

Does freeze-thawing and IV delivery affect the therapeutic potential of mesenchymal stromal cells?

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Credit: Mary Ann Liebert, Inc., publishers

Before the therapeutic potential of using human tissue-derived mesenchymal stromal cells (MSC) to treat immune and degenerative diseases can be fully determined, the effects of freeze-thawing and intravenous delivery on MSC function must be understood. A new study reporting the changes in MSC gene expression associated with cryopreservation and exposure to the mouse lung is published in *Stem Cells and Development*, a peer-reviewed journal from Mary Ann Liebert, Inc., publishers. The article is available free on the *Stem*

Cells and Development website until June 2, 2016.

In "Effects of Freeze-Thawing and Intravenous Infusion on Mesenchymal Stromal Cell Gene Expression," Martin J. Hoogduijn and coauthors from Erasmus MC (Rotterdam, Netherlands), Lund University (Sweden), Charité Universitätsmedizin Berlin (Germany), and Karolinska Institutet (Stockholm, Sweden), exposed MSC derived from human fat tissue to a freeze-thaw cycle and analyzed the cells for changes in gene expression one hour after thawing. The researchers intravenously injected the MSC into mice, where the cells initially accumulated in the lungs. The results indicate that the lung microenvironment has a major effect on MSC [gene expression](#), which could affect their therapeutic use for reducing inflammatory responses in immune disorders.

"At *Stem Cells and Development*, we are proud to publicize the careful, considered work being performed around the world by great research teams exemplified by the Hoogduijn paper, providing the rigor and characterization necessary to achieve responsible, effective translation to the clinic," says Editor-in-Chief Graham C. Parker, PhD, The Carman and Ann Adams Department of Pediatrics, Wayne State University School of Medicine, Detroit, MI.

More information: Martin J. Hoogduijn et al, Effects of Freeze–Thawing and Intravenous Infusion on Mesenchymal Stromal Cell Gene Expression, *Stem Cells and Development* (2016). [DOI: 10.1089/scd.2015.0329](https://doi.org/10.1089/scd.2015.0329)

Provided by Mary Ann Liebert, Inc

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