

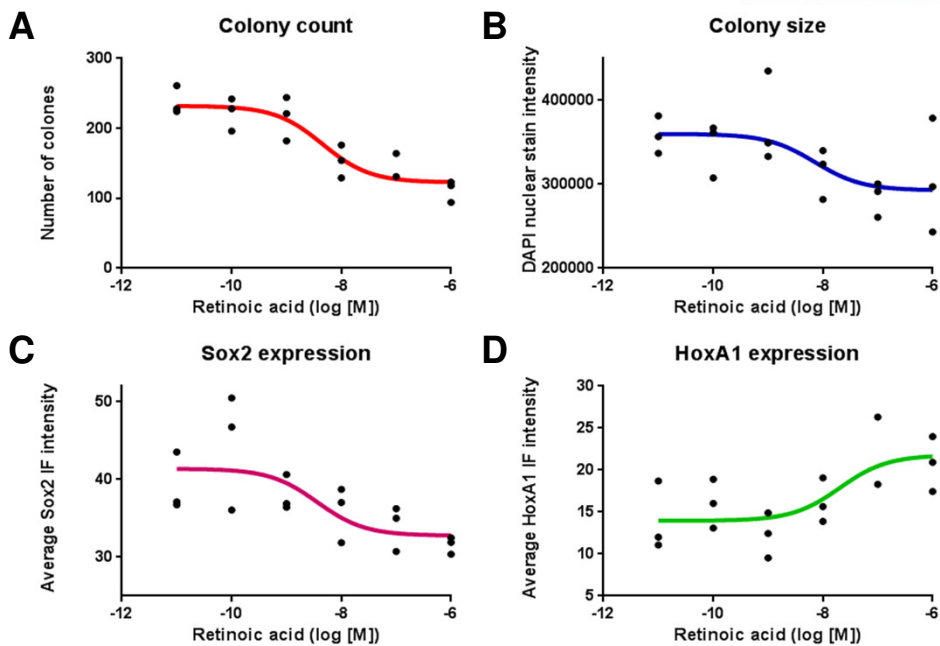
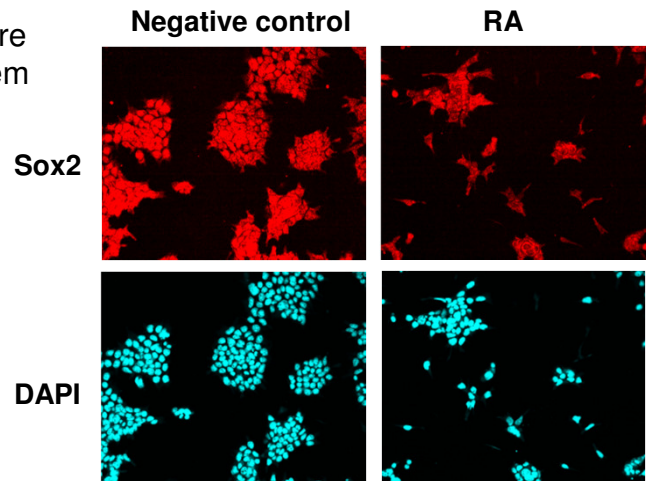
Confocal Quantitative Image Cytometer CQ1

Multi-parameter colony analysis

The CQ1 has a multicolor image acquisition feature and is suitable for obtaining rich information of stem cell colonies

Figure 1. Morphology and marker expression of F9 mouse embryonal carcinoma.

F9 cells were treated with 10^{-6} M all-trans retinoic acid for 3 days. Fixed cells were immunostained with anti-Sox2 antibody. Cell images were taken by the CQ1 with 20X objective lens.



Immunostaining

Sox2

1st Ab: Anti-Sox2 mouse monoclonal (R&D Systems)
2nd Ab: Anti-mouse IgG AlexaFluor 568

HoxA1

1st Ab: Anti-HoxA1 rabbit polyclonal (SantaCruz)
2nd Ab: Anti-rabbit IgG AlexaFluor 488

Figure 2. Multi-parameter analysis of cell response to retinoic acid.

F9 cells were treated with various concentrations of retinoic acid for 24 h. Fixed cells were double-immunostained against undifferentiation (Sox-2) and differentiation (Hox-A1) markers then measured by the CQ1; A) colony count, B) colony size, C) Sox2 expression, D) HoxA1 expression.

Features and benefits

We have carried out a model experiment to measure several parameters to evaluate differentiation status of F9 embryonal carcinoma cells by featuring the multicolor channel function of the CQ1. The data indicated that the colony size together with the expression level of protein markers could be useful for monitoring undifferentiation/differentiation status of the cells. This concept can be applicable for many types of stem cell studies.