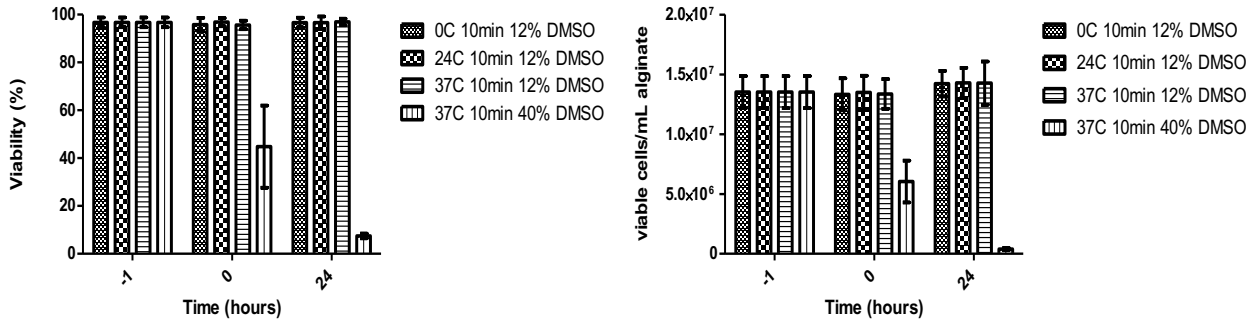

Figure 1 ***Toxicity of 12% DMSO at different temperatures****. Toxicity of 12% DMSO at different temperatures. There was no difference in HepG2 viability after exposure to 12% DMSO at any temperature. The groupings portray viability measurements of 4 groups of fresh AELS (time -1), viabilities immediately after DMSO exposure and washing (0h) and viabilities after DMSO exposure, washing, and 24h onwards culture (24h). Viability did not fall below 95% in any condition with 12% DMSO exposure , and did not affect viable cell number, both immediately after DMSO wash, and after onwards culture for 24h; toxicity was only evident after exposure to extremely high 40% DMSO (negative control).*

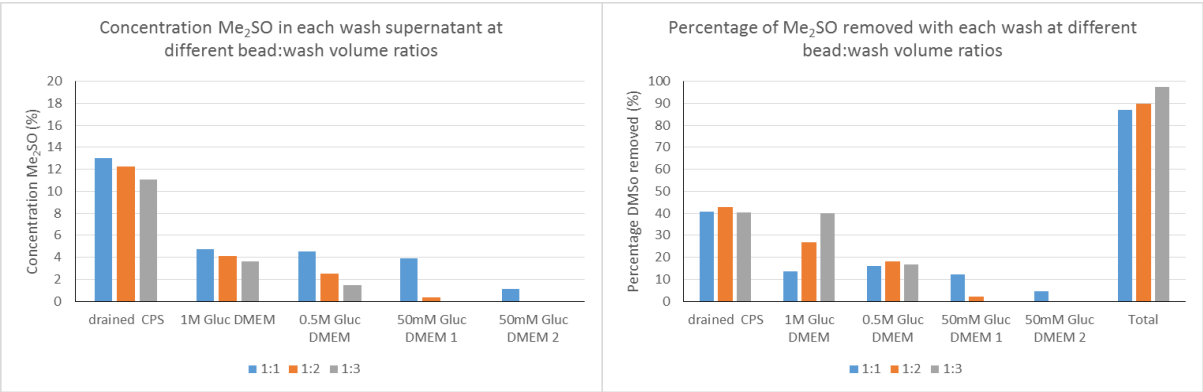

Figure 2 Concentration DMSO in AELS after each post thaw wash. *After 4 washes the wash supernatants did not contain any traceable amounts of DMSO at wash ratios of 1:2 & 1:3, at 1:1 ratio the wash contained 1% DMSO by volume. In terms of removal of DMSO the 1:1, 1:2, 1:3 bead: wash ratios removed 87%, 90% & 97% of the total added DMSO respectively.*

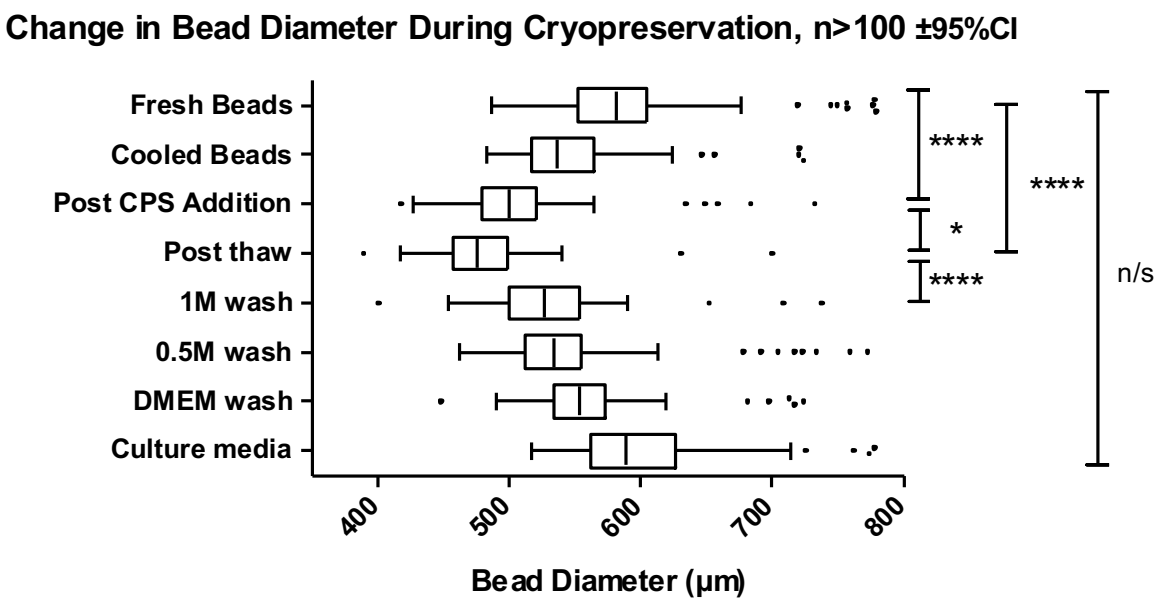

Figure 3 Change in bead diameter at each stage of the cryopreservation process.*As the microbeads are spherical, bead diameter can be taken as a reflection of bead total volumes. Bead diameter changed gradually at every stage of the cooling and warming process. There was a notable reduction in bead diameter after CPA addition. There was no difference in bead diameter between fresh beads prior to cryopreservation and cryopreserved beads that had been returned to culture for 24h ($p>0.05$).*