

## INTISARI

Replantasi merupakan penanganan ideal gigi yang mengalami avulsi, untuk menghindari kematian sel selama gigi diluar soket sebelum dilakukan replantasi gigi harus disimpan didalam media penyimpanan. Larutan *Hank's Balanced Salt Solution* (HBSS) merupakan media penyimpanan standar namun sulit ditemukan di Indonesia. Susu dinilai sebagai media penyimpanan alternatif paling baik pada beberapa penelitian. Susu saat ini dapat dengan mudah dijumpai dalam kemasan *Ultra High Temperature* (UHT), hal ini menjadi kelebihan susu sebagai media penyimpanan. Tujuan penelitian ini adalah mengetahui perbedaan sitotoksik media penyimpanan gigi avulsi larutan HBSS dan susu UHT melalui uji 3-(4,5-dimethylthiazol- 2-yl) 2,5-diphenyl tetrazolium bromide (MTT).

Penelitian ini menggunakan kultur sel fibroblas ligamen periodontal akar gigi premolar pasca ekstraksi. Sel fibroblast dikultur ke dalam *microplate* 96 sumuran dan dibagi menjadi dua kelompok perlakuan yang dipapar menggunakan HBSS dan susu UHT serta *Dulbecco's Modified Eagle Medium* (DMEM) sebagai kelompok kontrol kemudian diinkubasi pada suhu 37°C selama 60 menit.

Hasil penelitian ini menunjukkan rerata persentase viabilitas sel fibroblas yang dipapar dengan susu UHT sebesar 155,64% dan rerata persentase viabilitas sel fibroblas yang dipapar dengan larutan HBSS sebesar 104,93%. Berdasarkan uji statistik nonparametrik Mann-Whitney ditunjukkan adanya persentase viabilitas kelompok sel yang dipapar susu UHT lebih tinggi dibandingkan kelompok sel yang dipapar HBSS ( $p < 0,005$ ).

Kesimpulan yang diperoleh dari penelitian ini bahwa tidak terdapat sitotoksik pada kedua media penyimpanan larutan HBSS dan susu UHT, serta persentase viabilitas sel ditemukan lebih tinggi pada sel yang dipapar susu UHT dibandingkan dengan larutan HBSS, sehingga susu UHT dapat digunakan sebagai media penyimpanan alternatif gigi avulsi.

Kata Kunci : Avulsi gigi, susu UHT, HBSS, MTT

## ***ABSTRACT***

Replantation is an ideal management for avulsed tooth, to prevent cellular death during outside its socket before doing the replantation tooth should be placed in storage medium. Hank's Balanced Salt Solution (HBSS) is a standard storage medium which is hard to find in Indonesia. Milk is considered to be the most suitable alternative storage medium in some studies. Nowadays milk can be easily found in Ultra High Temperature (UHT) package, which makes it become the advantage of milk as storage medium. The aim of this study was to find out cytotoxic difference of HBSS and UHT milk as storage medium by using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazoliumbromide (MTT) assay.

This study used periodontal ligament fibroblast cell culture of post-extraction premolar roots. The fibroblast cells was cultured in microplate 96-well and divided into two treatment groups that was exposed by HBSS and UHT milk, as well as Dulbecco's Modified Eagle Medium (DMEM) as a control group, then they were incubated at 37°C within 60 minutes.

The result of this study showed that the mean percentage of UHT milk-exposed fibroblast cells viability was 155,64%, while the HBSS's was 104,93%. Based on nonparametric Mann-Whitney statistical test, the cells viability percentage of UHT milk-exposed group is higher than HBSS's ( $p < 0,005$ ).

The conclusion of this study was there was no cytotoxicity in both HBSS and UHT milk storage medium, and the cellular viability percentage found to be higher in UHT milk-exposed cell than HBSS-exposed cell, thus UHT milk can be used as an alternative for avulsed tooth storage medium.

Key words : Avulsed tooth, UHT milk, HBSS, MTT