

EFFECT OF QUR'ANIC RECITATION ON CHONDROCYTES GROWTH USING SCRATCH WOUND ASSAY: WORK IN PROGRESS

Rosyafirah Hashim¹, Munirah Sha'ban¹, Zainul Ibrahim Zainuddin^{2*}

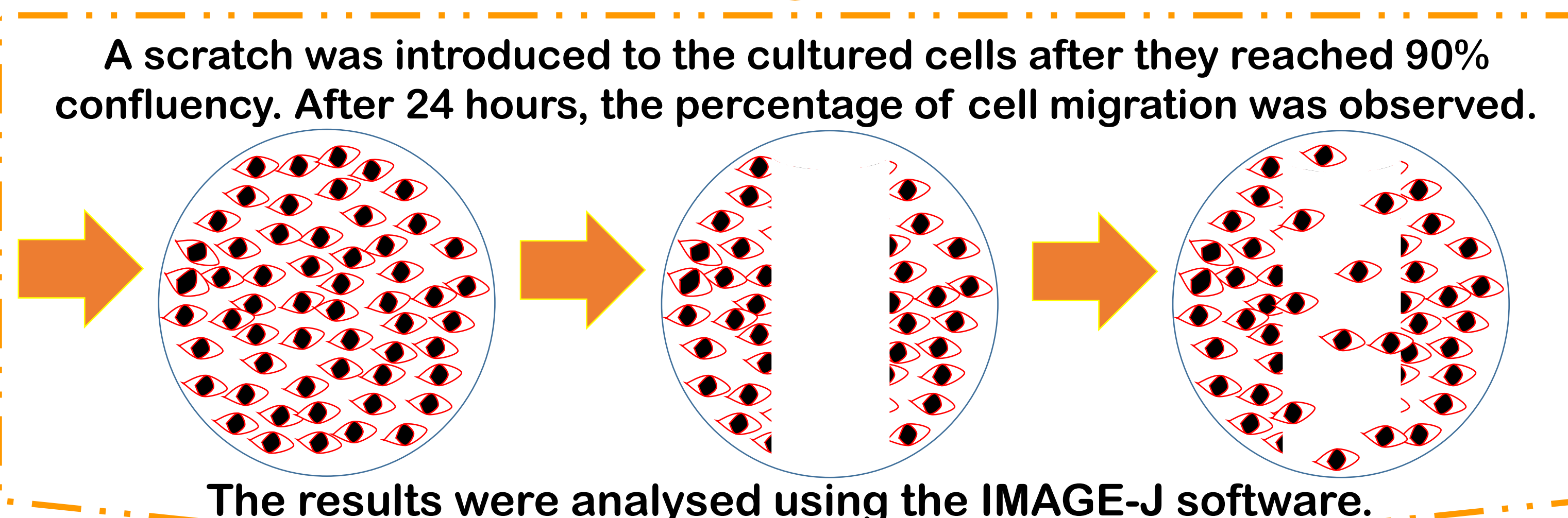
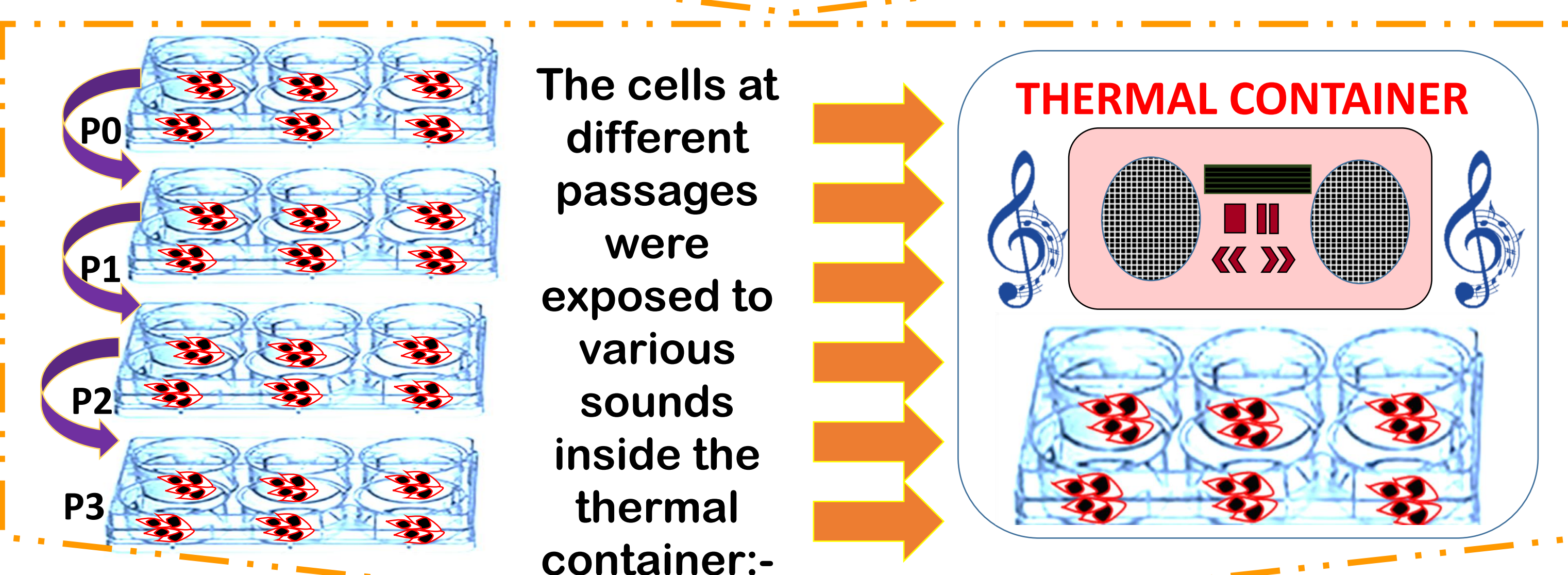
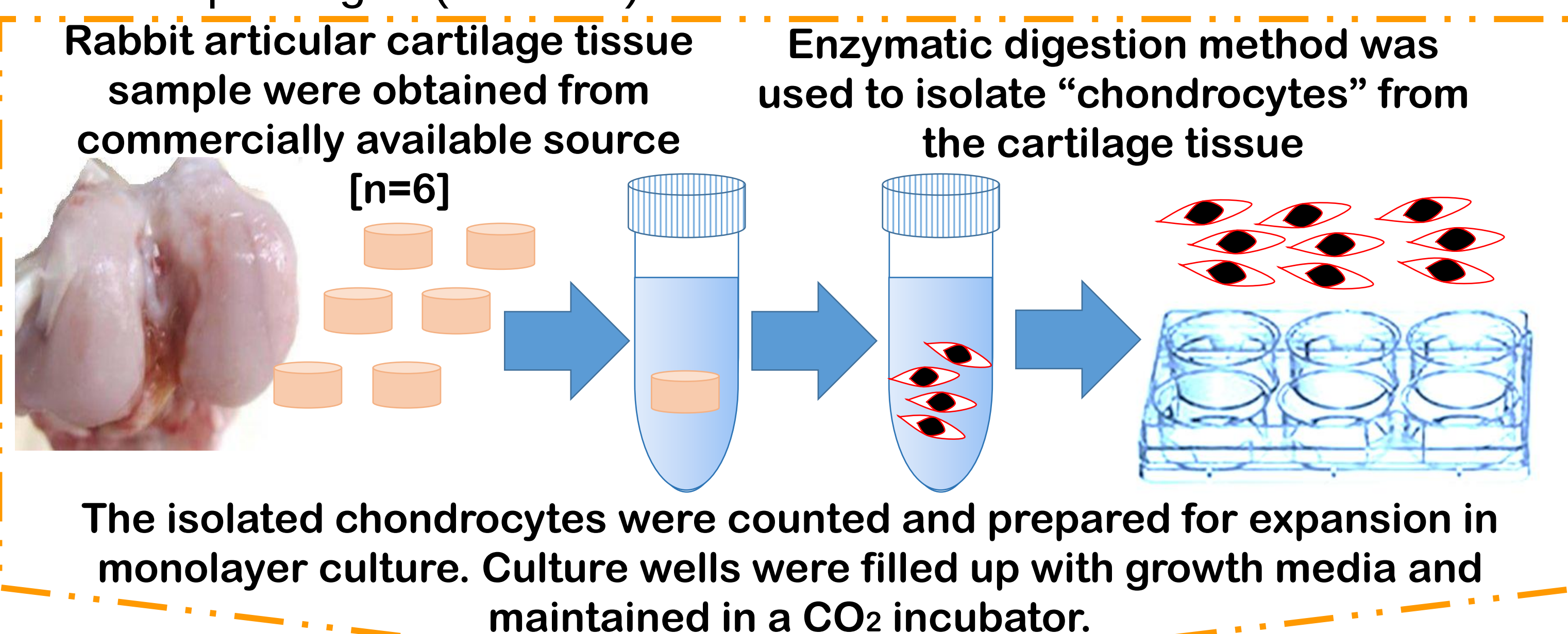
¹Department of Biomedical Science, Kulliyah of Allied Health Sciences, International Islamic University Malaysia (IIUM),

²Department of Diagnostic Imaging and Radiotherapy Kulliyah of Allied Health Sciences, International Islamic University Malaysia (IIUM),
Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, 25200 Kuantan, Pahang Darul Makmur, MALAYSIA

Introduction: The recitation of the Holy *Qur'an* is a special practice that is valued by Muslim communities across the world. In the Islamic tradition, the use of *Qur'anic* verses for therapeutic purposes can be traced back to the times of Prophet Muhammad (ﷺ). Cartilage has limited capacity for self-repair due to its avascular nature. The limited capacity to self repair could raise complications in future. Hence, efforts must be intensified to find the appropriate treatment that require a non-invasive technique such as healing with *Qur'anic* recitation.

Objective: This study aims to identify the potential effects of the *Qur'anic* recitation, particularly *Surah Al-Fatihah* on the wound healing activity of chondrocytes derived from rabbit articular cartilage.

Methodology: The study was approved by the IIUM Institutional Animal Care and Use Committee (IIUM/IACUC Approval/2015/[5]/[22]). A speaker, with recorded sounds, wrapped with plastic and treated with 70% ethanol in order to maintain the sterility was placed inside a thermal container. Four groups of cultured cells were then individually placed inside the container. Group 1 was exposed to *Surah Al-Fatihah*, Group 2 to Arabic poem, and Group 3 to Western poem. Group 4 was exposed to Mute sound where the speaker was not activated. These four groups were returned to the incubator after the exposures. The fifth group acted as control in the incubator. The intensity levels of the different sounds used were kept within normal human conversation level (~60 dB SPL). A Sound Level Meter (SLM) was used to normalize these levels. The exposure durations within the container were about 14 minutes each cycle. The process was repeated with the cells at different passages (P0 – P3).



Results: The findings indicate that the group exposed with the *Qur'anic* recitation shows the highest percentage of cell migration which is 40%. Meanwhile, the groups exposed to mute sound, Arabic poem, Western poem and control group show 28%, 25%, 24% and 17% in cell migration respectively. The results are summarized in Fig. 1-5.

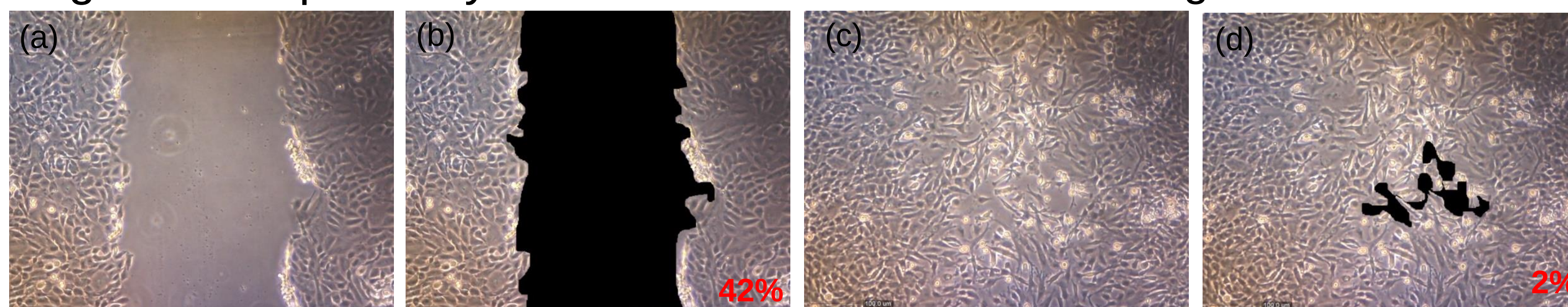


Figure 1: Cells exposed to *Qur'anic* recitation.

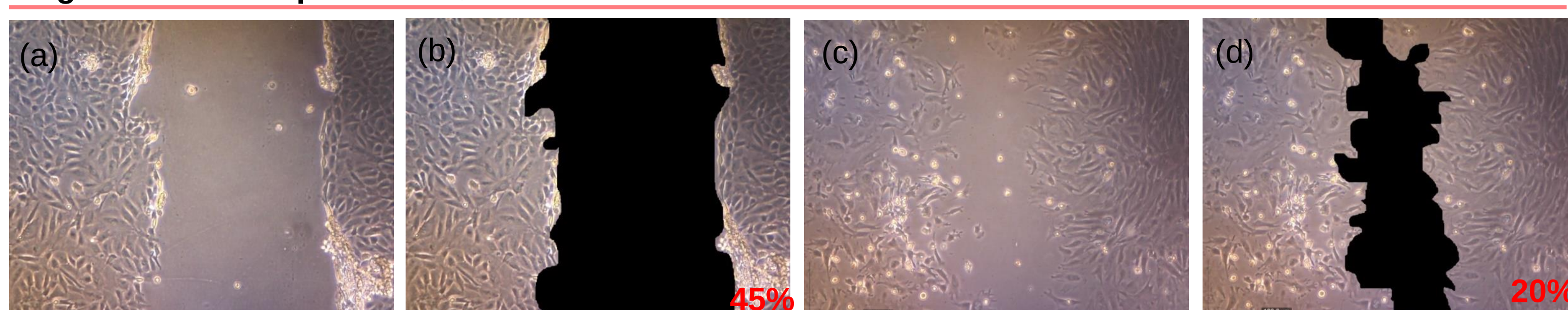


Figure 2: Exposed to Arabic poem recitation.

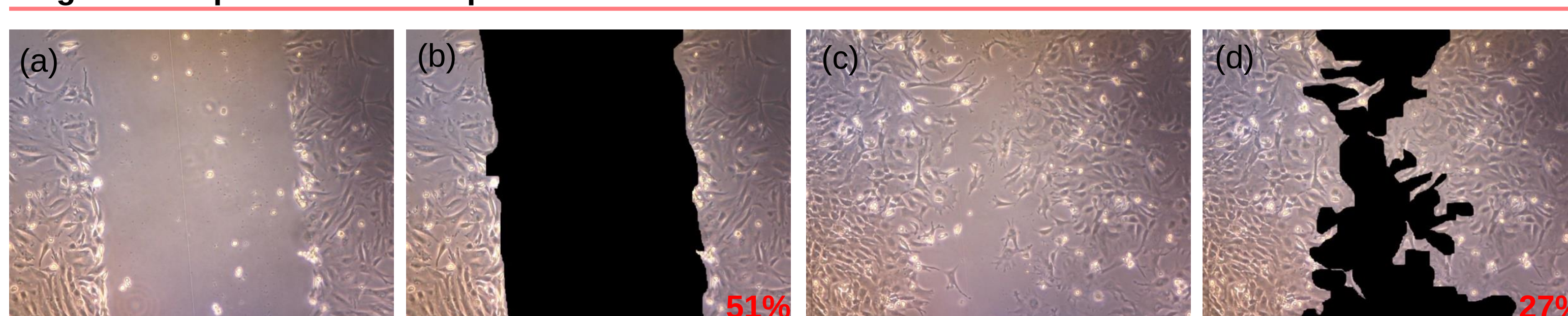


Figure 3: Exposed to Western poem recitation.

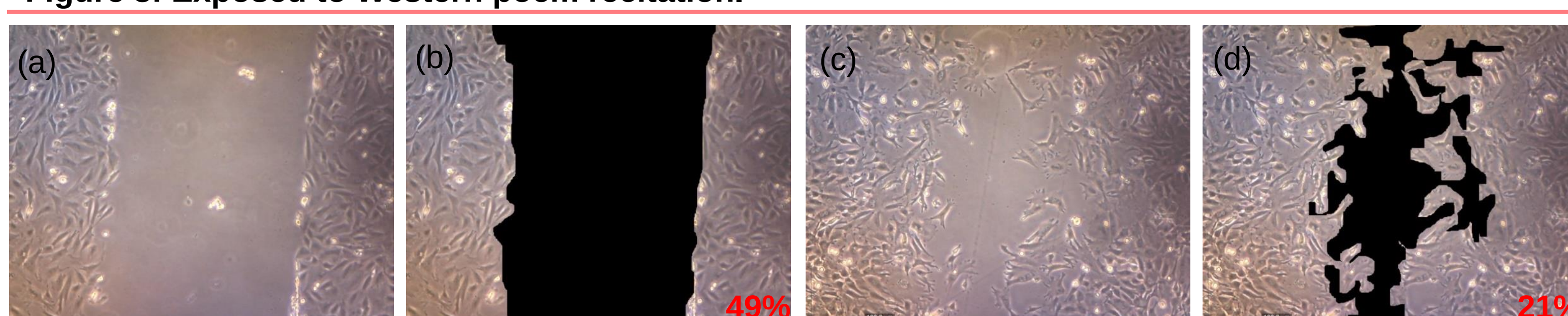


Figure 4: Exposed to mute sound.

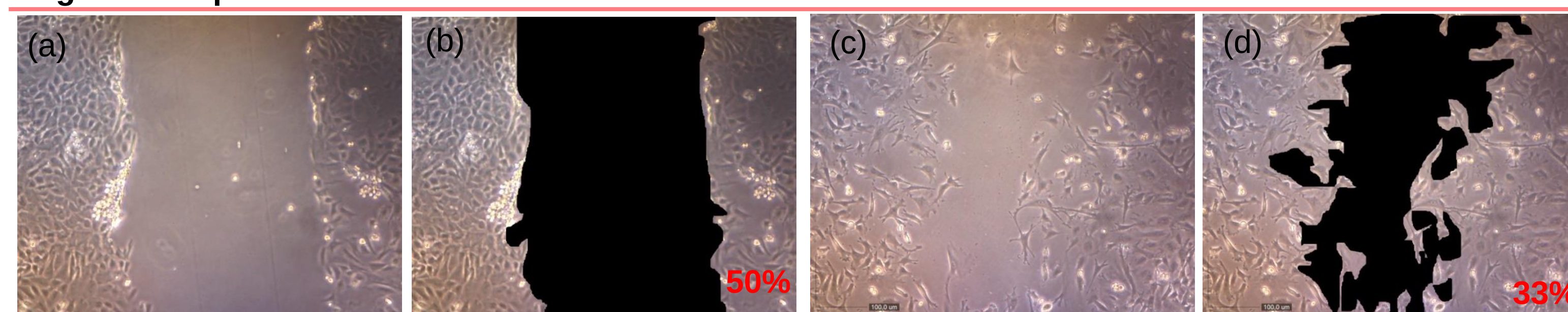


Figure 5: No exposure (Control).

Fig.1 – 5 Scratch assay analysis, (a) image after scratch, (b) image after scratch showing the percentage of region of interest (ROI) using image-J, (c) image after 24 hours after scratch, (d) image after 24 hours after scratch showing the percentage of ROI using image-J.

Discussion: The wound healing assay is a standard in vitro technique for examining collective cell migration in two dimensions. It is suggestive that proliferation of chondrocytes exposed to *Qur'anic* recitation experienced an increase in cell proliferation and a reduction in healing time. It is postulated that the *Qur'anic* recitation can become one of the healing mediums as it provide a favourable effect in increasing the cells proliferation.

Conclusion: This study shows the potential of *Qur'anic* recitation, in particular *Surah Al-Fatihah*, on the wound healing activity of chondrocytes. Hence, the chondrocytes culture results optimized in this study could pave the way for possible applications in treating injuries to articular cartilage and also be a potential approach for cartilage regeneration in tissue engineering. Further study in a larger scale needs to be conducted to deliberate this aspect accordingly.

Acknowledgment: IIUM Kuantan Campus, MIRGS13-01-002-0003 and SF14-012-0062

*Correspondence: Zainul Ibrahim Zainuddin | zainul@iium.edu.my