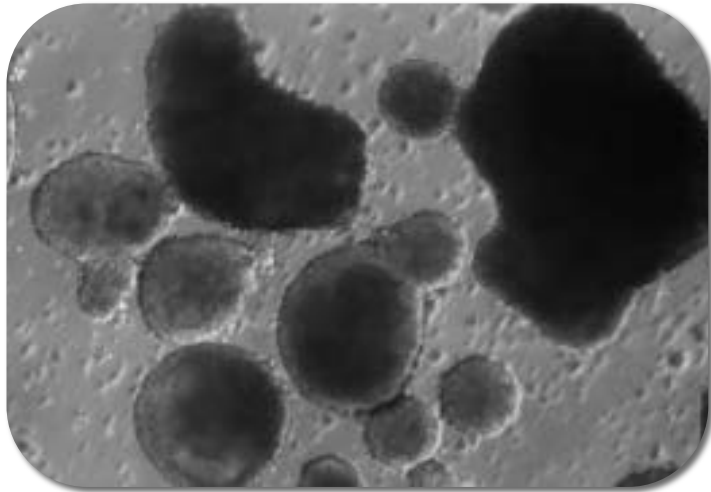
Endogenous Expression of Stem Cell Markers



Project Goal



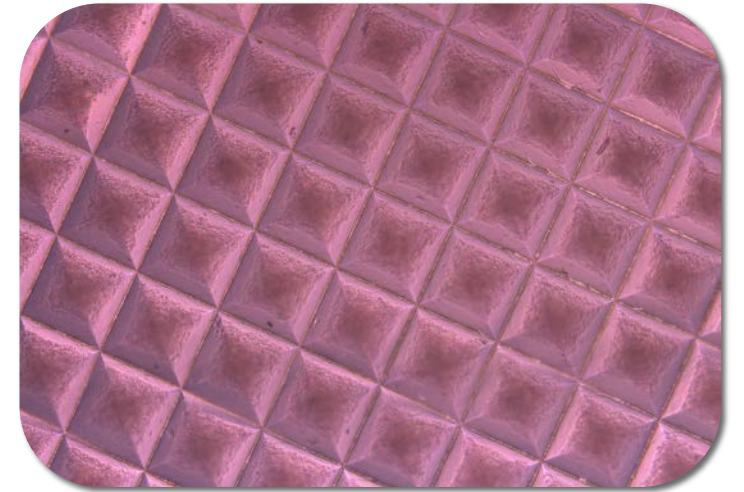
Embryoid Body Formation



Suspension Culture



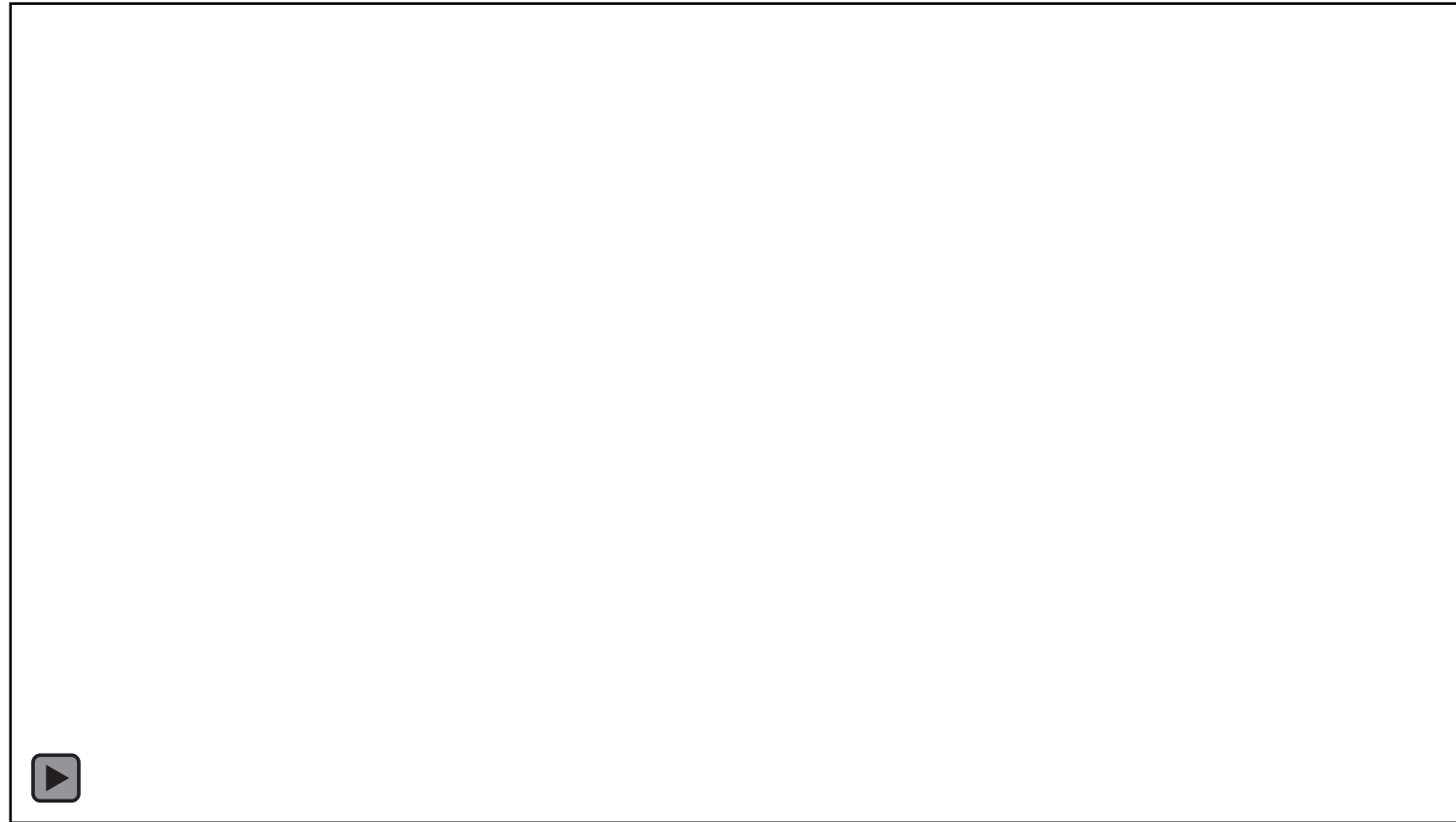
Hanging Drop



Aggrewell

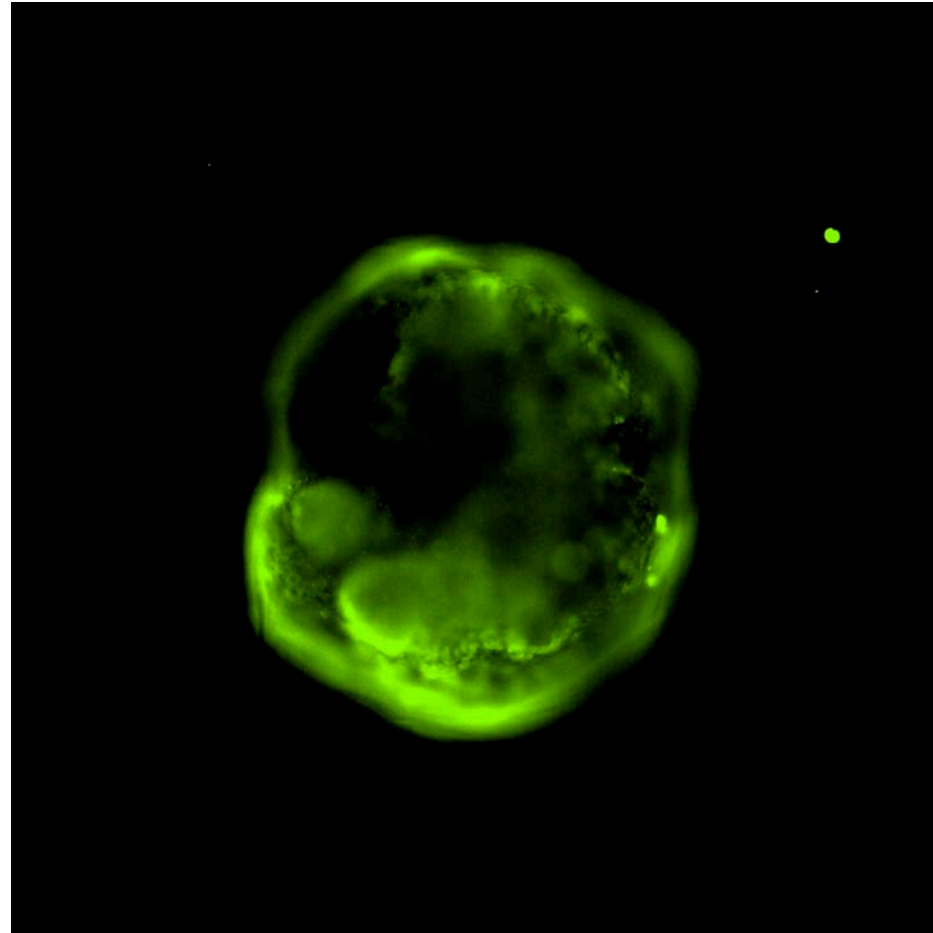


Contracting Embryoid Bodies





Calcium flux





Current Progress

iPSCs

- 48 CC lines
- 23 lines transduced

Embryoid Bodies

- Toxicity Screening

In vivo Studies (Project 1 toxins)

- Sematilide
- Chloroquine
- Sotalol
- Disopyramide phosphate
- N-acetylprocainamide

Current Progress

iPSCs

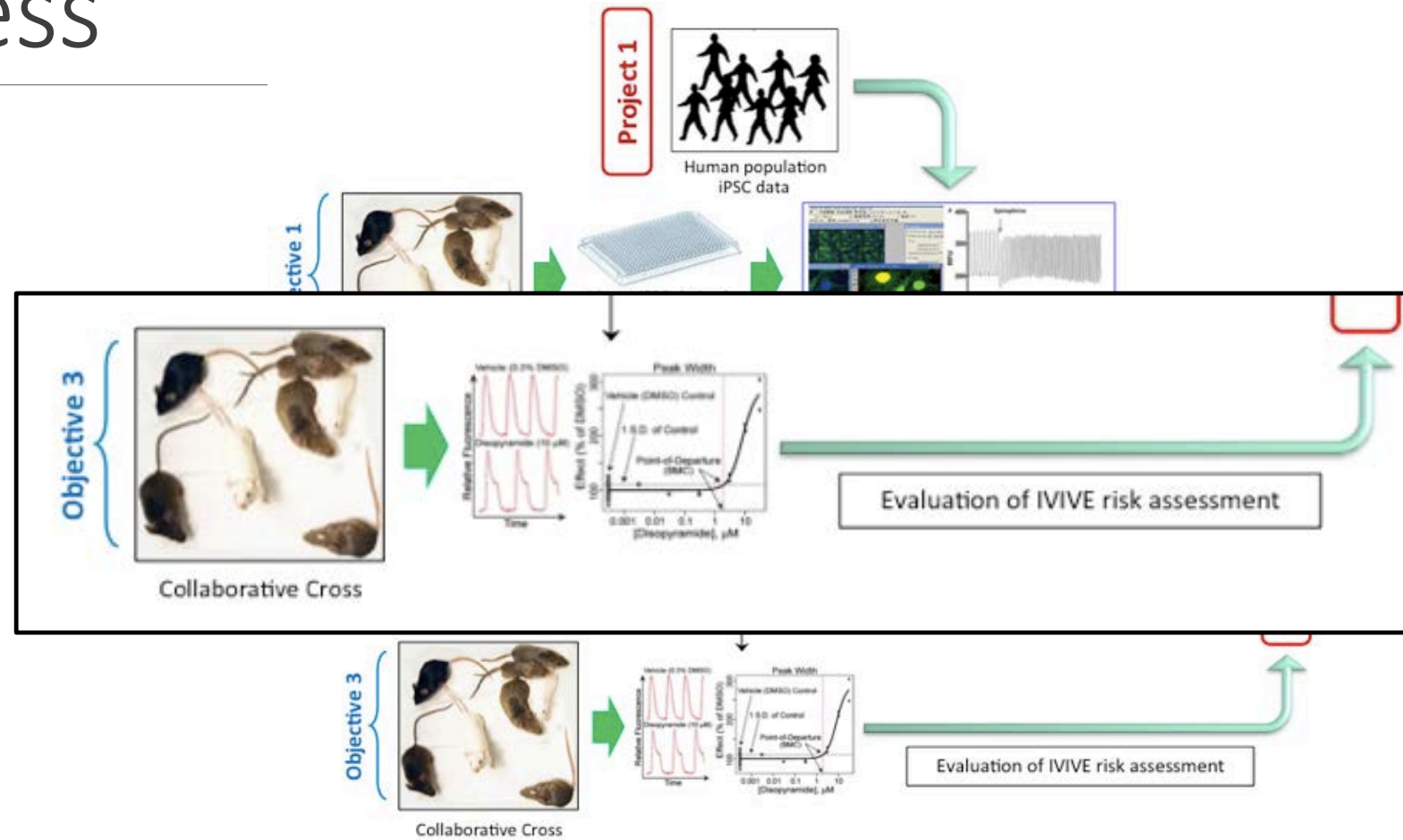
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Questions?

