



Bringing **Hope** for the 10 Million People Infected with Life-threatening Kinetoplastid Parasites

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Neglected Tropical Diseases

Neglected tropical diseases (NTDs) are a diverse group of diseases that thrive mainly among the poorest populations.

17 NTDs prioritized by WHO affect more than 1.4 billion people:

Protozoa

Chagas disease

Human African trypanosomiasis
(sleeping sickness)

Leishmaniasis

Helminth

Cysticercosis/Taeniasis

Dracunculiasis (guinea-worm
disease)

Echinococcosis

Foodborne trematodiases

Lymphatic filariasis

Onchocerciasis (river blindness)

Schistosomiasis

Soil-transmitted helminthiases

Bacteria

Buruli ulcer

Leprosy (Hansen disease)

Trachoma

Yaws

Virus

Dengue and Chikungunya

Rabies





CDIPD

RESEARCH
EDUCATION
AWARENESS

CENTER FOR DISCOVERY AND INNOVATION IN PARASITIC DISEASES

The image shows a screenshot of the CDIPD website. At the top left is the CDIPD logo with the tagline "RESEARCH. EDUCATION. AWARENESS". At the top right is a navigation menu with links: Home (underlined), About Us, Our Work, Collaborations, and Press. The main title "Center for Discovery and Innovation in Parasitic Diseases" is displayed prominently in white text over a background image of a modern building with many windows. On the left side, there is a portrait photo of James McKerrow, a man with glasses and a mustache, and his name is written above it.

James McKerrow

**Center for Discovery and
Innovation in Parasitic
Diseases**

Filling the Innovation Gap

The image shows the homepage of the Center for Discovery and Innovation in Parasitic Diseases (CDIPD). The header features the CDIPD logo and navigation links: Home, About Us, Our Work, Collaborations, Resources, Press, How to Help, and Contact us. The main title "Center for Discovery and Innovation in Parasitic Diseases" is overlaid on a photograph of a rocky cliff under a blue sky. On the left, a sidebar contains the center's name and social media icons (Facebook, Twitter, Google+, YouTube, LinkedIn). A green box highlights "Leishmaniasis" with details: Regions: South America, Africa, Middle East, Asia, Southern Europe; Afflicted: 12 million; At Risk: 350 million; Involved Since: 1997. To the right is a portrait of a young girl with braided hair and a red bindi.

www.cdipd.org

Amebiasis
Naegleriasis
Chagas Disease
Leishmaniasis
Sleeping Sickness
Schistosomiasis
Hookworm
Filariasis
Onchocerciasis

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Collaborations





Technology

Screening Platform



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Screening Platform



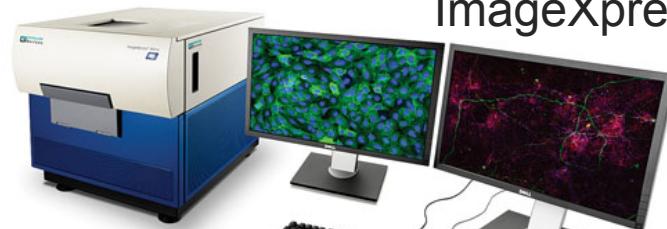
Robotic Arm



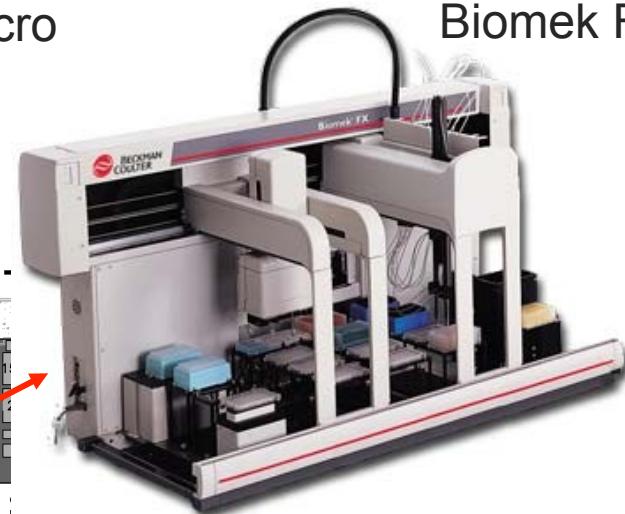
ATS



ImageXpress Micro



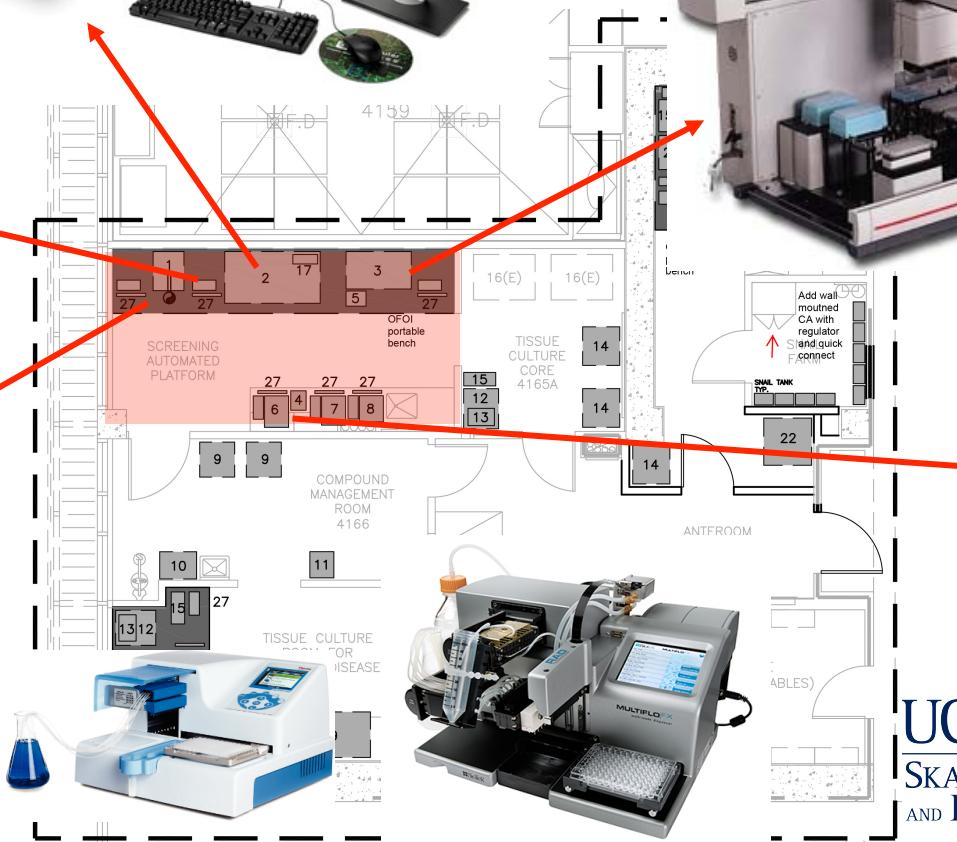
Biomek FX



Envision



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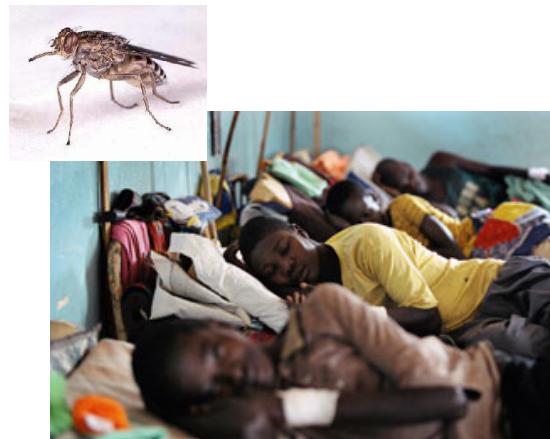




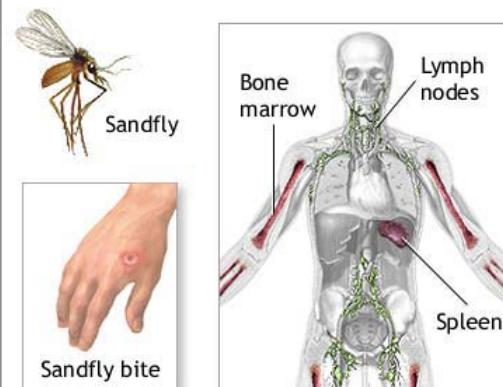
Disease Models

Neglected Diseases caused by Kinetoplastid Parasites

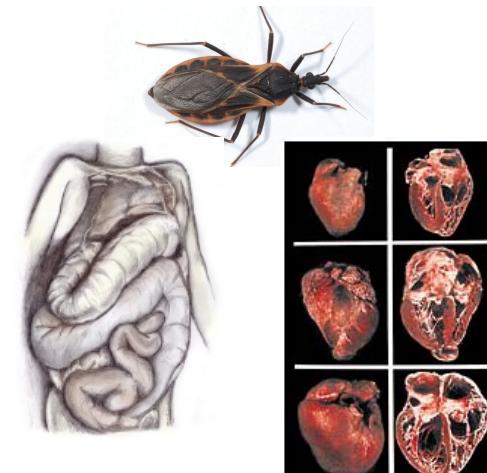
Sleeping Sickness



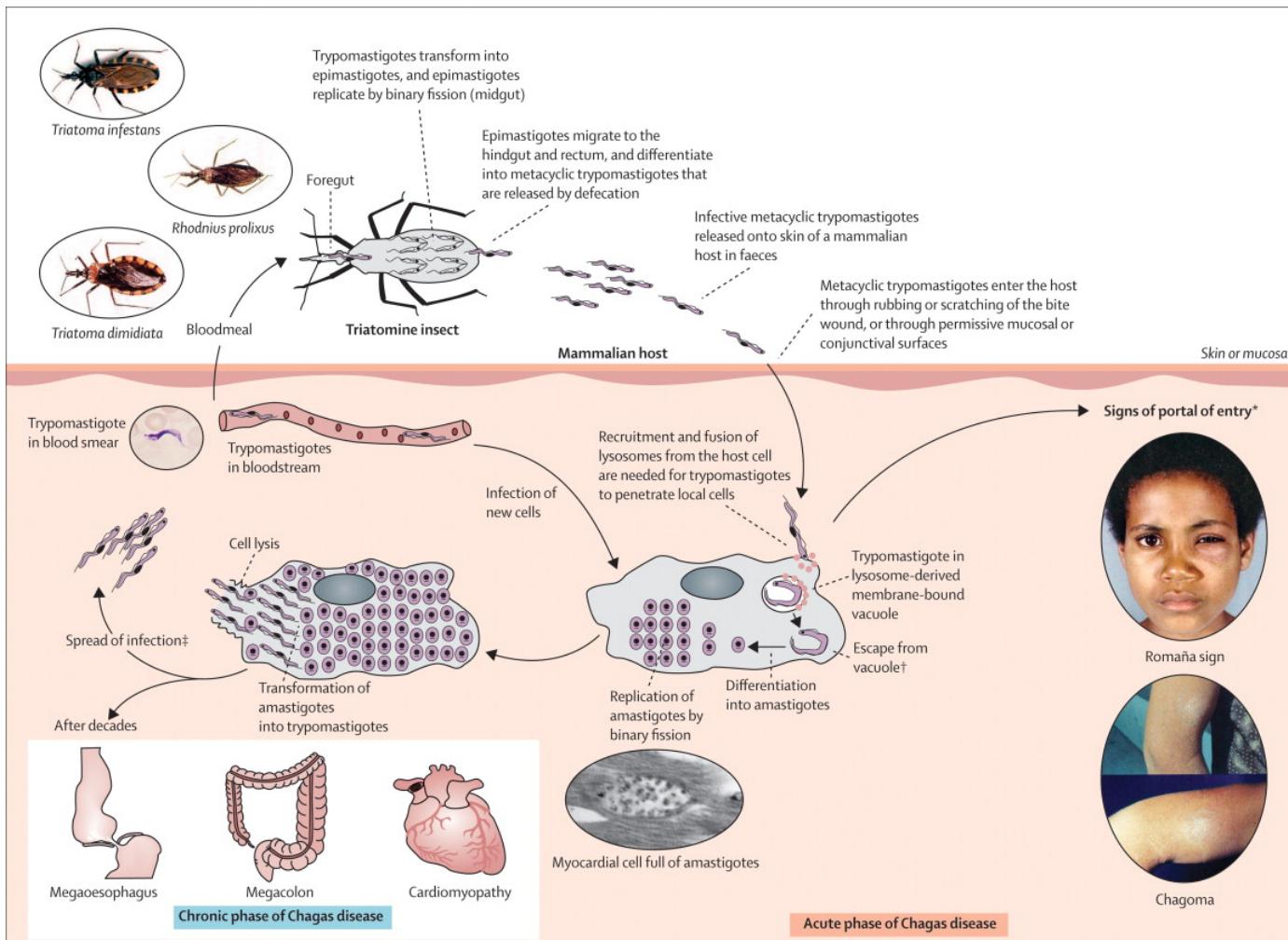
Leishmaniasis



Chagas Disease



Trypanosoma cruzi life cycle



Rassi et al, Lancet 2010

T. cruzi high-content screening assay

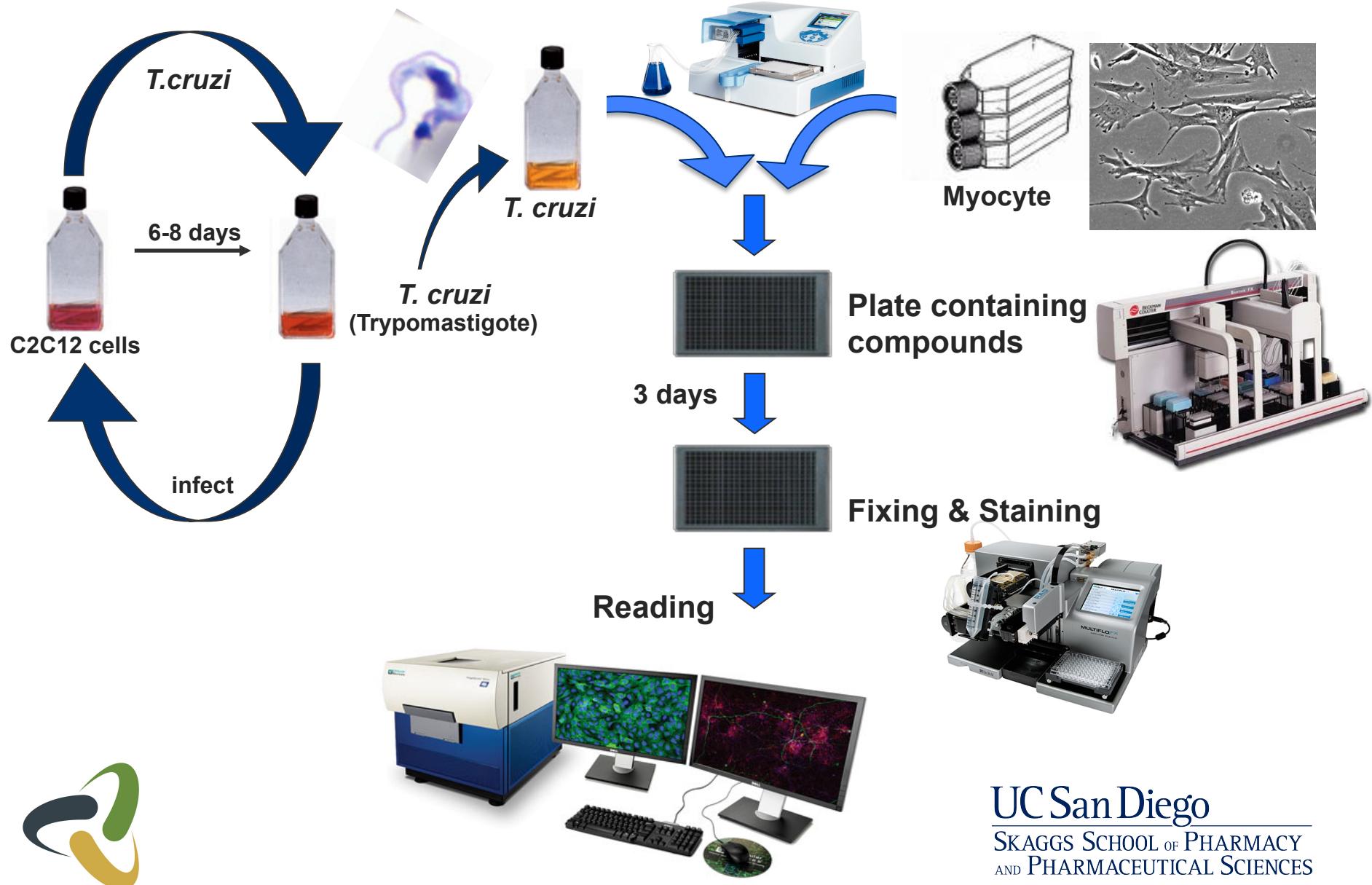
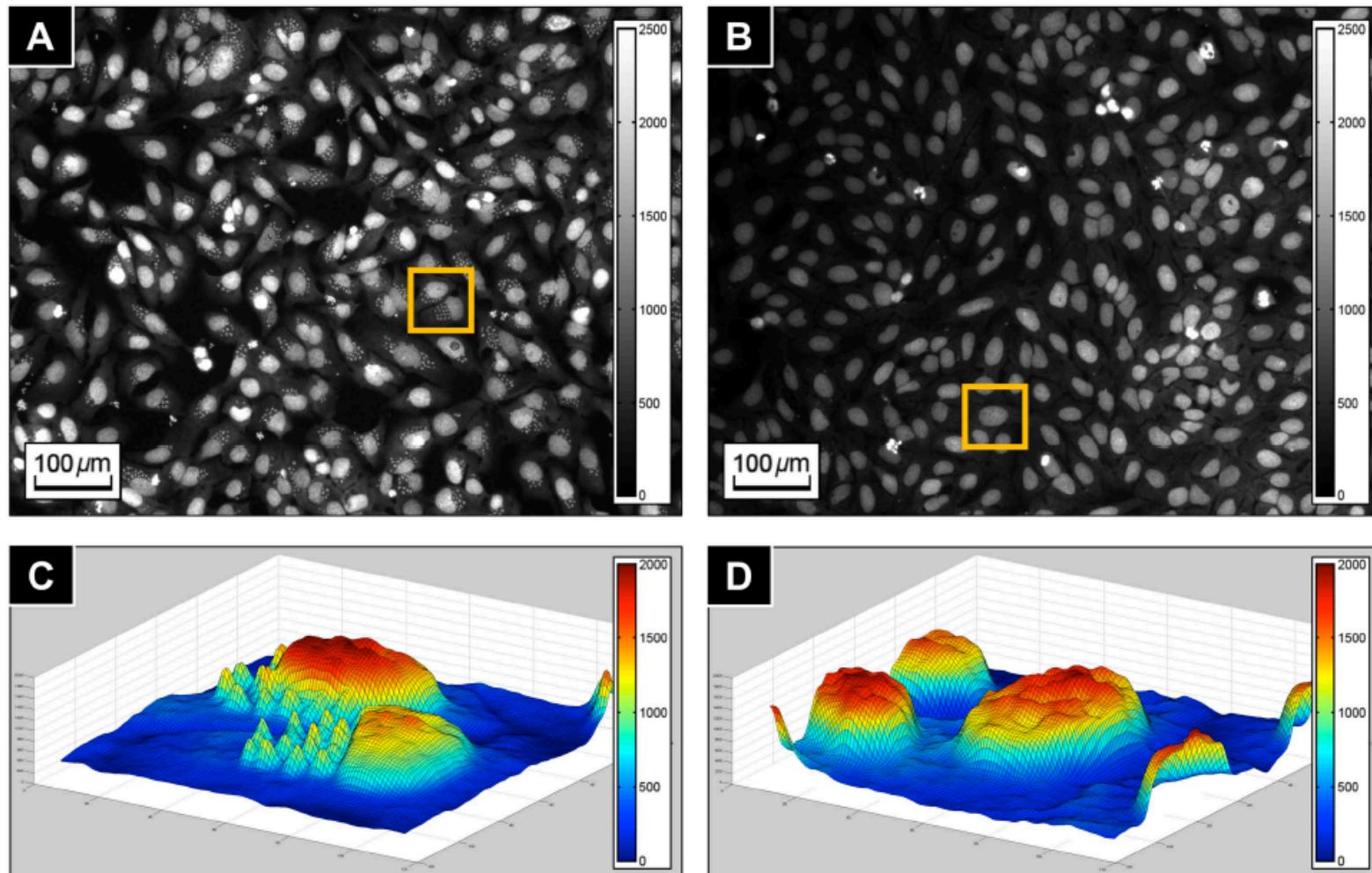


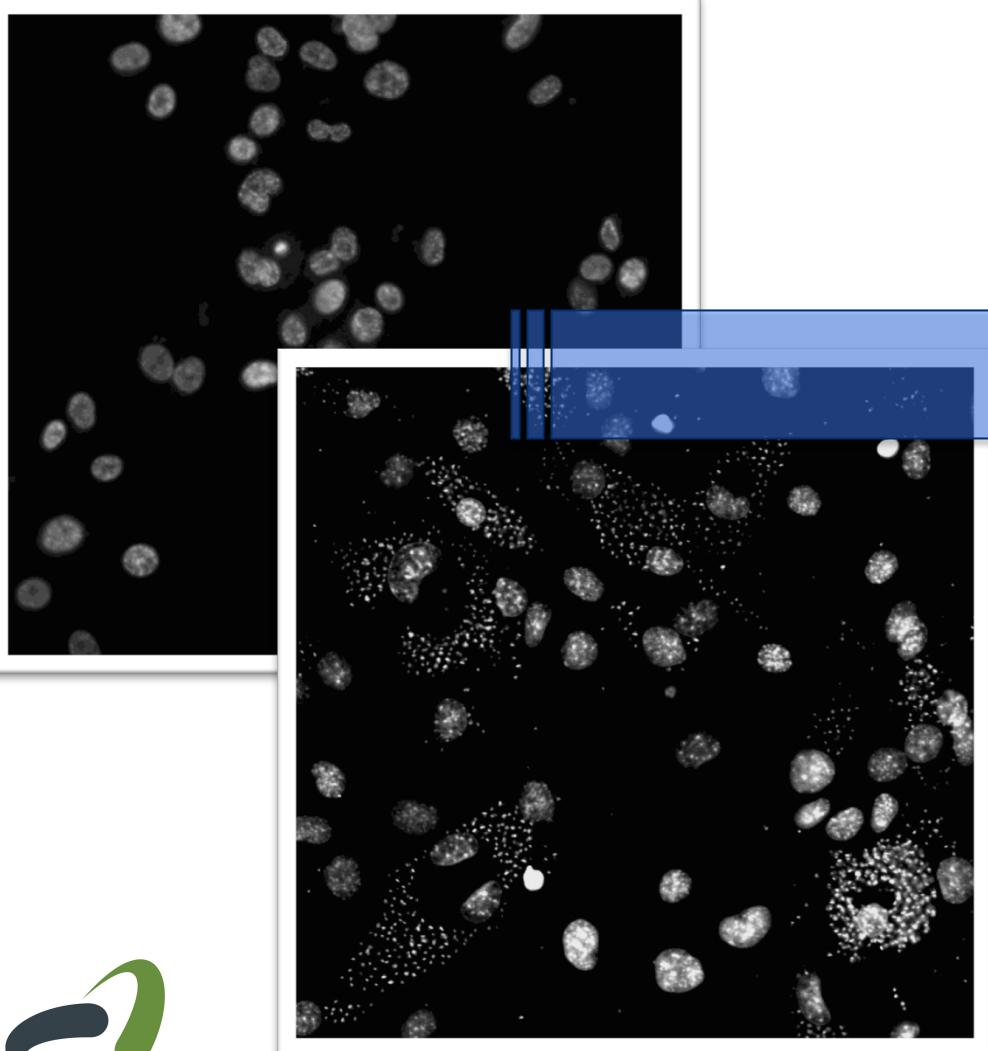


Image Analysis



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Image analysis for efficacy assessment



IMAGES



A large blue arrow points from the images on the left to the Excel spreadsheet on the right.

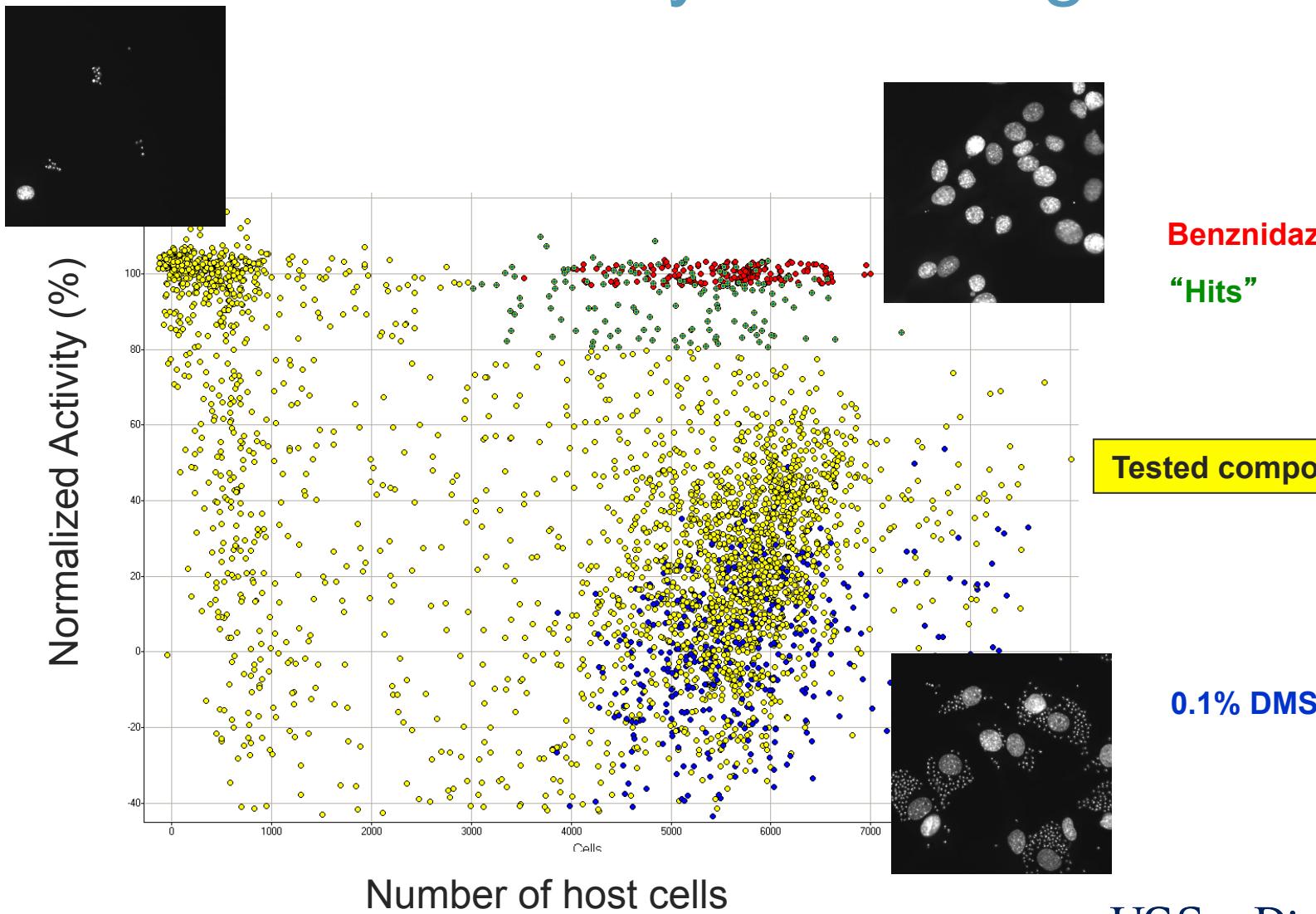
Wells	Plate	Cells	Parasites	InRatio	Description	NormActivity	CellRatio
30	B - 1	04 - TM73	7870	77195.874	9.80887853 DMSO	-16.4578416	1.06399878
31	B - 2	04 - TM73	7624	89256.514	11.7073077 DMSO	-2.8625651	0.13074037
32	B - 3	04 - TM73	261	1708.105	6.5444636 cpd	49.679952	0.03528636
33	B - 4	04 - TM73	654	15708.074	24.0184618 cpd	-128.15378	0.0884187
34	B - 5	04 - TM73	3640	125755.086	34.5481005 cpd	-235.31443	0.49211634
35	B - 6	04 - TM73	928	89198.879	96.1194817 cpd	-861.92939	0.12546263
36	B - 7	04 - TM73	3793	77317.578	20.384281 cpd	-91.168547	0.51280145
37	B - 8	04 - TM73	6423	57612.837	8.36977067 cpd	24.9974834	0.86836902
38	B - 9	04 - TM73	7745	62117.952	8.02039405 cpd	34.6593355	1.04709918
39	B - 10	04 - TM73	7987	81466.204	10.1998505 cpd	12.4789032	1.07981681
40	B - 11	04 - TM73	191	1564.086	8.18893194 cpd	32.9441173	0.02582259
41	B - 12	04 - TM73	6206	39927.102	6.43362907 cpd	50.8079205	0.83903131
42	B - 13	04 - TM73	6153	10748.862	1.74693028 cpd	98.5046834	0.83186588
43	B - 14	04 - TM73	613	4516.888	7.36849592 cpd	41.2937348	0.08287564
44	B - 15	04 - TM73	636	395.779	0.62229403 cpd	109.950162	0.08598516
45	B - 16	04 - TM73	5978	104131.961	17.4191972 cpd	-60.992744	0.80820645
46	B - 17	04 - TM73	7079	54710.278	7.728532 cpd	37.62963	0.95705812
47	B - 18	04 - TM73	6278	50670.625	8.07114129 cpd	34.1428785	0.84876548
48	B - 19	04 - TM73	830	22703.131	27.3531699 cpd	-162.09127	0.11221334
49	B - 20	04 - TM73	6911	80215.483	11.6069285 cpd	-1.8410011	0.93434506
50	B - 21	04 - TM73	7667	41057.624	5.35510943 cpd	61.7840676	1.03655383
51	B - 22	04 - TM73	6080	28691.97	4.71907401 cpd	68.2570312	0.82199652
52	B - 23	04 - TM73	7984	67629.83	8.47067009 DMSO	30.0768544	1.07941122
53	B - 24	04 - TM73	8150	79837.091	9.79596209 DMSO	16.5892929	1.10185389
54	C - 1	04 - TM73	7577	85503.256	11.2845791 DMSO	1.43956448	0.102438612
55	C - 2	04 - TM73	6964	82889.693	11.9025981 DMSO	-4.8500447	0.94151049
56	C - 3	04 - TM73	1412	2613.152	1.85067422 cpd	97.4488762	0.19089788
57	C - 4	04 - TM73	113	0	0 cpd	116.283278	0.01527724
58	C - 5	04 - TM73	6550	80127.867	12.2332621 cpd	-8.215229	0.88553901
59	C - 6	04 - TM73	1027	4799.86	4.67367089 cpd	68.719101	0.13884711
60	C - 7	04 - TM73	1044	6244.843	5.98165038 cpd	55.4077297	0.14114545
61	C - 8	04 - TM73	5259	146452.429	27.847973 cpd	-167.12691	0.71099995

NUMBERS



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Primary Screening





Screening Natural Products

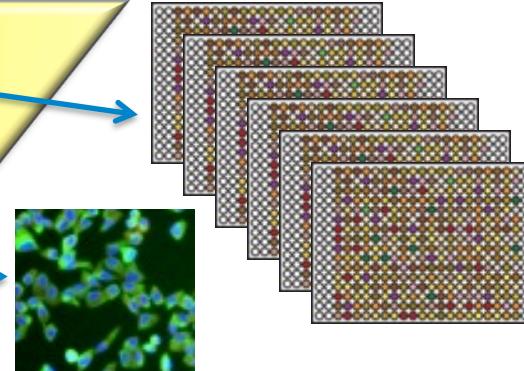
Screening of Natural Products



BILL & MELINDA
GATES foundation

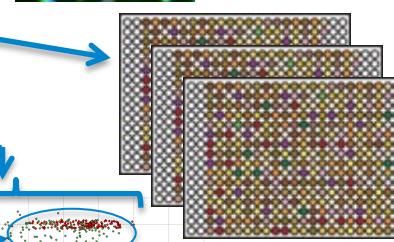


6,000 selected pre-fractions
x 20 cpds/pre-fraction
120,000 individual cpds



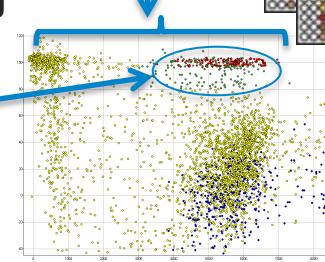
Unspecific toxicity filter

3,020 selected pre-fractions



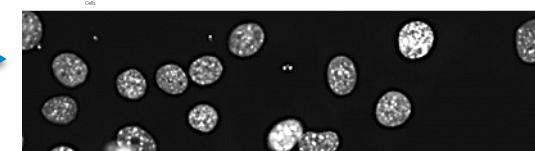
Anti-parasitic screening

102 pre-fraction hits



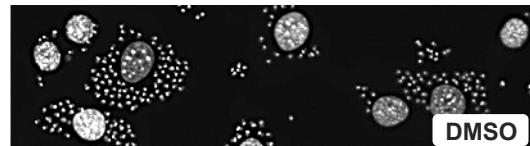
Peak-libraries

33 hit cpds



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Pure Compounds

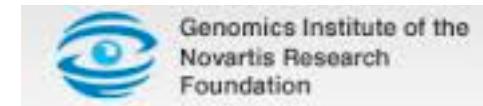
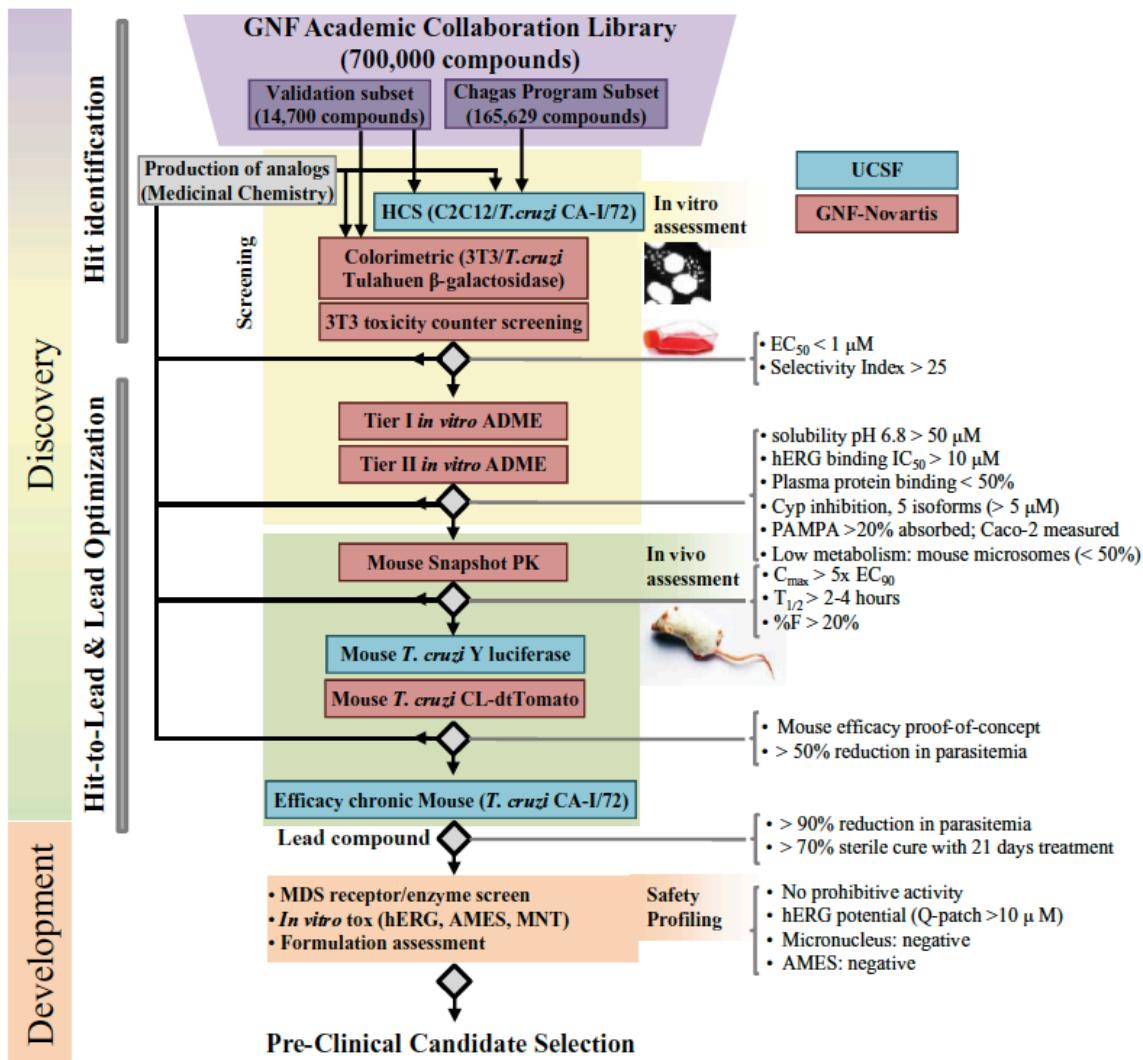


	EC_{50}	CC_{50}	Max. Activity	Phenotype
RLUS2214E3B	0.04 uM	>20 uM	90%	A microscopy image showing yeast cells at a concentration of 0.08 uM. The cells appear healthy and well-spaced. A white box in the bottom right corner is labeled "0.08 uM".
RLUS2214E1	1.3 uM	>20 uM	70%	A microscopy image showing yeast cells at a concentration of 2.5 uM. Some cells show signs of stress or budding. A white box in the bottom right corner is labeled "2.5 uM".
RLUS2214E3C	8 uM	>20 uM	65%	A microscopy image showing yeast cells at a concentration of 10 uM. Many cells are budding and appear less healthy. A white box in the bottom right corner is labeled "10 uM".
RLUS2214E5	10 uM	>20 uM	60%	A microscopy image showing yeast cells at a concentration of 10 uM. Similar to the previous row, many cells are budding and appear less healthy. A white box in the bottom right corner is labeled "10 uM".
RLUS2214E3D	>10 uM	>20 uM	0	A microscopy image showing yeast cells at a concentration of 10 uM. The cells are severely affected, with many appearing dead or damaged. A white box in the bottom right corner is labeled "10 uM".
RLUS1849C1B	>10 uM	>20 uM	0	A microscopy image showing yeast cells at a concentration of 10 uM. The cells are severely affected, with many appearing dead or damaged. A white box in the bottom right corner is labeled "10 uM".



Public-Private Partnership

University of California & GNF Novartis Chagas Disease Drug Discovery & Development



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In silico tools to optimize drug discovery

Bayesian Machine Learning Models

- Selleck Chemicals natural product lib. (139 molecules);
- GSK kinase library (367 molecules);
- Malaria box (400 molecules);
- Microsource Spectrum (2320 molecules);
- CDD FDA drugs (2690 molecules);
- Prestwick Chemical library (1280 molecules);
- Traditional Chinese Medicine components (373 molecules)

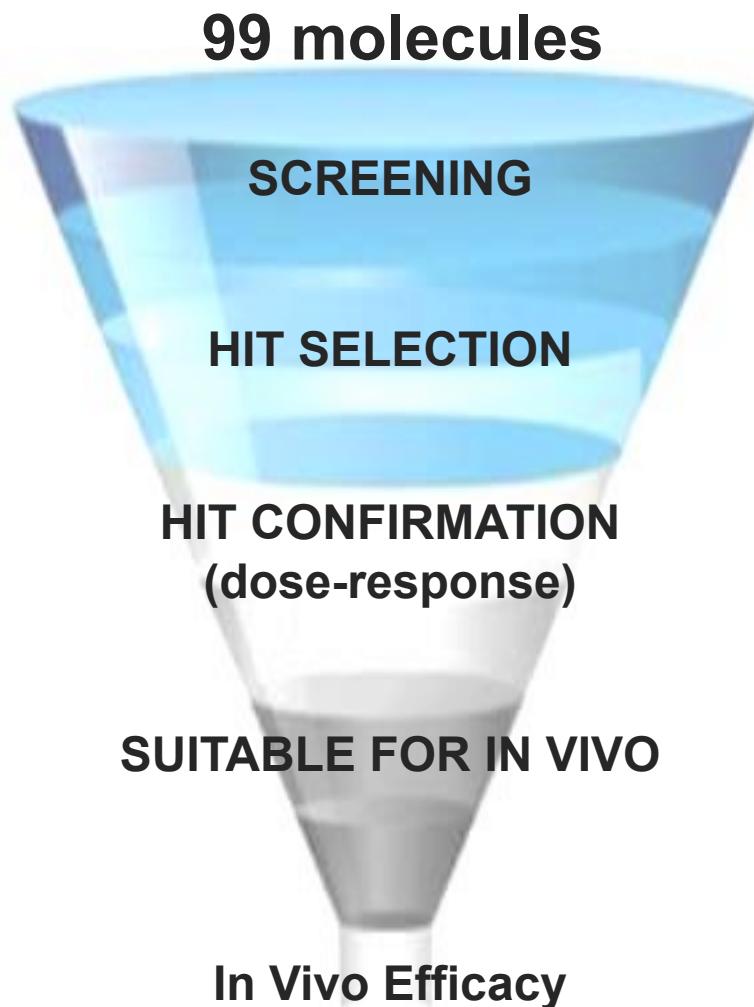
7569 molecules

99 molecules

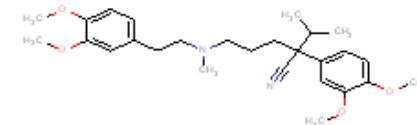


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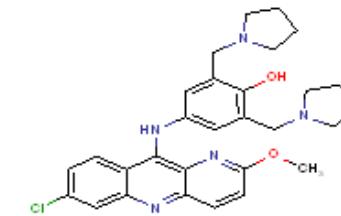
Comparing Diversity Screening vs Optimized



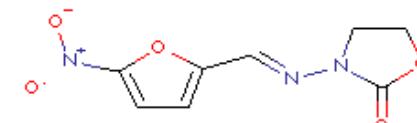
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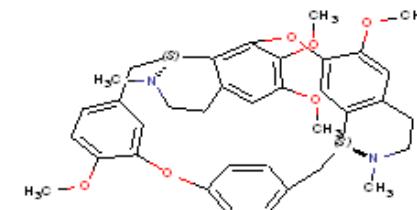
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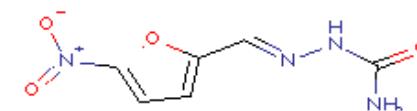
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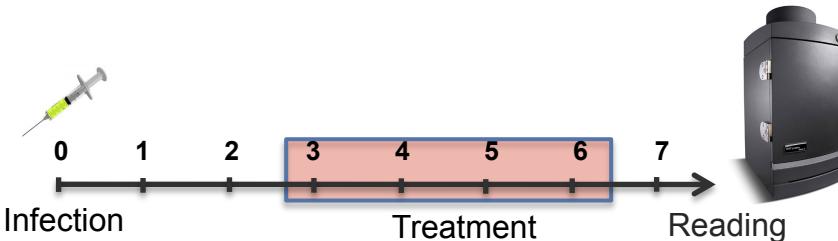
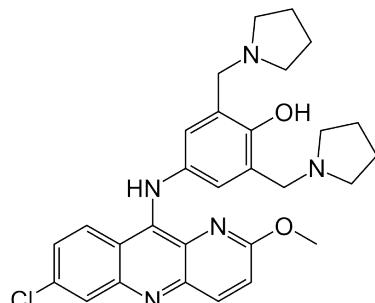
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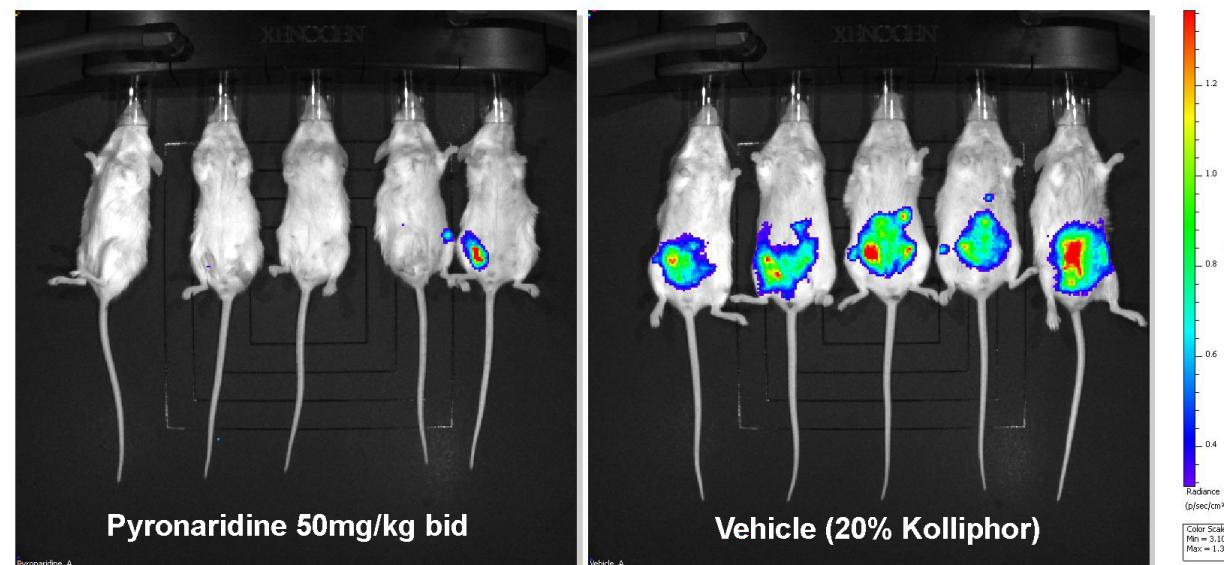
SC-0011754



Pyronaridine



Trypanosoma cruzi infection - 4 days treatment



85% efficacy

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Pyronaridine: anti-Chagas candidate and Known anti-Malaria



DEFEATING MALARIA TOGETHER

Research & Development

Access

Partnering

About us

Malaria & medicines

Invest in us

Newsroom

Home > Access > Areas of work >

Areas of work

- Supporting Introduction
- Enhancing reach
- Informing R&D
- Gathering market intelligence

Map of projects

Tool Kits

Access interviews

Pyramax® (pyronaridine artesunate)

Pyramax®, the fixed-dose combination of pyronaridine and artesunate co-developed by MMV and Shin Poong Pharmaceutical, was granted a positive scientific opinion from the European Medicines Agency (EMA) under Article 58 in February 2012.

This once daily, 3-day treatment is indicated for acute, uncomplicated *Plasmodium falciparum* and blood-stage *Plasmodium vivax* malaria in adults and children over 20kg. Following EMA guidance, Pyramax will be targeted to countries with areas of low malaria transmission where there is reported artemisinin resistance and diminished efficacy of other artemisinin-based combination therapies (ACTs). In the absence of repeat-dose data it is recommended that PYRAMAX® be used only as a single treatment course.



Related information

Fact Sheet: Pyramax®

News: Pyramax now registered in Cambodia

News:
Pyronaridine/artesunate included in the list of WHO prequalified medicines

Press Release: Pyramax® receives positive opinion from the EMA

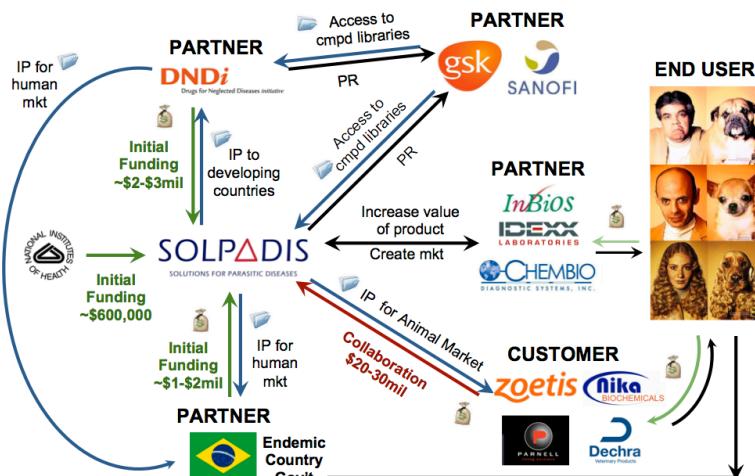
Press Release: Patient screening underway for Pyramax® sub-study in Sotuba, Mali

Startup

ENTREPRENEURSHIP AT UCSF CENTER

SOLPADIS

SOLUTIONS FOR PARASITIC DISEASES



Ciencia na Escola



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Knowledge is like a garden
if it is not cultivated it cannot be harvested

African proverb

Funding acknowledgments



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