

SUMMARY

As corroborated by the experimental section, which illustrates certain representative embodiments of the present disclosure, the inventors have realised that mesenchymal stem cells (MSC) or MSC-derived cells subjected to non-cryogenic suspension storage in liquid storage media based on human plasma or human serum displayed advantageous cell product viability and stability, even after storage for extended time periods. The present findings are unexpected, *inter alia* because equine plasma and serum have been reported as less satisfactory than a number of other liquid media, most prominently physiological saline, for suspension storage of horse MSC for 24 hours, and because cryopreservation has in any event been recommended for longer storage periods of the horse MSC (Garvican et al.).

Accordingly, the present disclosure provides a method for *in vitro* preservation of cells comprising maintaining adherent mesenchymal stem cells (MSC) or adherent MSC-derived cells in suspension in a composition comprising at least 20% v/v human plasma or human serum or a mixture thereof. Preferably, the present disclosure provides a method for non-cryogenic *in vitro* preservation of cells comprising maintaining adherent MSC or adherent MSC-derived cells in suspension in a composition comprising at least 20% v/v human plasma or human serum or a mixture thereof.

In one aspect of the present disclosure, there is provided a method for non-cryogenic *in vitro* preservation of cells comprising maintaining adherent mesenchymal stem cells (MSC) or adherent MSC-derived cells in suspension in a composition comprising at least 20% v/v human plasma or human serum or a mixture thereof, wherein the composition is maintained at or below ambient temperature.

The above and preferred embodiments of the present disclosure are described in the following sections and in the appended claims. The subject matter of appended claims is hereby specifically incorporated in this specification.

BRIEF DESCRIPTION OF DRAWINGS

Fig. 1 illustrates the proportion of living cells in a population of human MSC-derived osteoblastic cells after suspension storage at 2-8°C in the indicated storage media for 24, 48, 72, 96, 144 or 192 hours. NA (in this and subsequent figures): not available. "Standard excipient" (in this and subsequent figures): Plasma-Lyte[®] supplemented with 5% w/v HSA; "Plasma" (in this and subsequent figures): 100% Octaplas[®]; "Serum" (in this and subsequent figures): 100%, autoserum; HSA-enriched serum: Autoserum supplemented with 50% w/v human serum albumin (HSA).

Fig. 2 illustrates light microscopy images of human MSC-derived osteoblastic cells after suspension storage at 2-8°C for 72 hours in the indicated storage media, re-plating, and culturing for 24 hours.

Fig. 3 illustrates flow cytometric analyses of marker expression by human MSC-derived
5 osteoblastic cells after suspension storage at 2-8°C in the indicated media for the indicated times.