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Editorial Team
JoVE

July 30th, 2018

Dear Scientific Editors,

Please, find enclosed our manuscript entitled, “Multicolor flow cytometry-based quantification of mitochondria and lysosomes in T cell”, to be considered for publication in *JoVE*.

T cells are an essential part of adaptive immunity, protecting us from pathogens and altered own cells. It is known that for T cells to be activated and perform their functions, they need to go through intensive metabolic reprogramming to meet their biosynthetic demands. Mitochondria and lysosomes are crucial participants in this cellular metabolic regulation, and the measurement of mitochondrial and/or lysosomal contents has been considered crucial indicators to evaluate the T cell metabolic and functional status. However, current available assays such as electron microscopy or immunofluorescent staining demands a fixed homogenous cell population with large cell numbers as starting material to obtain the best results. In this manuscript, we assembled a protocol that combines organelle-specific dyes such as LysoTracker/MitoTracker with surface markers staining to quantify the intracellular lysosomes and mitochondria in live immune cell populations.

Given the high interests of the vast and fast-moving field of immunometabolism and tumor immunology, we believe that the method presented in our manuscript will appeal to a great numbers of *JoVE* readers, which encompass biomedical, biochemical, and clinical science researchers. Moreover, the technique described here can be easily modified and applied to various cell types of interests.

This manuscript illustrates an original method developed in our lab and is not under consideration for publication by any other journal. All authors approved the manuscript and this submission. The authors have no conflicts of interest to declare. If you find our manuscript appropriate for *JoVE*, we would like to recommend the following researchers as potential scientific reviewers for this paper:

Dr. Motonari Kondo, Toho University School of Medicine, Japan,

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Dr. Heather Melichar, University of Montreal, Canada,

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Dr. Chien-Kuo Lee, National Taiwan University, Taiwan,

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Thank you for receiving our manuscript and considering it for review. We appreciate your time and look forward to your response.

Sincerely,

A handwritten signature in black ink, appearing to read 'Chia-Lin Hsu', with a stylized, flowing script.

Chia-Lin Hsu, Ph.D.
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