

Radiation response on three-dimensional cell culture platform

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Radiation therapy (RT) is one of the most used clinic for cancer or tumor and composed to high energy gamma-ray. Tumor or cancer cells exposed from high energy such as gamma-ray is caused to cellular death. In the previous study, three-dimensional (3D) cell cultures are significantly different from two-dimensional (2D) cell cultures. In this study, we elucidated three dimensional cell culture system of a biocompatible agarose gel in a 96-well plate. And we cultured cancer cell lines such as HeLa and HepG2 and normal cell lines COS-7 in the agarose coated well plate. All cells were exposed to gamma-ray to investigate the effects of radio-sensitivity and radio-protection in a developed platform. In addition, Paclitaxel and Amifostine were treated in 3D platform to investigate the radiation response. We believe that a developed platform system suggests remarkable potential as a useful 3D technology can use in studying to radiation response.