



## GEL ICE VALIDATION IN TISSUE BANK UNIVERSITI SAINS MALAYSIA

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### SUMMARY

Frozen tissue allograft must be stored below  $-40^{\circ}\text{C}$  up to  $-80^{\circ}\text{C}$  in alarmed deep freezer in order to maintain the function of tissue itself and to avoid any changes in physical properties before graft being released. During tissue transportation either for delivery, irradiation and collection, frozen tissue graft must be kept and monitored in the specific temperature or environmental conditions set by USM Tissue Bank to ensure that tissue arrived at destination in a good condition and within acceptance temperature range. To determine the time taken for temperature to drop below  $0^{\circ}\text{C}$  during transportation of frozen tissue allograft, three type of packaging container containing gel ice are tested. Frozen bone and soft tissue dummies, three different sizes of container and gel ice were prepared as needed. Tissues are arranged accordingly in the container and being placed at two type of ambient temperature which is as normal ambient/room temperature and extreme temperature/outside Tissue Bank. Result of this study show that average time taken for the temperature in the container to reach  $0^{\circ}\text{C}$  differs according to dimension of container, number of gel ice used and ambient temperature. Tissue with longer transportation period required more detailed planning in choosing the transportation mode complemented with stricter environmental control. In conclusion, mode of packaging and environment factor affect the overall durability of the gel ice and the validation is accepted for implementation at USM Tissue Bank.