



10 February 2011

Companies Announcements Office
Australian Securities Exchange Limited
10th Floor, 20 Bond Street
SYDNEY NSW 2000

DR. ROBIN SCAIFE TO PRESENT AT THE 4TH AUSTRALIAN HIGH CONTENT IMAGE MEETING

BPH Energy Limited [ASX: BPH] is pleased to provide a copy of the presentation that the Principal Researcher Dr. Robin Scaife will present at the 4th Australian High Content Image Meeting in Lorne, Melbourne, today.

High Content Imaging has industrialised the field of microscopy, transforming process like fluorescence microscopy from the single glass slide to a fully automated high-throughput imaging process. Since its inception over ten years ago, high-content imaging and analysis has become a pivotal process in early-stage drug discovery. BPH investee company, Molecular Discovery Systems (MDS), uses high content imaging and analysis to screen for new oncology drugs.

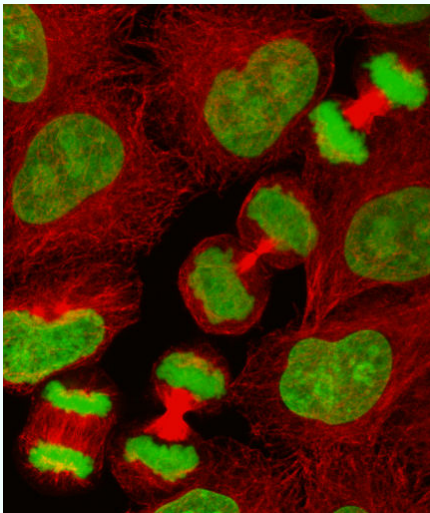
MDS has gained core expertise in high-content screening and high-throughput imaging and analysis. MDS' innovative high content imaging and analysis platform detects and quantifies cellular properties much faster than conventional methods, facilitating in the rapid optimisation and prioritisation of drug leads. MDS has effectively utilised high-content imaging and analysis to identify novel cancer drug candidates.

Yours Sincerely,

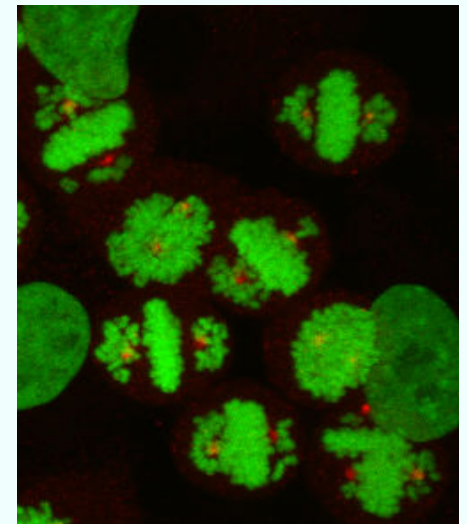
A handwritten signature in black ink, appearing to read "D. Breeze".

David Breeze
Chairman

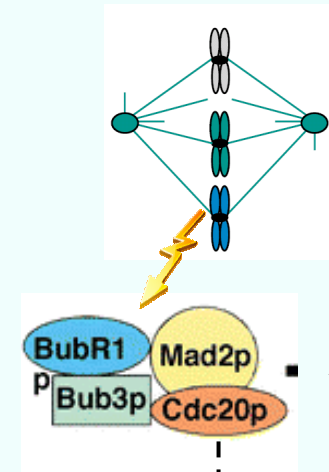
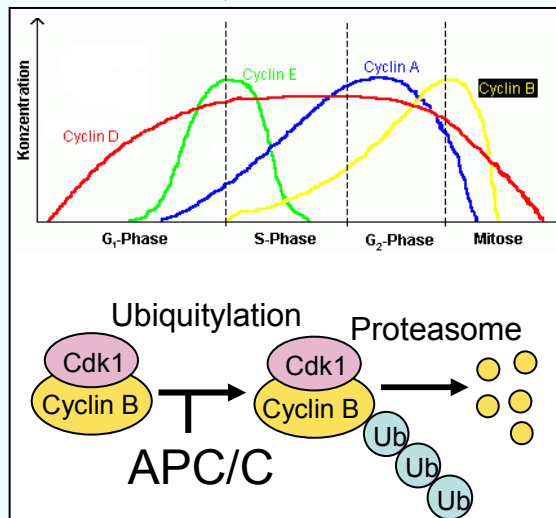
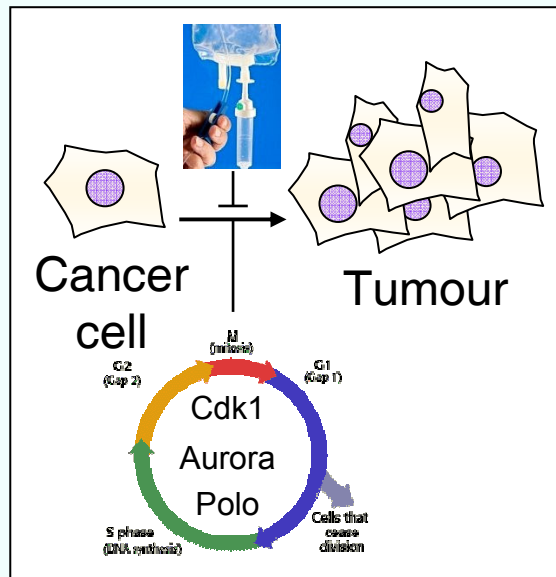
Use of high-content imaging and analysis to screen for new oncology drugs



Robin Scaife
Molecular Discovery Systems
WAIMR

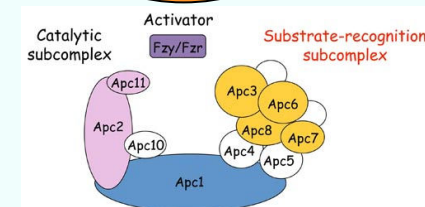


Cyclin B Degradation by the UPS

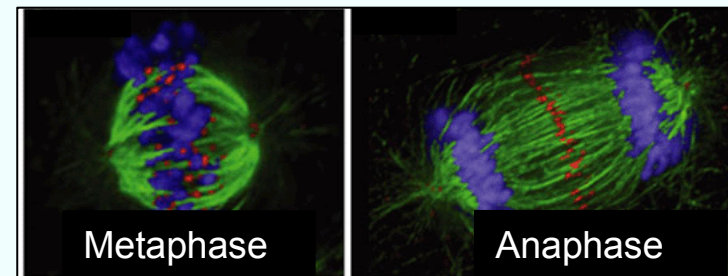


**Spindle
Assembly
Checkpoint**

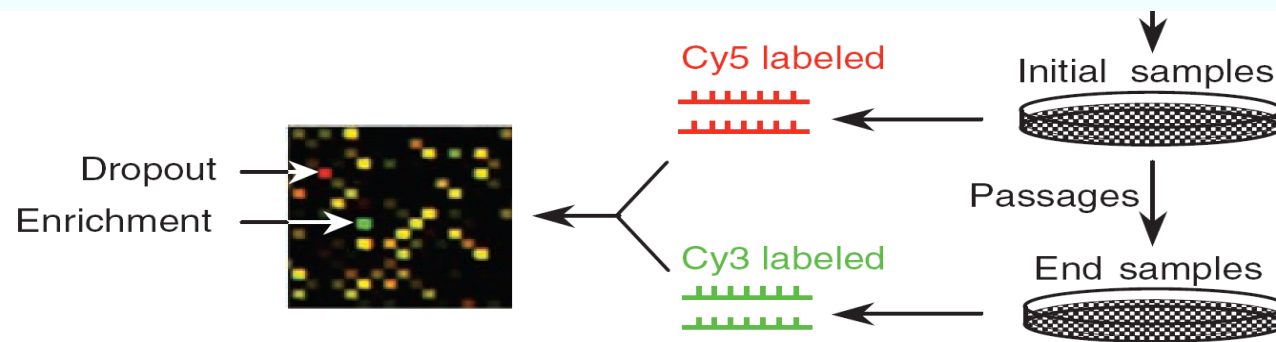
Cdc20p



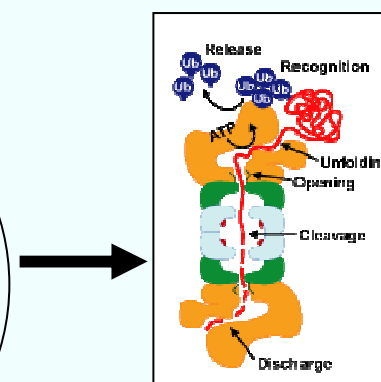
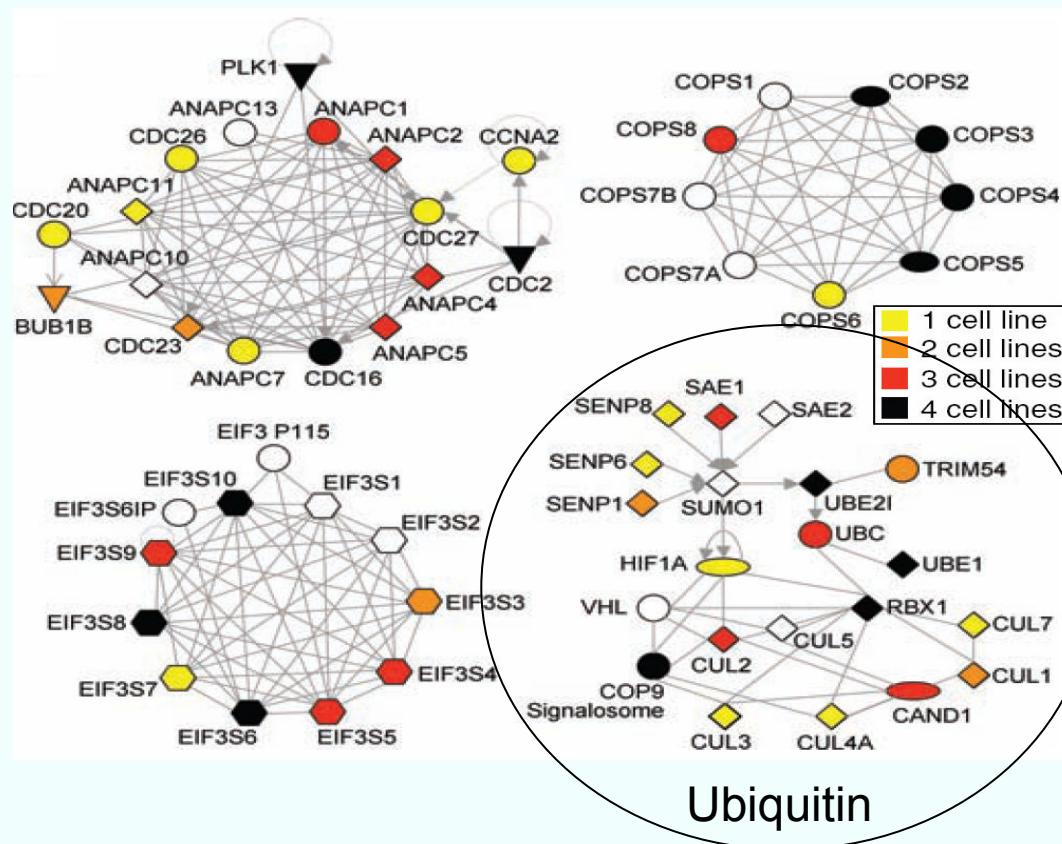
**Anaphase
Promoting
Complex**



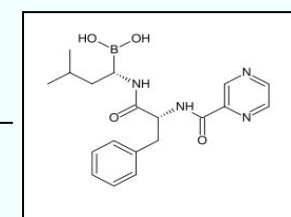
Cell Proliferation shRNA Screen



Schlabach et al., Science (2008)

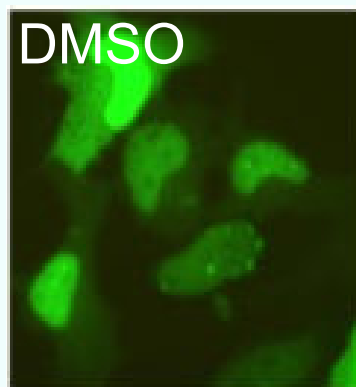


26S
Proteasome

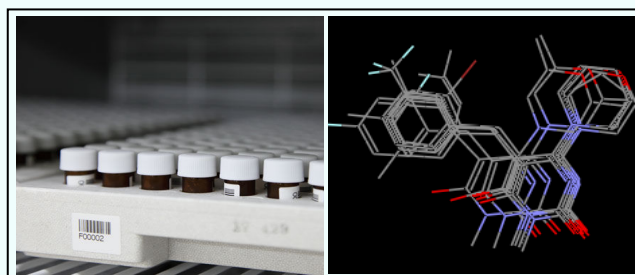
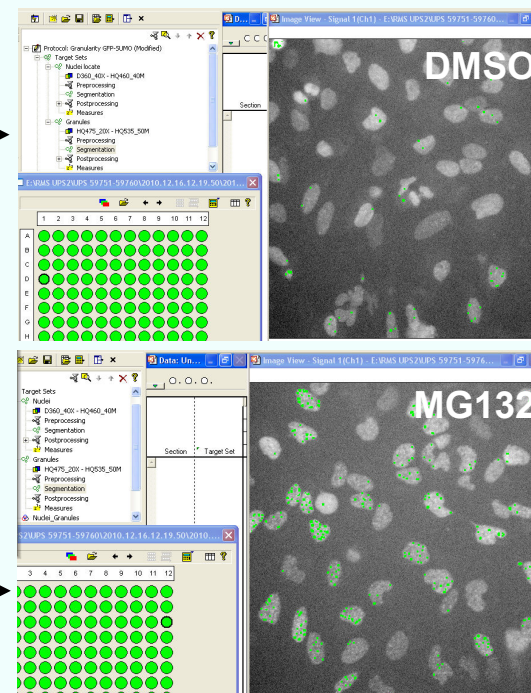


Velcade™

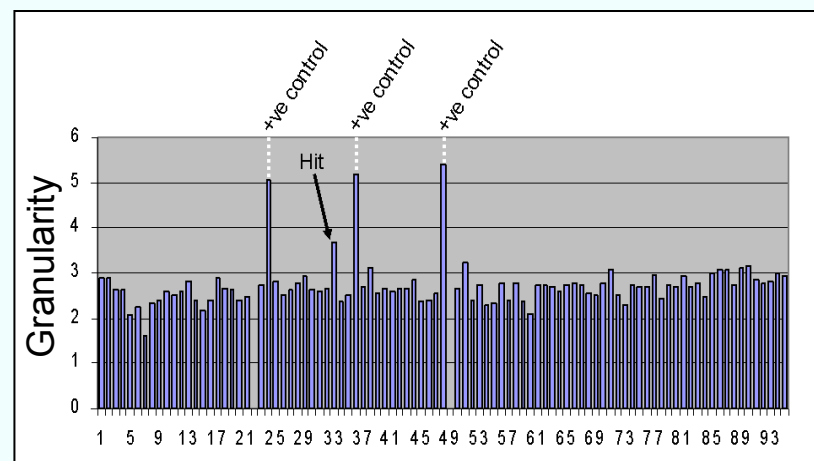
GFP-SUMO Granularity Assay



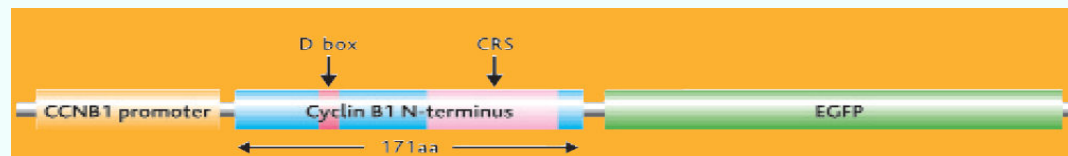
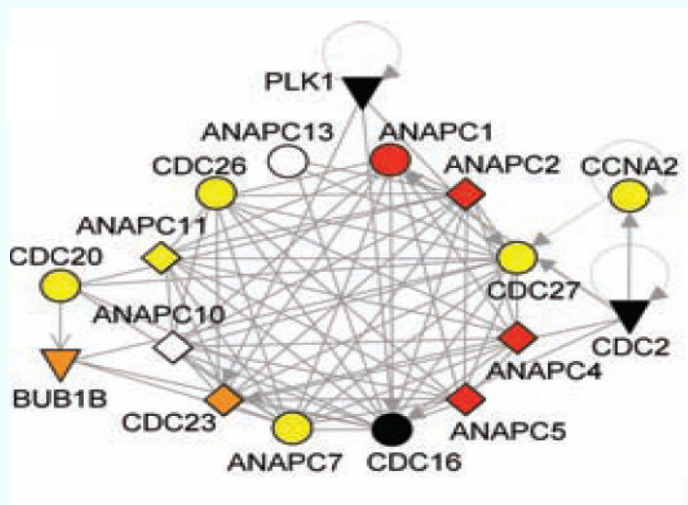
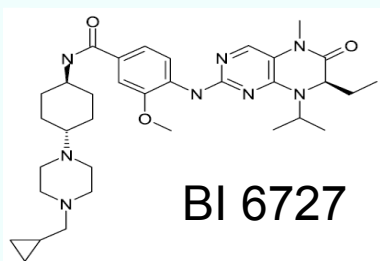
High-content
imaging and
analysis



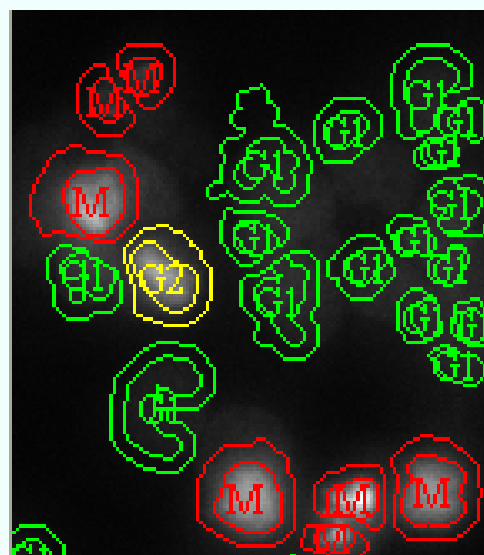
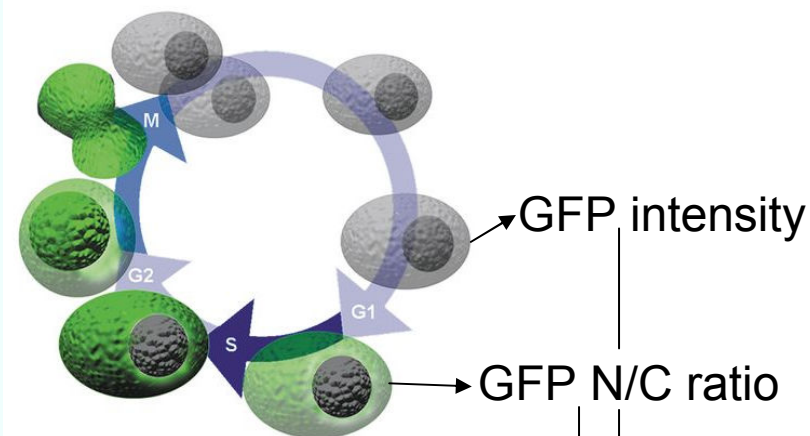
Pharmacologically Diverse



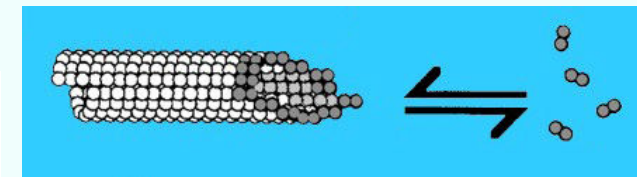
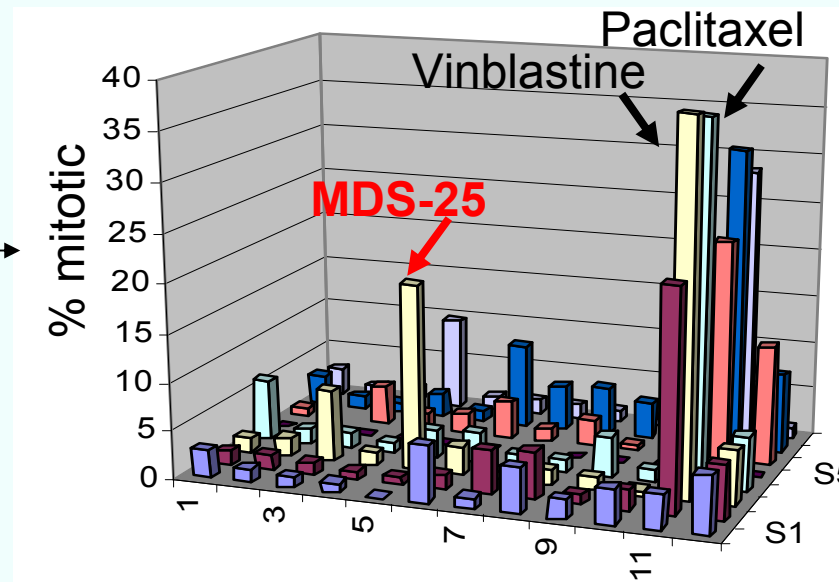
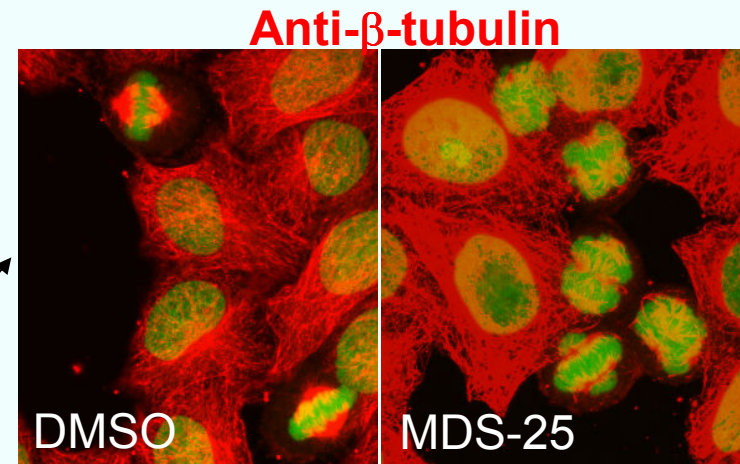
Cyclin-B-GFP Cell Cycle Screen



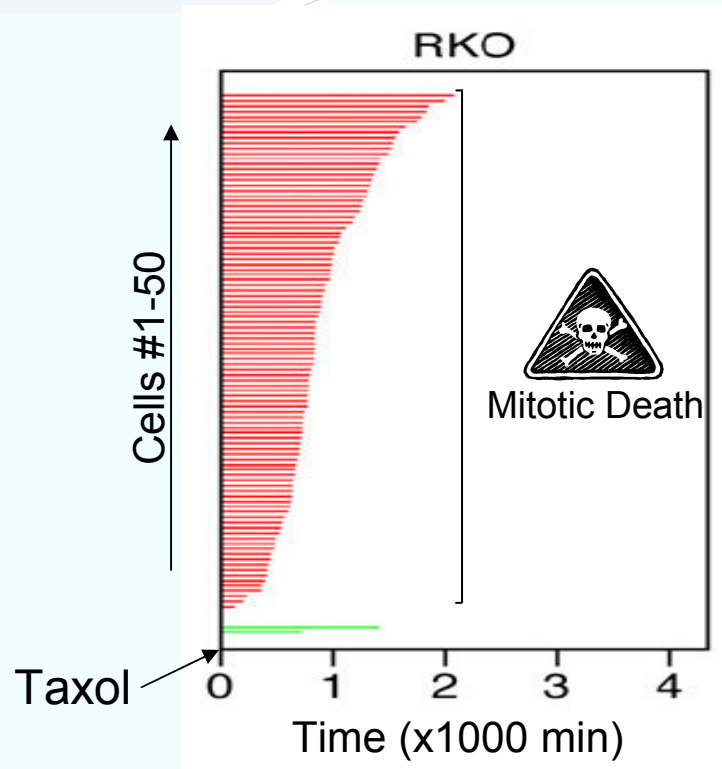
Courtesy of GE Healthcare



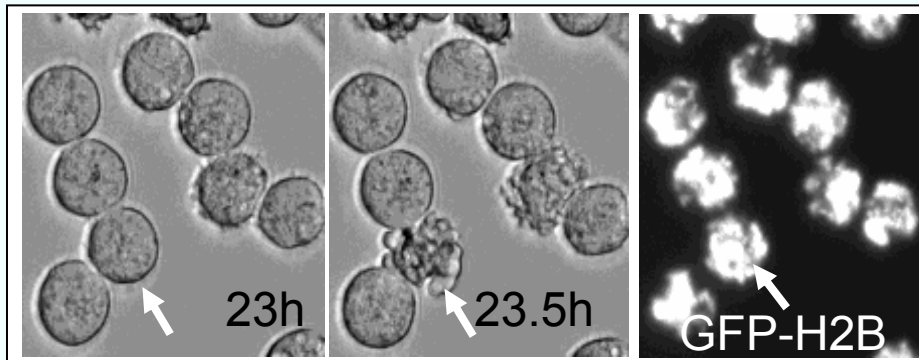
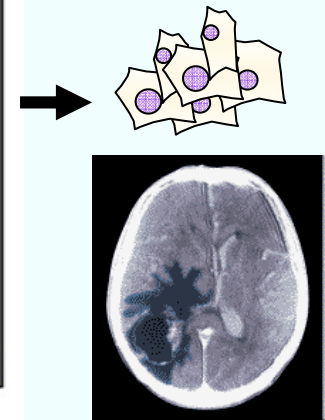
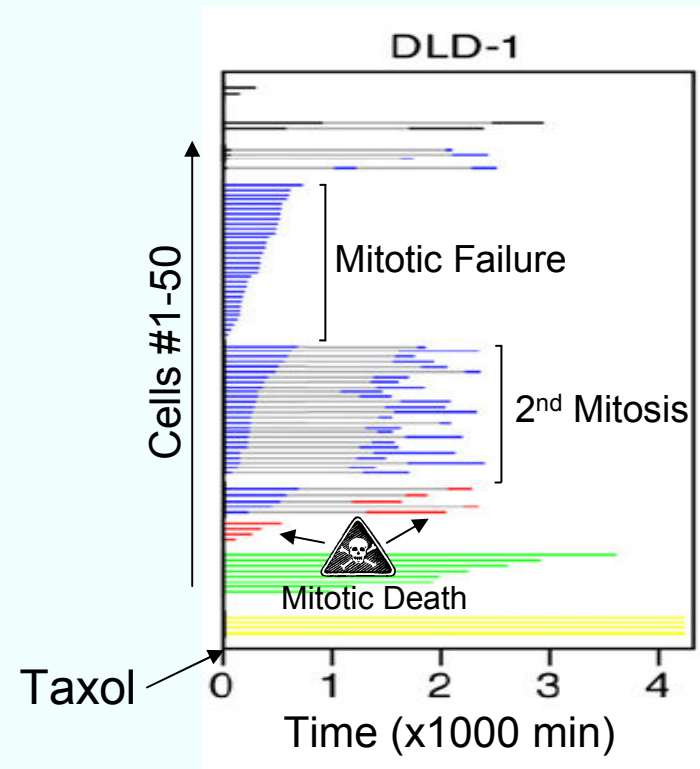
Screening of Marine Natural Resources



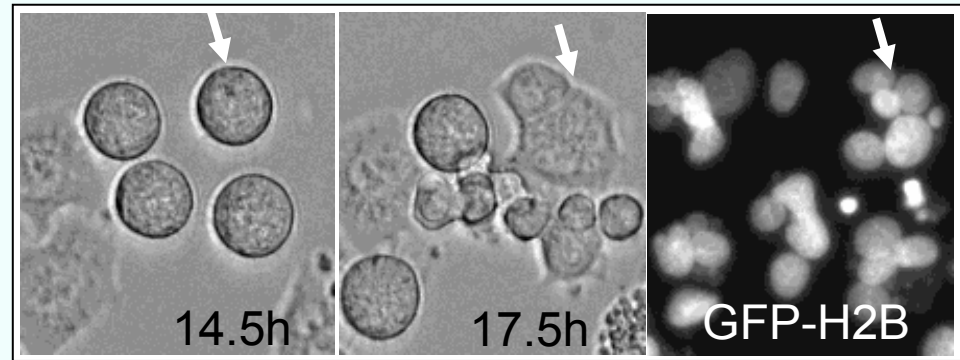
Variation in Response to Mitotic Arrest



Gascoigne et al., Cancer Cell (2008)

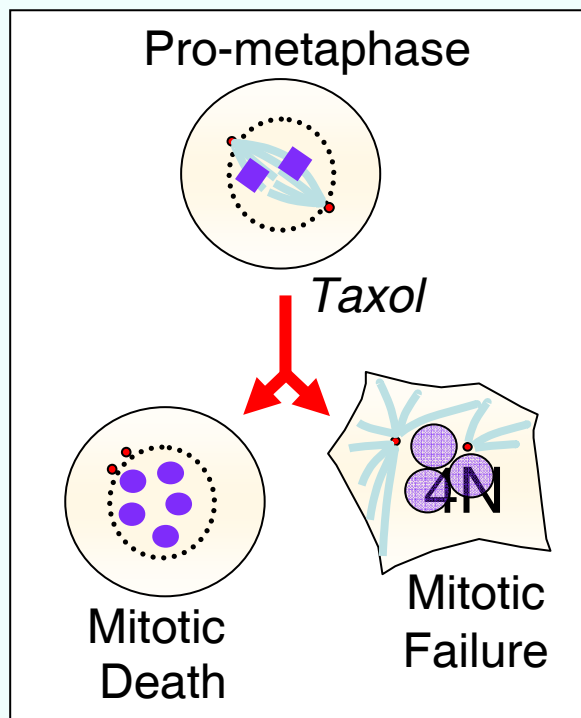


Mitotic Death

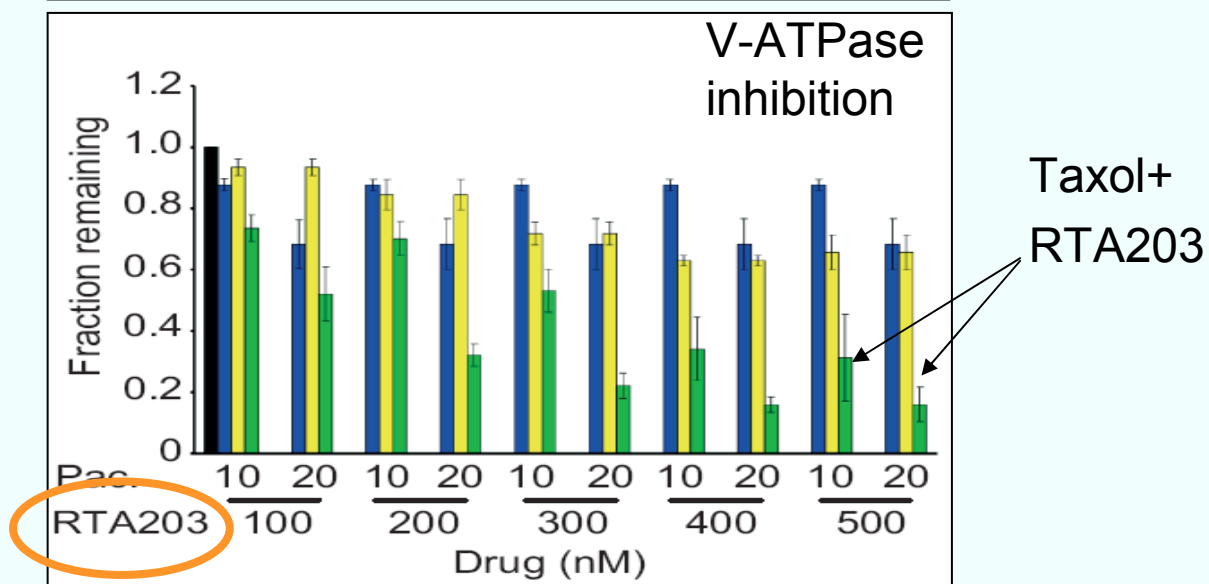
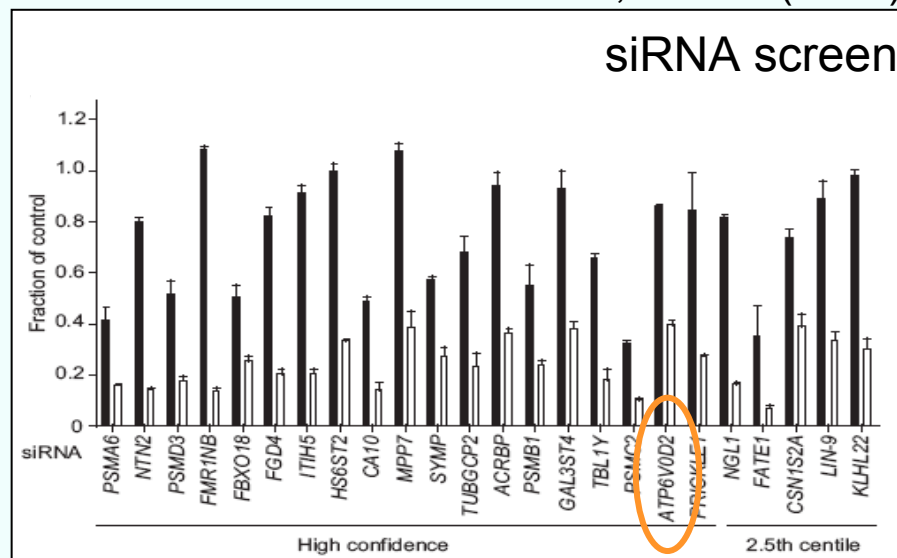


Mitotic Failure

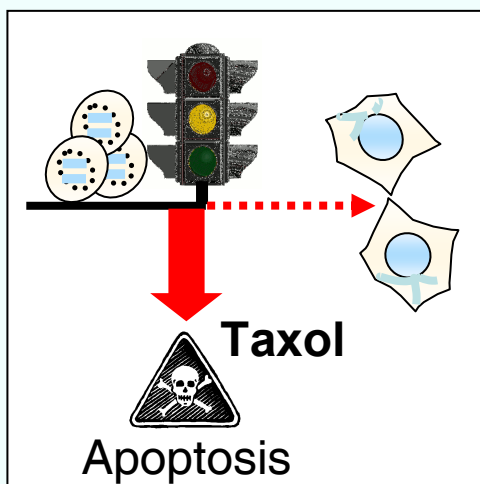
Taxol Sensitization



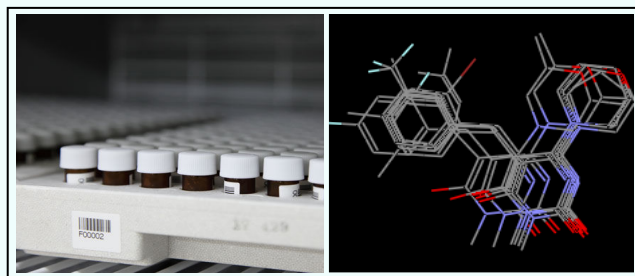
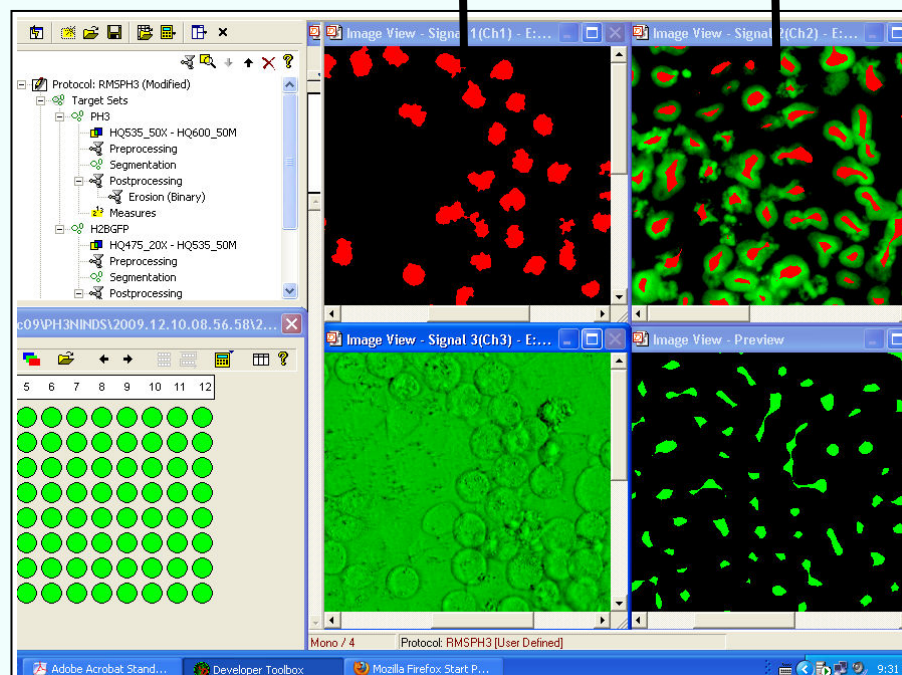
Whitehurst et al., Nature (2007)



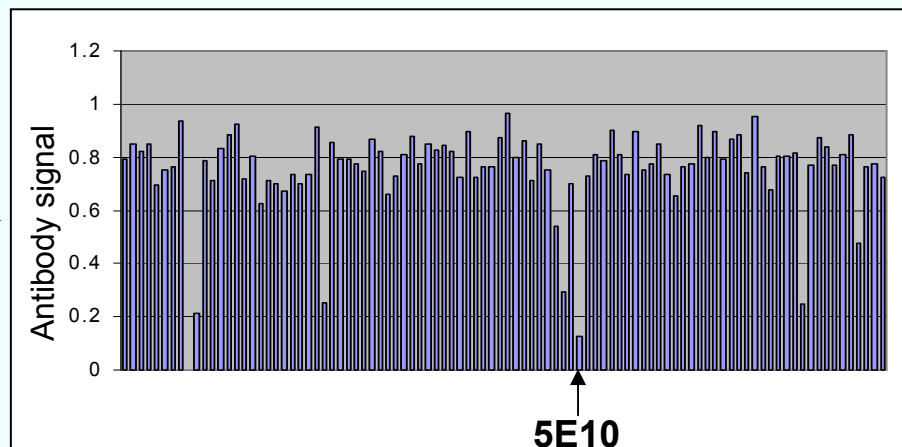
Induction of Mitotic Death



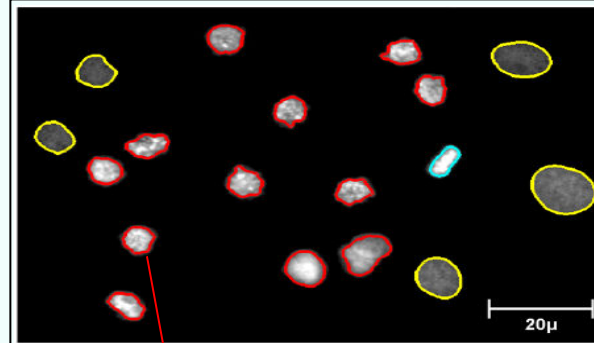
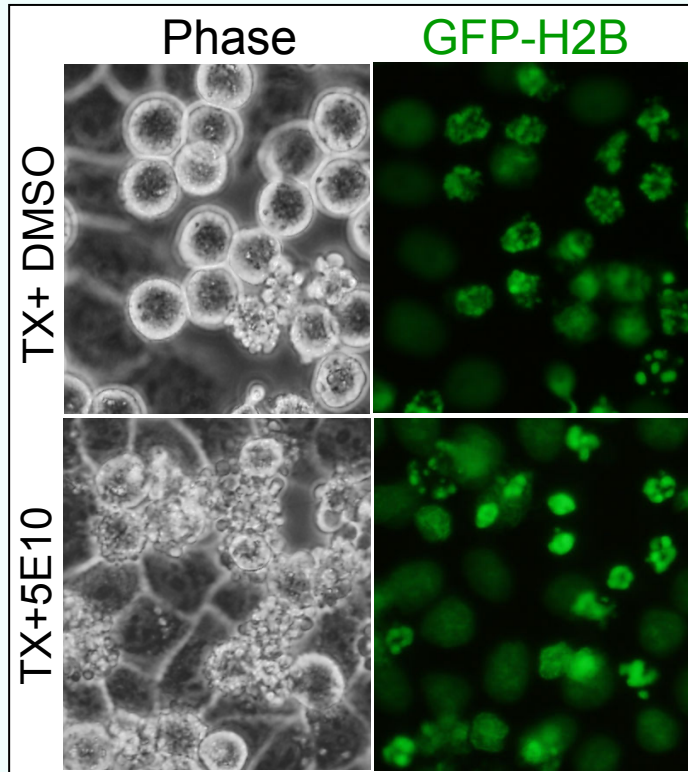
α PH3 segmentation GFP-H2B segmentation



Pharmacologically Diverse



HCS of Mitosis vs Apoptosis

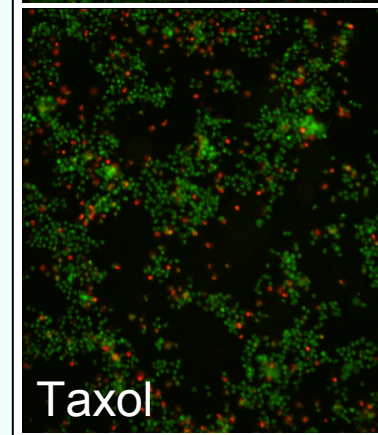
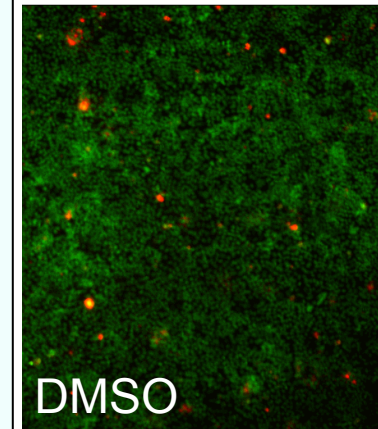


Tsui et al., PLoS (2009)

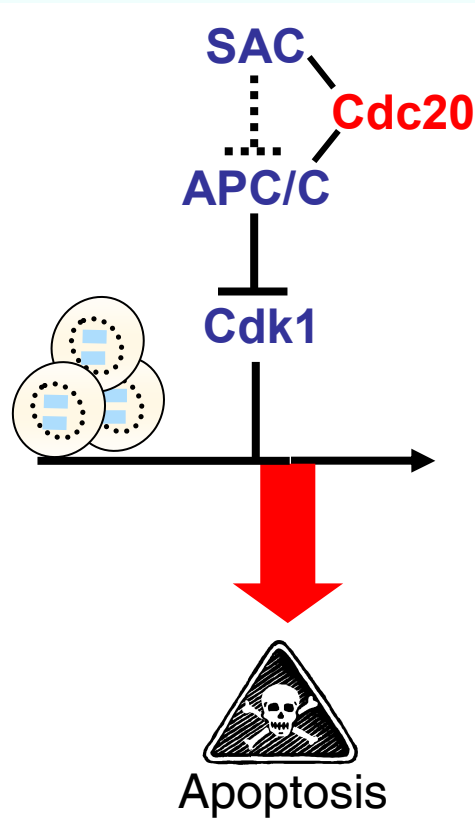
Monopolar spindles:

- Small form factor (Area/Perimeter)
- High SD of intensity

GFP-H2B
Propidium

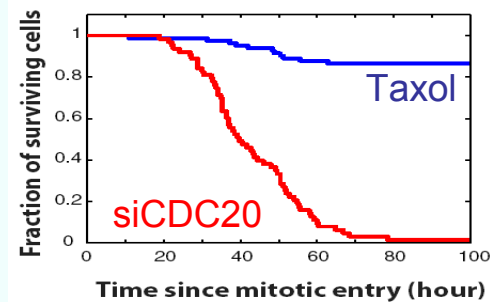


Inhibition of Mitotic Exit

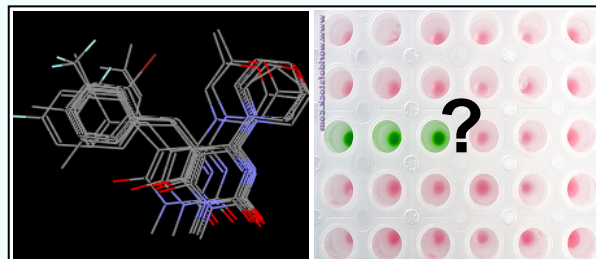
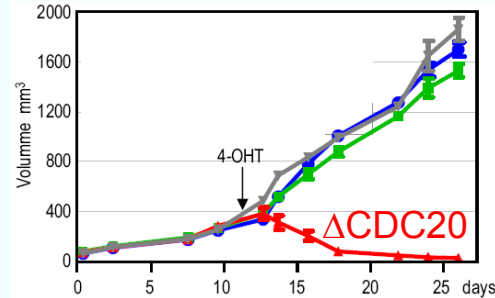


Huang et al., Cancer Cell (2009)

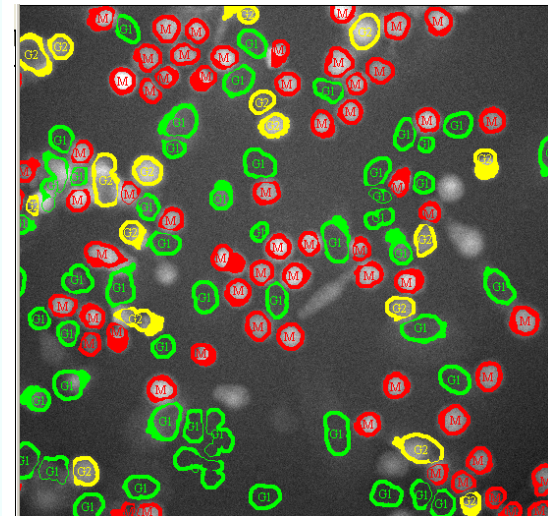
MCF7



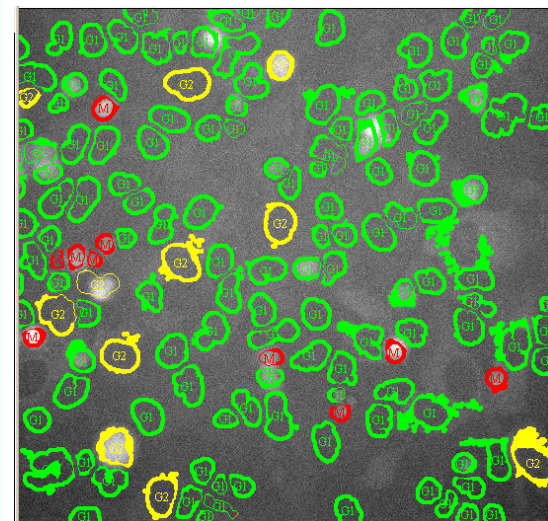
Manchado et al., Cancer Cell (2010)



Cyclin-B-GFP

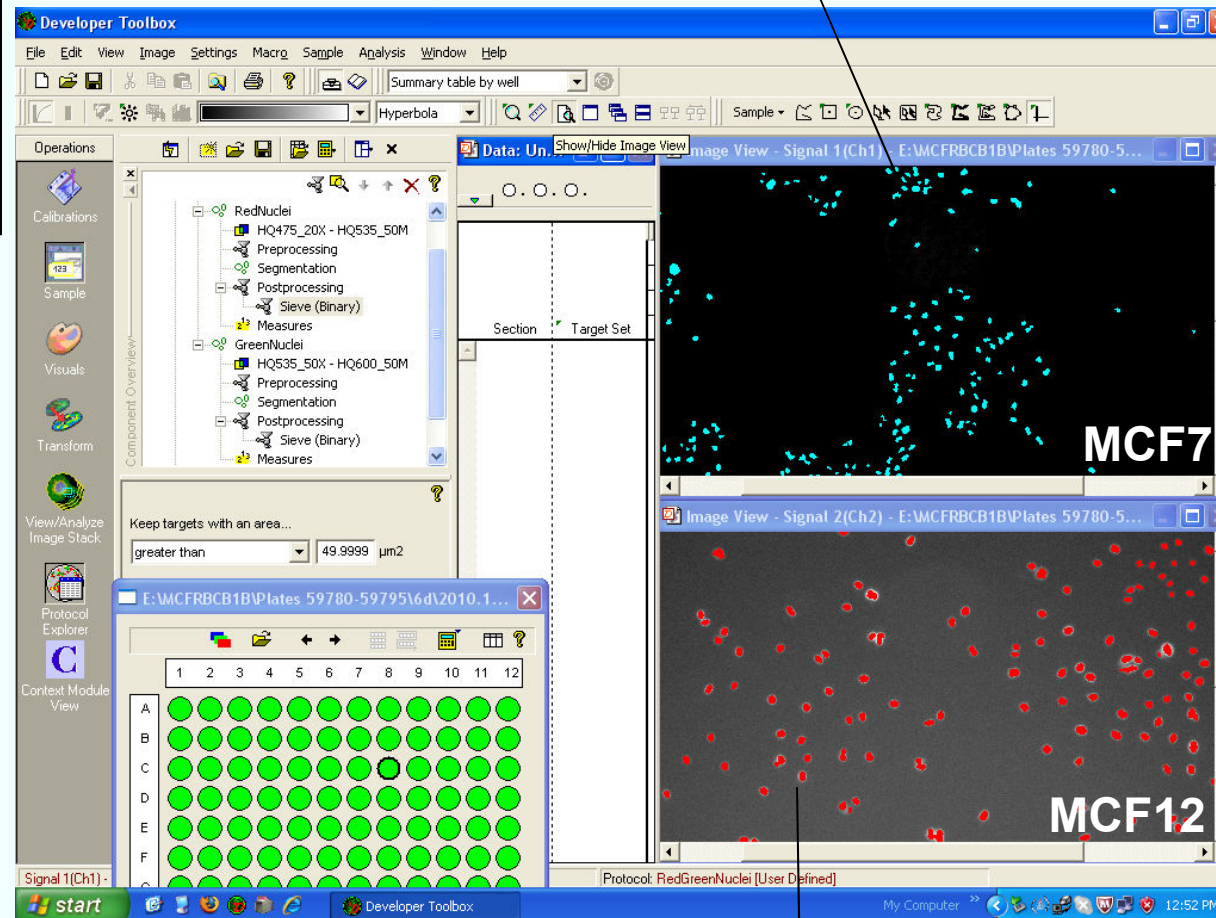
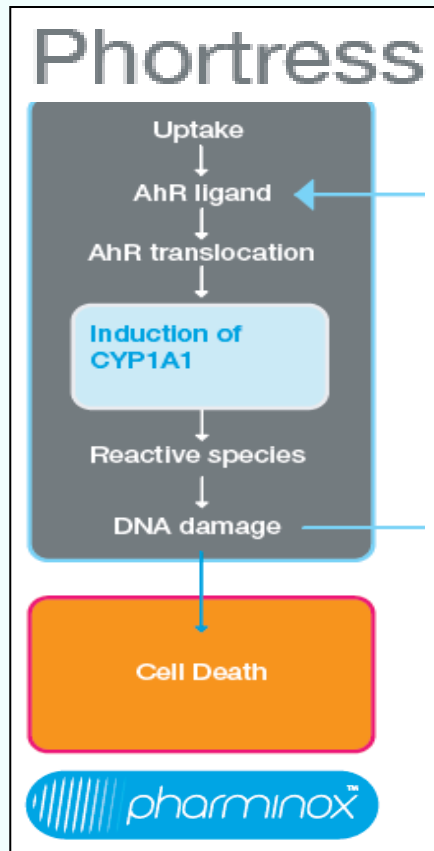
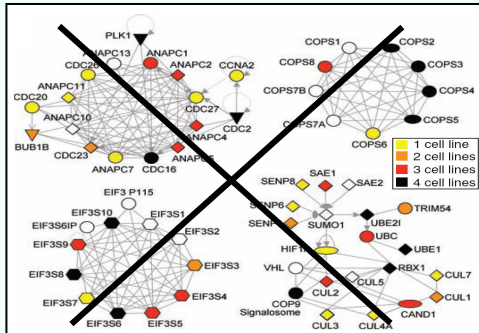


Nocodazole (35%M)



6h Nocodazole release (4%M)

Selective Inhibition of Proliferation



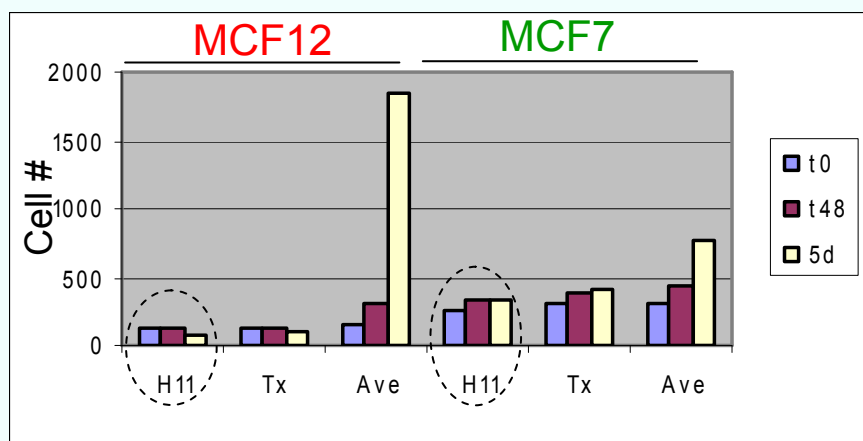
$\lambda 475\text{nm}$ segmentation

$\lambda 535\text{nm}$ segmentation

Screening for Selective Growth Inhibition

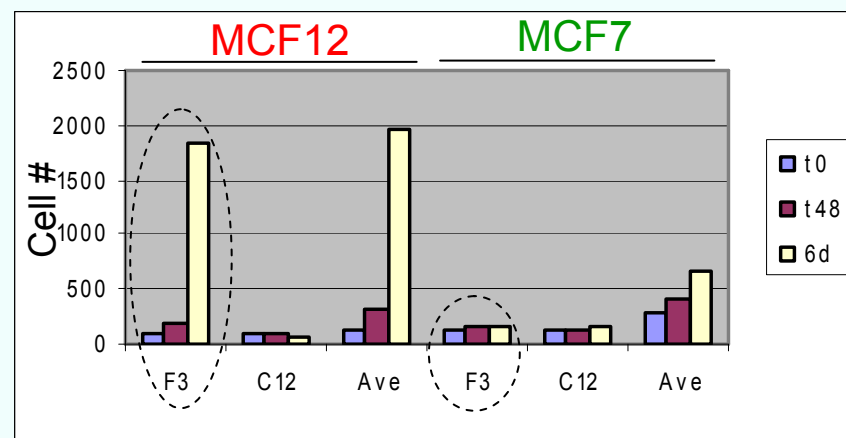
~50/10,000 compounds

Non-selective inhibition

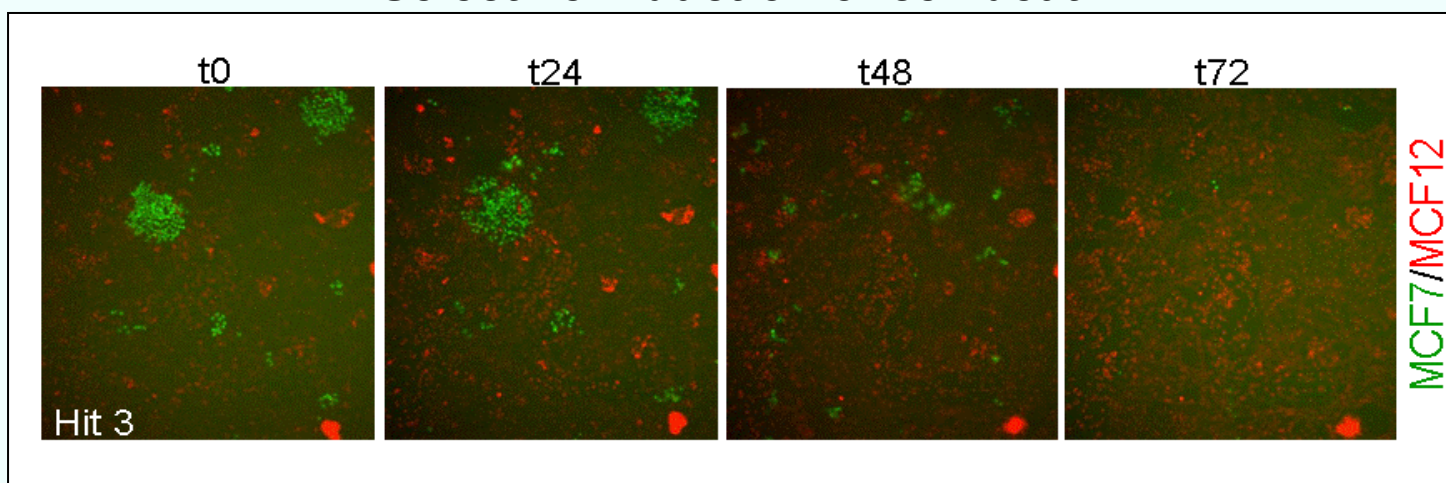


~2/10,000 compounds

Selective inhibition



Selective induction of cell death





Rachel Ramsdale



Jennifer Beaumont

Prof. Peter Klinken

AUSTRALIAN INSTITUTE OF MARINE SCIENCE



Catherine Liptrot



GE Healthcare