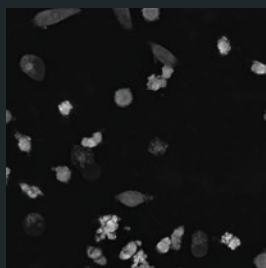


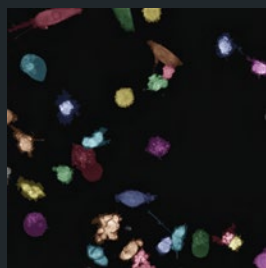
# LIVE CELL DEATH ASSAY

The first push button and automated solution for quantifying if, when and how cells respond to a drug, in a single assay, and without user input, improving assay time, standardization, and reproducibility.

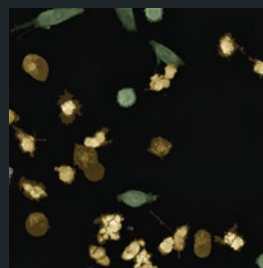
## PROFILE CELL HEALTH, DEATH, APOPTOSIS AND NECROSIS, LABEL-FREE



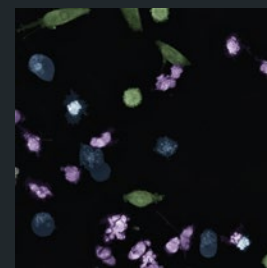
RI map



Cell segmentation masks (sm)



Living and dead cells sm

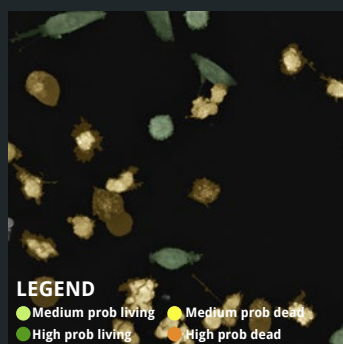


Living, apoptotic and necrotic cells sm

The LIVE Cell Death Assay (LCDA) provides first-in-class analysis of cell death dynamics using data derived from Nanolive's label-free live cell images. Developed using state-of-the-art machine learning, the LCDA has been trained to discriminate not only living cells from dead cells, but also apoptosis, from necrosis.

## UNIQUE, COMPREHENSIVE, AND NOVEL CELL METRICS

### COMPREHENSIVE VIABILITY METRICS THAT COVER ALL ASPECTS OF CELL HEALTH



**LIVING (%)**

% of living cells in the field of view.

**LIVING (#)**

Total number of living cells in the field of view.

**HEALTH CELL INDEX (%)**

The mean probability that cells are alive.

**DEAD (%)**

% of dead cells in the field of view.

**DEAD (#)**

Total number of dead cells in the field of view.

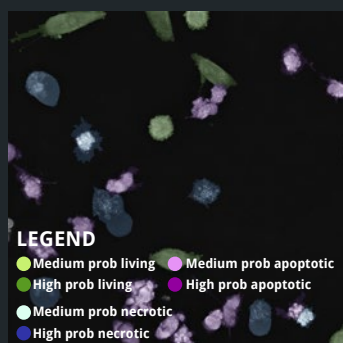
**CELL DEATH FRACTION**

Proportion of dead cells in the field of view normalized between 0 and 1.

**CELL DEATH RATE**

Proportion of new dead cells in the field of view per hour.

### NOVEL CELL DEATH METRICS THAT DIFFERENTIATE BETWEEN APOPTOSIS AND NECROSIS



**APOPTOTIC / TOTAL (%)**

% of apoptotic cells in the field of view.

**APOPTOTIC / DEAD (%)**

% of apoptotic cells divided by the number of dead cells in the field of view.

**APOPTOTIC (#)**

Total number of apoptotic cells in the field of view.

**NECROTIC / TOTAL (%)**

% of necrotic cells in the field of view.

**NECROTIC / DEAD (%)**

% of necrotic cells divided by the number of dead cells in the field of view.

**NECROTIC (#)**

Total number of necrotic cells in the field of view.

**APOPTOTIC / TOTAL (%)**

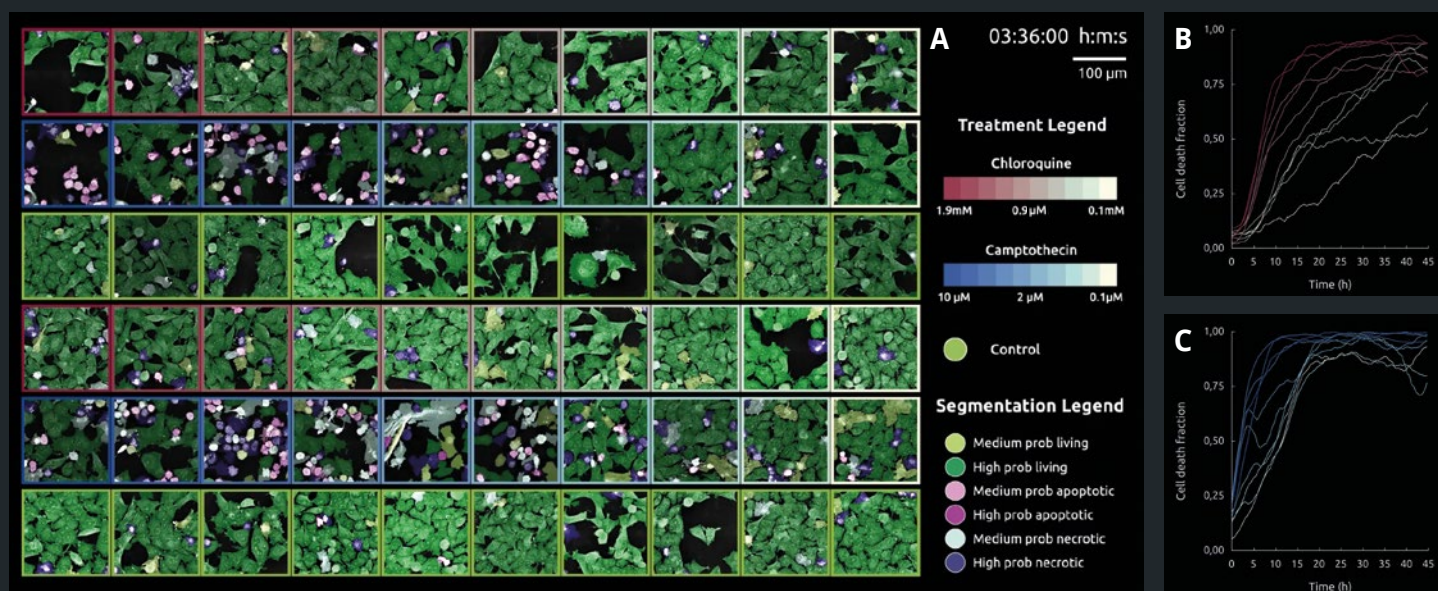
% of apoptotic cells in the field of view.

The LCDA generates 13 novel metrics that cover all aspects of cell health and death. Furthermore, the EVE Analytics standard package metrics are included for each population (living, dead, apoptotic, necrotic).

**THE LIVE CELL DEATH ASSAY —  
LIFE, DEATH, AND EVERYTHING IN BETWEEN.**

## PUSH-BUTTON AUTOMATED SCREENING OF CELL HEALTH AND DEATH IN 96-WELL PLATE FORMAT

The LIVE Cell Death Assay (LCDA) provides a unique and complete solution for measuring the phenotypic and cytotoxic activity of compounds, drugs or experimental conditions in an automated and non-invasive (label-free) fashion, in 96-well plate format.



**Figure 1.** Timelapse analysis of the cytotoxic activities of Chloroquine and Camptothecin. (A) Images showing the living vs. apoptotic vs. necrotic cell mask at a single time-point (3 h 36 mins) in all wells. Living cells are coloured in shades of green, apoptotic cells in shades of magenta, and necrotic cells in shades of blue. The outline of each well corresponds to the concentration of drug used: Chloroquine is shown in shades of red, Chloroquine in shades of blue, and negative controls are shown in green. (B) Quantitative analysis of the dose-dependent cytotoxic activity of Chloroquine. (C) Quantitative analysis of the dose-dependent cytotoxic activity of Camptothecin.

“With the LIVE Cell Death Assay, the health of each single cell is determined at every timepoint, ensuring temporal dynamics are quantified with the highest precision.”

**Dr. José M. Padrón**

Full Professor, Universidad de La Laguna

**THE LIVE CELL DEATH ASSAY –  
LIFE, DEATH, AND EVERYTHING IN BETWEEN.**