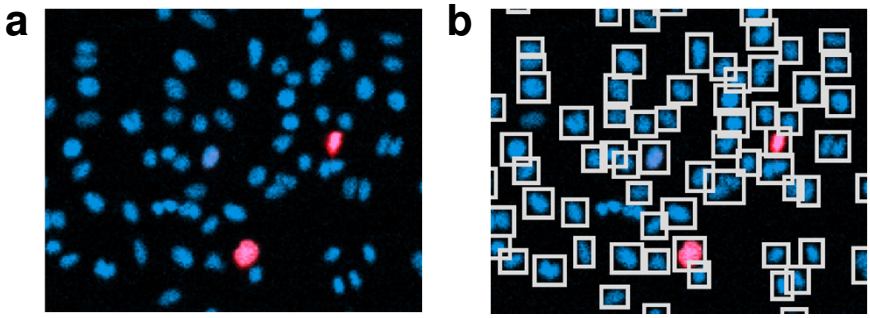
CQ1 YOKOGAWA

Confocal Quantitative Image Cytometer CQ1

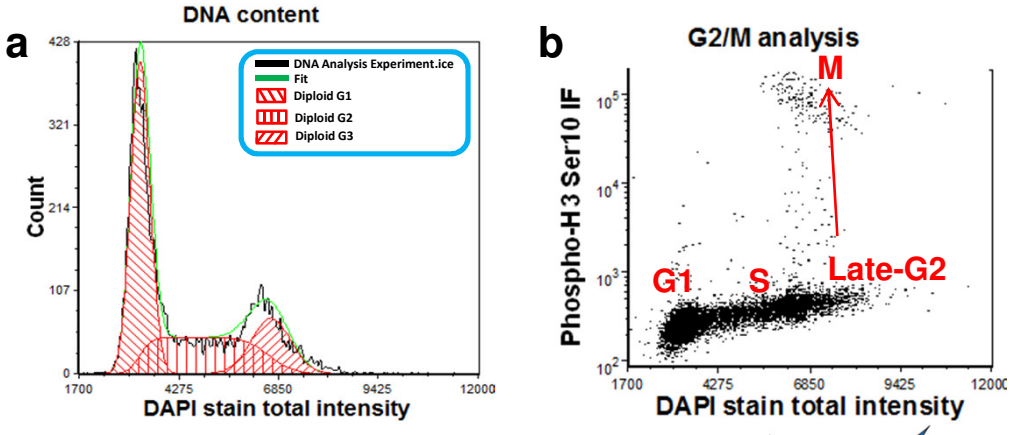
Cell cycle analysis

The CQ1 is capable of performing conventional cell cycle analysis protocols on cells with fluorescently stained nuclei. Below, an experiment was designed to examine cell cycle progression in relation to H3 Ser10 fluorescence by utilizing the CQ1's multi-color channel capabilities. Histone molecules are phosphorylated during cell cycle progression with phosphorylation of the 10th serine of histone H3 being one of the well characterized events of late-G2 to M progression typical used in image and flow cytometry techniques.



Nuclear stain: DAPI
1st Ab: Anti-pH3 Ser10 mouse monoclonal (BioLegend)
2nd Ab: Anti-mouse IgG AlexaFluor 488 (Red: pseudo color)

Figure 1. Image acquisition and analysis by the CQ1
a) A DAPI stained image of fixed A549 human lung cancer cells. Phospo-histone H3 Ser10 positive cells are visualized by immunostaining (red); b) Nucler recognition by the CQ1 image analysis software.



Cycle	G1 Mean	G1 CV	%G1	G2 Mean	G2 CV	%G2	%S	G2/G1	%Total
Diploid	3303.0	7.5	50.4	6680.7	7.6	18.3	31.3	2.0	100.0

Figure 2. Cytometric analysis
Numerical results processed by the CQ1 were exported in the image cytometry experiment data format (ICE format) and further analyzed by FCS Express Image Cytometry (De Novo Software, Glendale, CA). a) DNA content histogram; b) Scattergram of G2-M progression by immunofluorescence (IF) intensity against pH3 Ser10 marker.