Background
Lion Biotechnologies focuses on the development to commercialization of cancer immunotherapies based on tumor-infiltrating lymphocytes (TILs). Cryopreservation of TILs allows the final cell product to be shipped in a safe manner with less temporal constraints. Clinical studies using cryopreserved TIL have not been conducted so far. Freezing and thawing of the cells may cause phenotypic changes such as loss of cell surface receptors. Here, we tested fresh versus frozen/thawed TIL samples and evaluated the expression of individual phenotypic markers.

Results
No significant differences in CD4, CD8, NK, TCRαβ expression, or memory markers comparing fresh versus thawed TIL were observed. The activation status of TIL as defined by HLA-DR, CD38, and CD69 expression was maintained while regulatory molecules LAG-3 and TIM-3 demonstrated a slight decrease in expression. In addition, the viability of both the fresh and thawed product was greater than 86%.

Conclusions
Cryopreservation did not affect the measured phenotypic characteristics of TIL, with the exception of modest changes in some regulatory molecules.

We are investigating the possibility of using cryopreserved TIL in a clinical setting.

References

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