

CellShip®: Transporting canine stem cells for clinical application, without cryopreservation.

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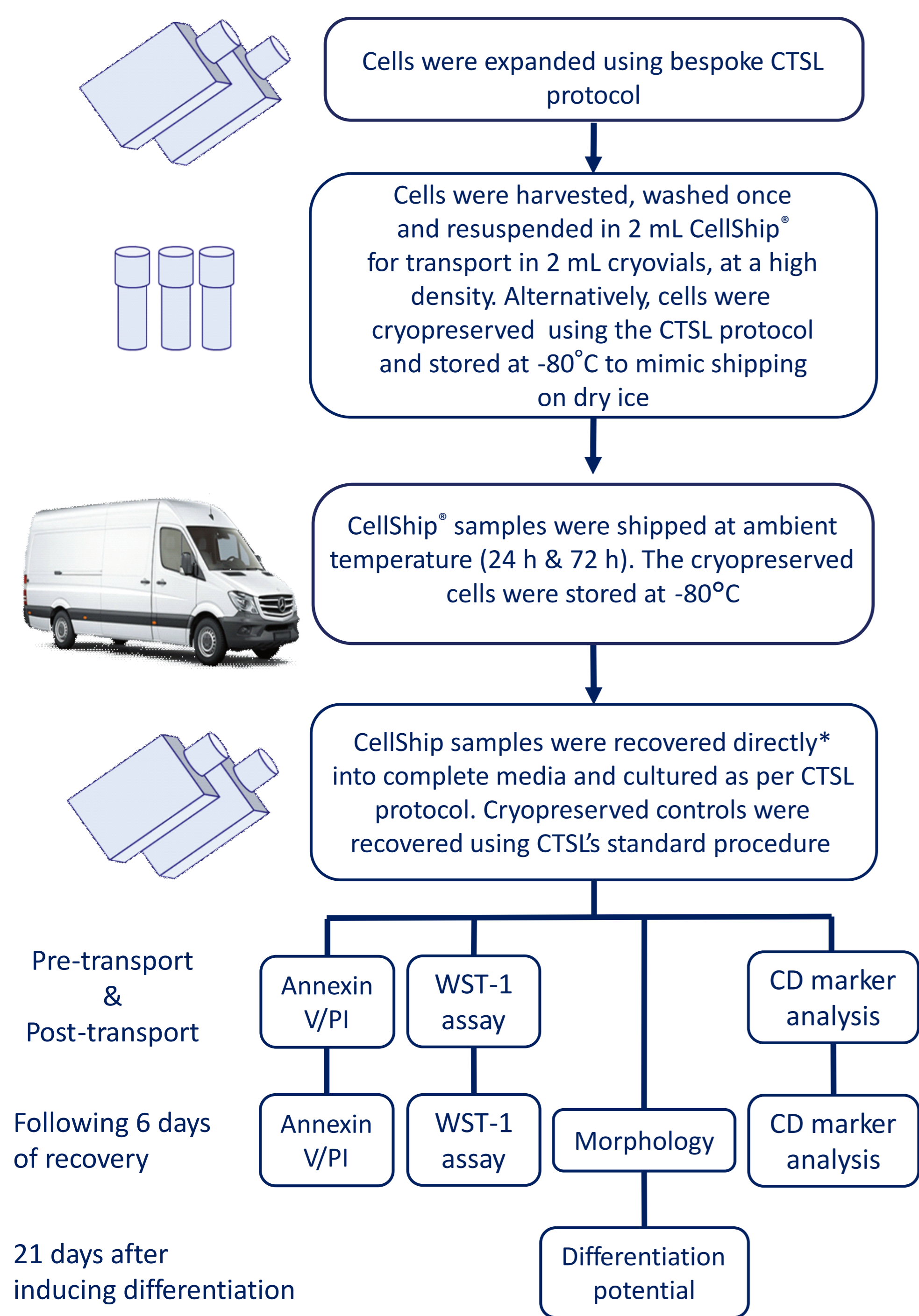
Background

The field of regenerative medicine for both research and clinical application is expanding rapidly, in both human and veterinary practice. In veterinary practice, the use of autologous stem cells to treat conditions such as osteoarthritis in companion animals is becoming increasingly routine. Following MSCs isolation and expansion from an adipose biopsy the cells are cryopreserved and returned to the veterinary practice for administration, using dry ice.

This process presents several logistic issues, including cost of transport, specialist handling and scheduling limitations.

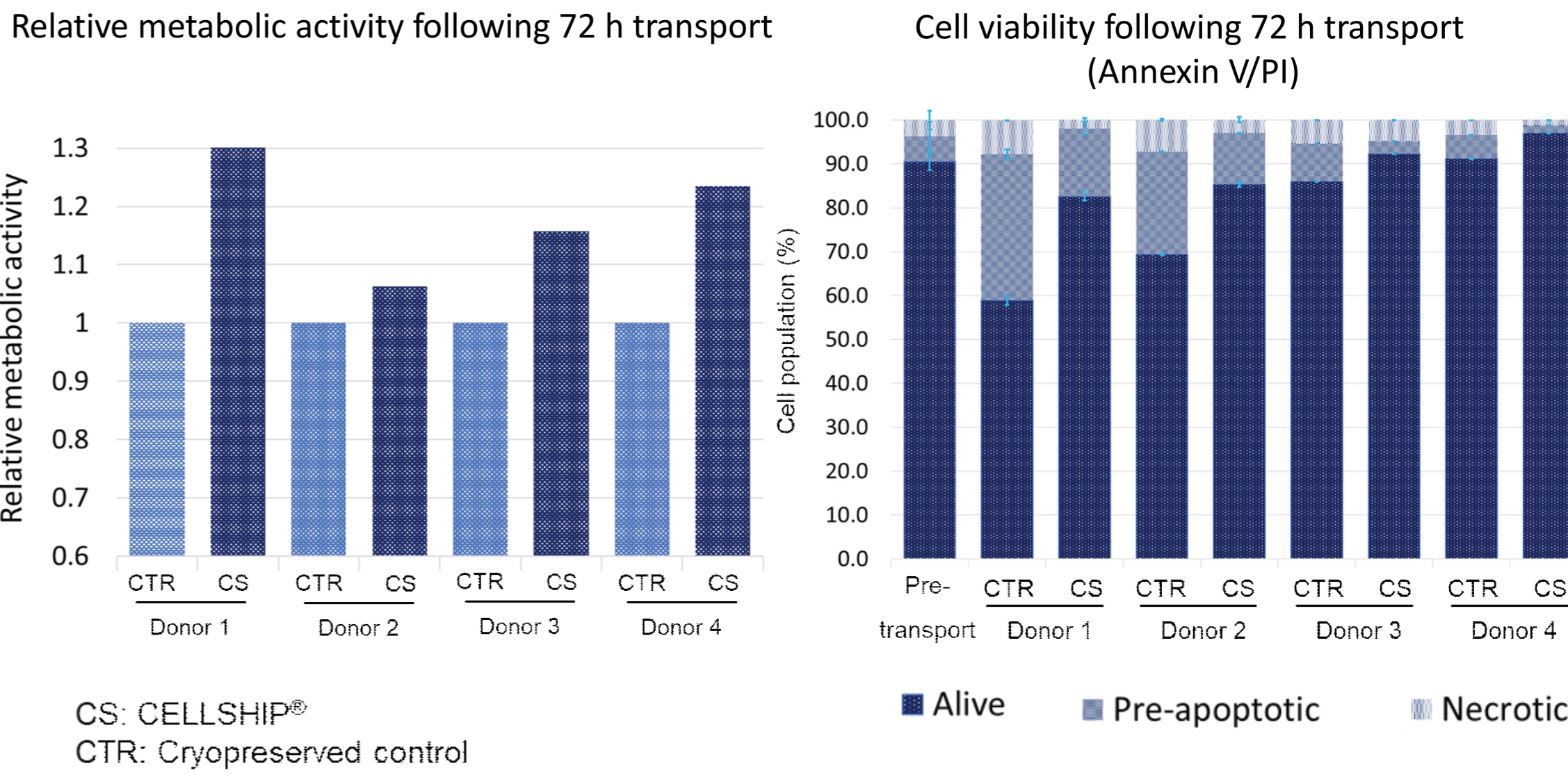
Methods

Primary adipose derived canine MSCs were provided by our collaborator Cell Therapy Science Ltd (CTSL), from excess clinical material with owner agreement. Cell numbers were increased using CTSL's bespoke protocols.



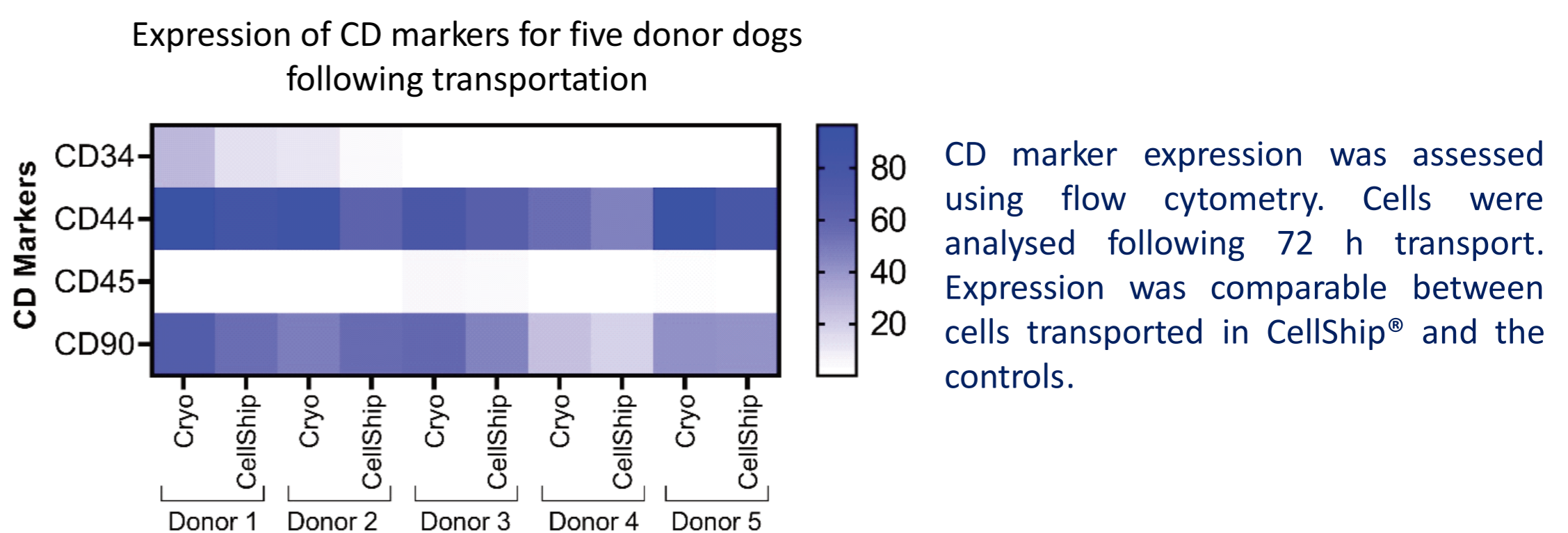
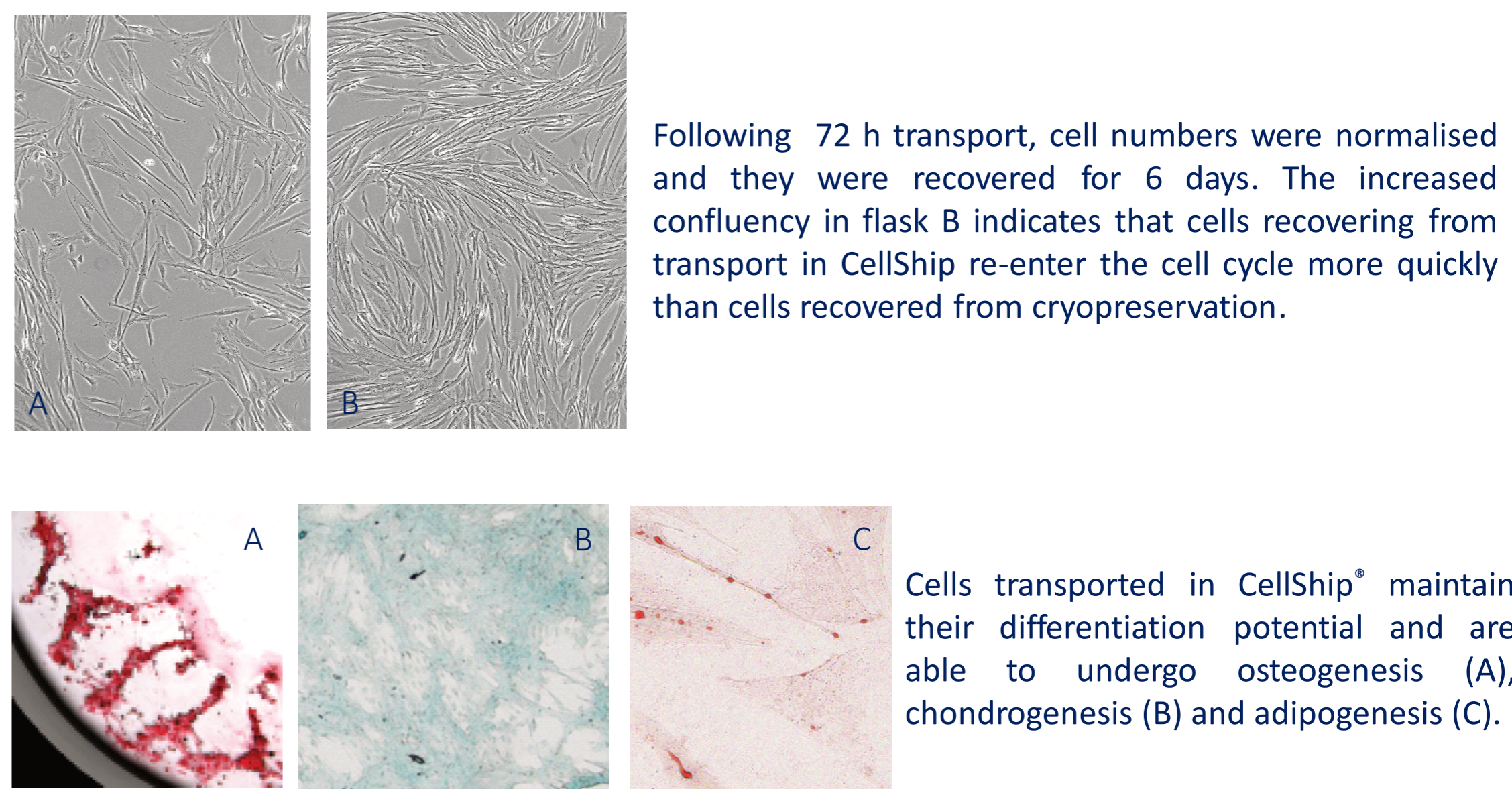
Results

For each donor, MSCs transported in CellShip® showed a lower proportion of pre-apoptotic cells than the controls, and metabolic activity was either slightly higher or comparable to the controls. CD marker analysis presented comparable results between transport methods. Regardless of the transport method, cells were able to undergo chondrogenesis, osteogenesis and adipogenesis.



A WST-1 assay was used to assess metabolic activity. Cells were analysed following 72 h transport (cell numbers normalised).

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Conclusion

This pilot study suggests that CellShip® may provide a suitable alternative to cryopreservation and transportation of primary canine MSCs using dry ice, thereby reducing the logistic and cost challenges associated with cryogenic cell transport.

For more information and to request samples of this innovative cell transportation and storage medium, please contact:
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or visit lifescienceproduction.co.uk



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