**CONCLUSIONS & SIGNIFICANCE**

From the preliminary results gathered, it is evident that IL-2 expanded NK cells were able to greatly proliferate when cultured with RP-10 media with IL-2, demonstrating the possibility of efficient effector functions with further proliferation with glutamine-free RP-10 media. It is important to note the morphology transformation in the cells, for it is indicative of possible metabolic change derived from the change in culturing environment. The elongation of the cells clearly demonstrate that the cells are able to greatly proliferate within the given conditions. Since this study is limited to *in vitro* & *in vivo* conditions, it will be insightful to observe the cells under molecular levels as well.

Through the study, more effective treatments to enhance NK cells’ activity and suppression of tumor cells will be developed. If the cells show great potential in proliferating under different types of stressful environments, the resulting treatment will be applicable to a wider range of patients for it is able to flourish in conditions that are not as favorable as normal cells would need in order to perform their base functions. It will greatly advance NK cell-based adoptive transfer therapy and allow treatments that break the present limitations to improve the conditions of patients suffering from terminal cancers.

**FUTURE DIRECTIONS**

Further experimentation is advised to fully test the hypothesis; the possibility of cell proliferation was only tested with IL-2 culturing; thus, the next step would be to culture the IL-2 expanded NK cells with glutamine-deprived RP-10 media.

After the results have been obtained, it is advised to study future possible applications, such as its relevance to adoptive transfer therapy or cancer immunotherapies.

**ACKNOWLEDGMENTS**

I would like to thank Professor Lee for graciously agreeing to accept me as his UROP student, and all of the members in the Lee lab for their never-ending support and guidance.

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**REFERENCES**

Kim, Minjun. Metabolic Reprogramming of IL-2-expanded NK cells for Cancer Immunotherapy. Poster session present at: 2015 Canada Korea Conference for the Association of Korean Canadian Scientist and Engineers; 2015 July 25-28; Calgary, Canada.