



# 6<sup>th</sup> MTERMS 2016

Malaysian Tissue Engineering and  
Regenerative Medicine Scientific Meeting

in conjunction with

2<sup>nd</sup> Malaysian Stem Cell Meeting

*"Ensuring sustainability through innovative  
regenerative technologies"*

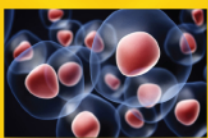


17<sup>th</sup> - 18<sup>th</sup>  
November 2016

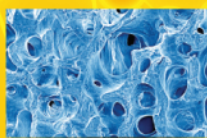


The Light Hotel  
Seberang Jaya, Penang

## Topics

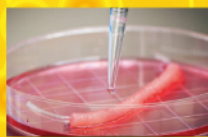


- Reprogramming and pluripotency
- Stem Cell and Cancer



- Biomaterials and Tissue Regeneration
- Transplantation and immunomodulation

- 3D Bioprinting and tissue engineering



- Cell and Gene Therapy
- Imaging and Pre-Clinical Model



## Organised by

Institut Perubatan & Pergigian Termaju (IPPT), USM and  
Tissue Engineering & Regenerative Medicine Society of Malaysia (TESMA)

## Co-organised by

Malaysian Society for Stem Cell Research and Therapy (MSCRT)

## O-SRM 2

### Effects of ionizing radiation on chondrocytes growth

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**Purpose:** To evaluate the possible effects of ionizing radiation on cellular morphology and growth kinetics of monolayer cultured chondrocytes.

**Methods:** Following research approval (IIUM/IACUC Approval/2015/[5][24]), rabbit's articular cartilage cells were isolated, cultured and divided into three groups; (1) control, (2) irradiated and (3) non-irradiated. Group 2 cells were subjected to irradiation after it reaches 80-90% confluency. While the control group was left in the incubator, groups 2 and 3 were taken out and put into a temperature-controlled container. They were transported to a typical X-ray examination room, some distance away from the incubator. After irradiating Group 2, both cells groups were returned into the incubator. The X-ray imaging parameters and the collimation used were recorded. Group 2 cells were subjected to irradiation at each different passage, from P0 till P3. Morphological observation and growth kinetics assessments were conducted on all groups after each passage.

**Results:** There are no differences in terms of cellular morphology in all groups throughout passages. The viability of all groups ranged from 94.1-98.6%. All groups showed reduction in growth rate after several passages. The non-irradiated group exhibited higher total cell yield than the other groups. The performance of growth kinetics of all groups can be appreciated as follows; non-irradiated group > irradiated > control.

**Conclusion:** Ionizing radiation may have certain effects on the growth of chondrocytes.