CQ1 YOKOGAWA

Confocal Quantitative Image Cytometer CQ1

Granule image analysis

The phosphorylation of H2AX Ser139 (γH2AX) is one of the significant events upon DNA double strand break. Quantitative measurement of γH2AX focus formation can be easily performed by using the high-throughput confocal image acquisition in combination with the Granule Analysis Template.

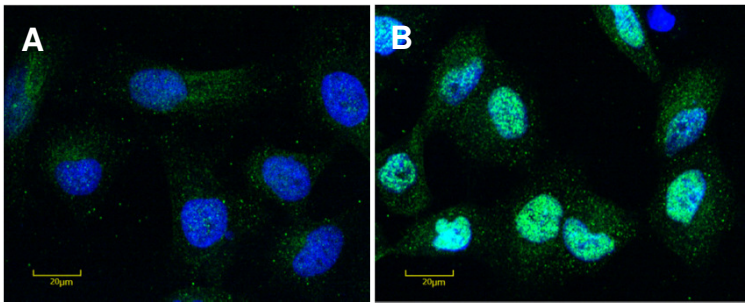
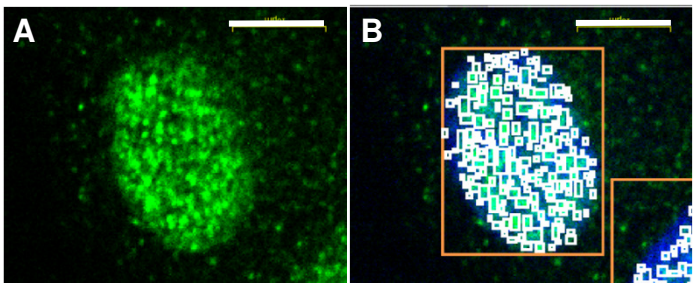


Figure 1. Images of γH2AX focus formation on Hela cells.
A) negative control; B) 1 mM H_2O_2 treated. Objective lens: 20X.

Nuclear stain: Hoechst 33342
1st Ab: anti- γH2AX rabbit polyclonal (Enzo)
2nd Ab: anti-rabbit IgG AlexaFluor 488

Figure 2. Analysis algorithm of γH2AX focus formation by using the CQ1 Granule Analysis Template.
A) γH2AX immunostain ; B) focus recognition. Scale bar: 10 µm.



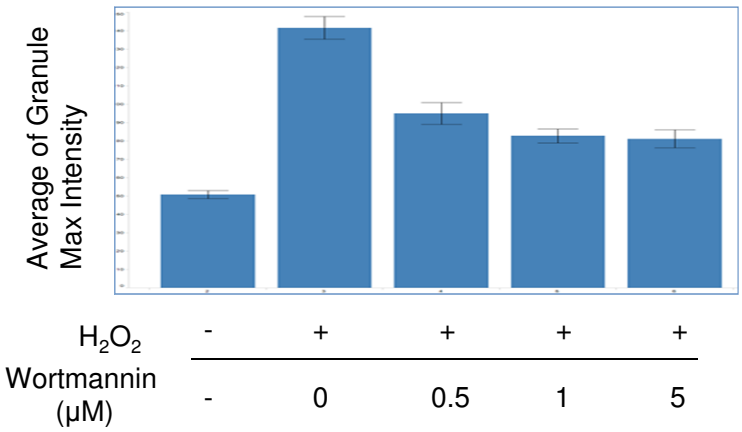


Figure 3. Inhibitory effect of wortmannin on γH2AX focus formation.
Wortmannin is a strong inhibitor of phosphatidylinositol 3-kinases (PIKs). The phosphorylation of histone H2AX Ser139 is mediated by PI-3 kinase-like kinases (PIKKs). Dose-dependent inhibitory effect on γH2AX focus formation by wortmannin was detected by CQ1 measurement.

Features and benefits
By using the CQ1 imaging cytometer and its Granule Analysis Template, quantitative analyses of γH2AX focus formation can be performed automatically. This assay system is applicable for genotoxicity evaluation of chemicals and radiation as well as other DNA damage response researches.