

# *In vitro* assays

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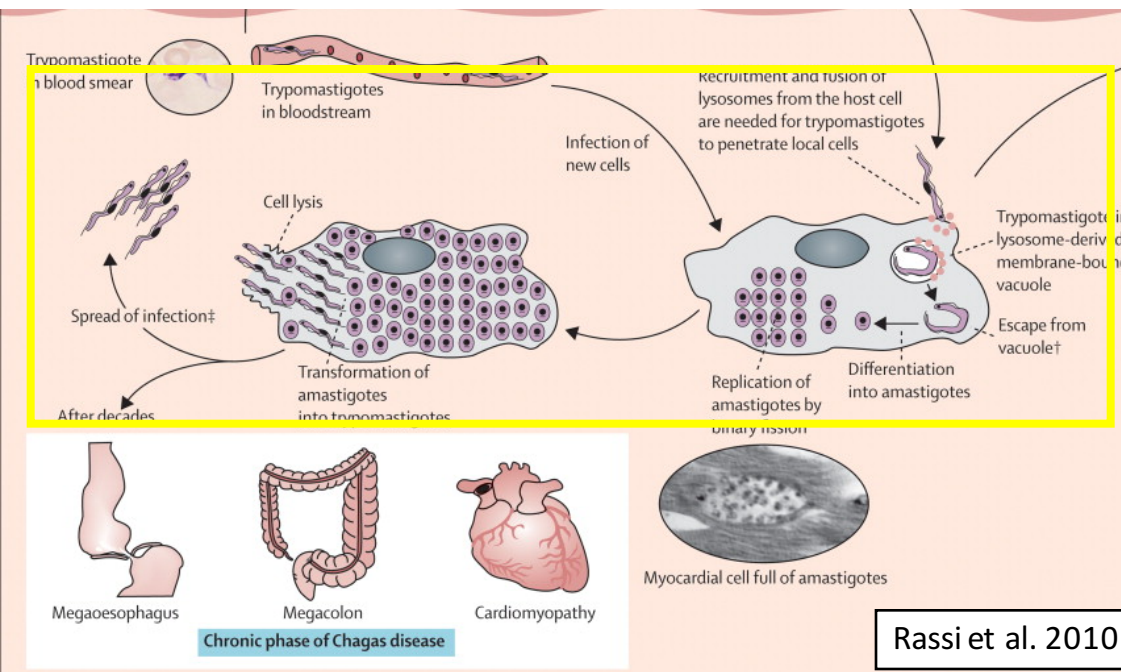
Chagas Clinical Research Platform

# In vitro assays for Chagas disease drug discovery

Simple and Robust

And yet

Reproduce disease complexity and be predictive



Parasite biology

Genetic diversity of  
*Trypanosoma cruzi* strains

Effective drug for the acute and  
chronic phases

What we can measure in vitro

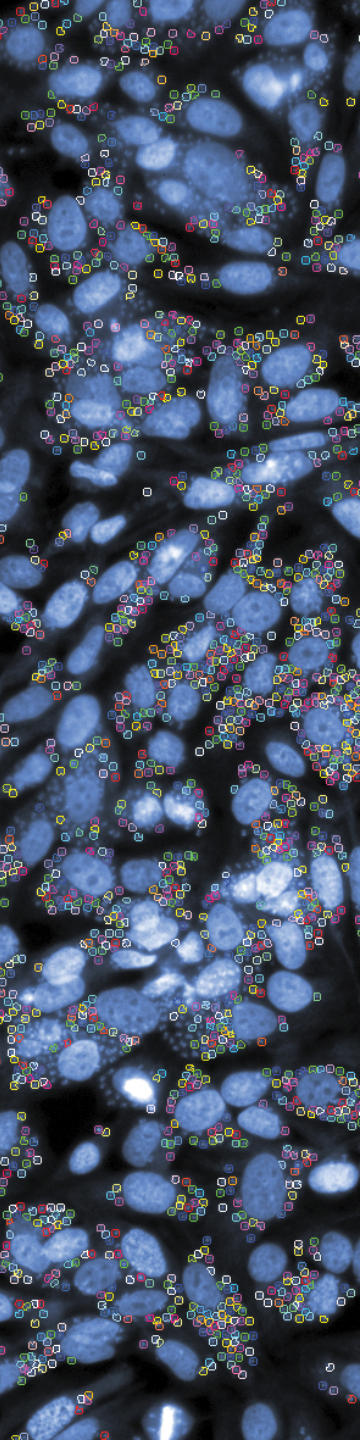
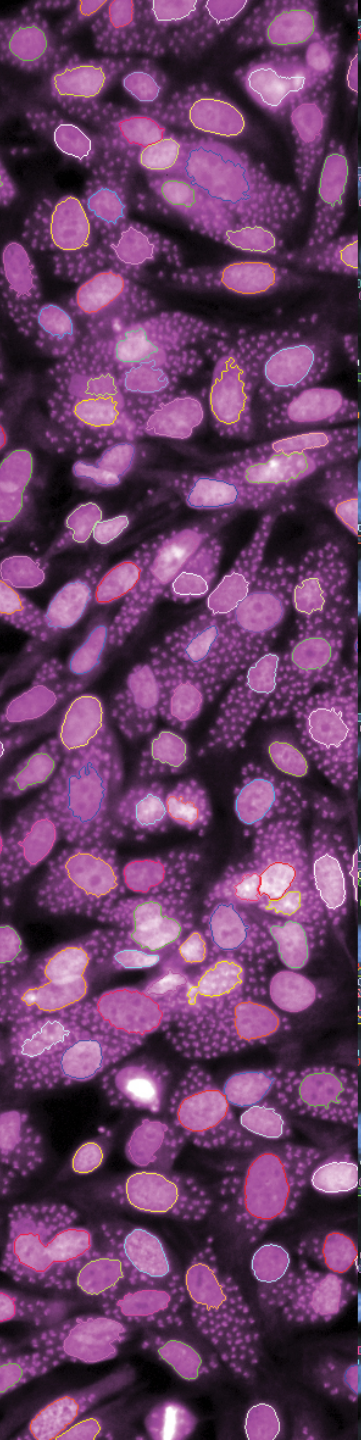
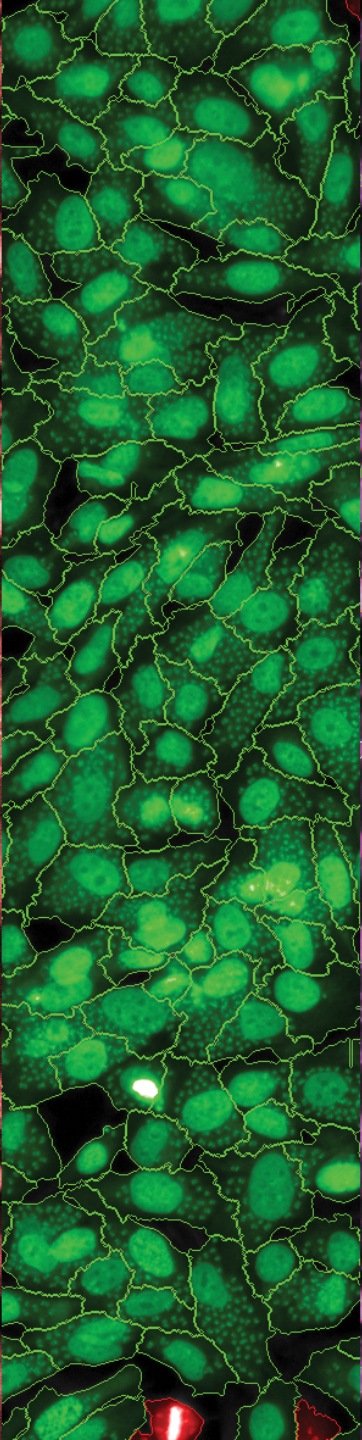
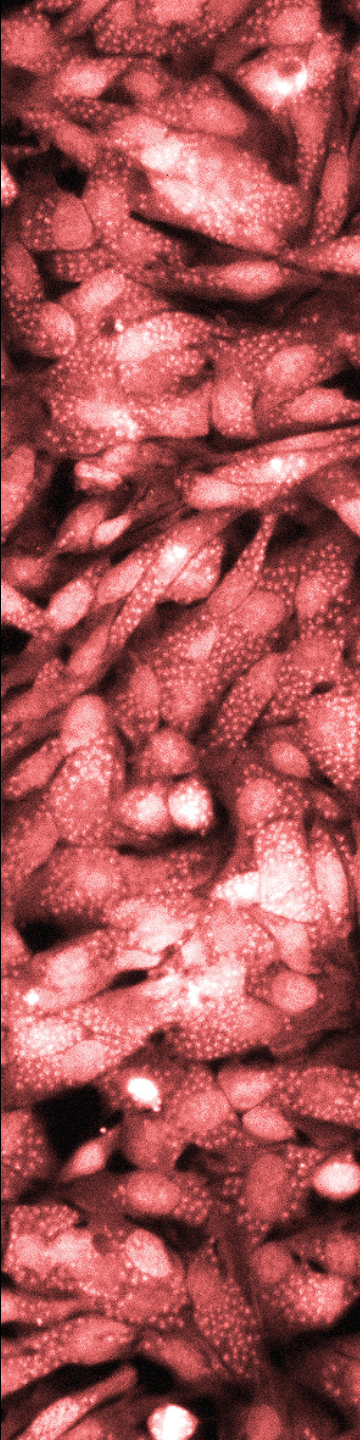
- Potency
  - Efficacy
  - Combinatory effects
- \*\* Assay Endpoints\*\*

# State-of-art: Technologies for In vitro Assays

- Medium to High Throughput Screening:
  1. High Content Screening (HCS) ★★ ★
  2. Beta-gal/Colorimetric screening (Tulahuen strain)
- Low Throughput Screening
  1. Intracellular amastigote screening
  2. Epimastigote screening (need to confirm)

Results/numbers are often assay-dependent! Need to compare to reference compounds







# When to use your assay(s)

## Primary Screening

*Primary and counterscreening assays*

HITS

HIT to Lead

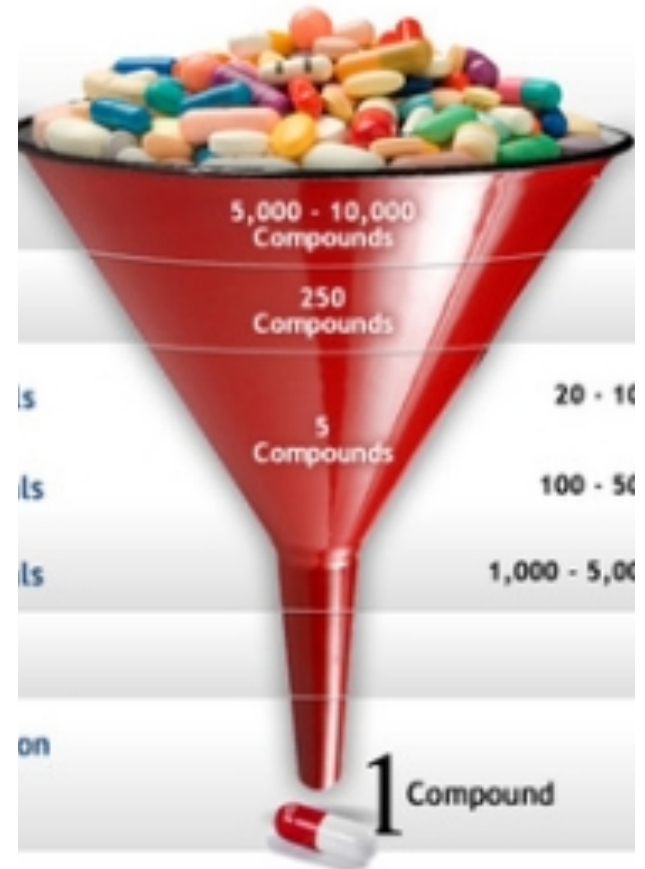
Time-kill

Cidal-  
static/reversibility

Strain panel

Trypomastigotes

Lead Optimization



# Drug efficacy across *Trypanosoma cruzi* groups

