

DEPARTMENT OF PATHOLOGY

733 North Broadway, MRB 639

Baltimore, MD 21205

410-614-4589 (Phone)

443-287-0993 (Fax)

[jschnec1@jhmi.edu](mailto:jschnec1@jhmi.edu)

Jonathan P. Schneck

Professor

Program in Immunobiology

June 18, 2018

Dear Editors:

We are pleased to submit our manuscript titled “**Making Magnetic Nanoparticle Artificial Antigen-presenting Cells to Enrich and Expand Rare Antigen-specific T cells.**” for publication in *JoVE* as invited by Dr. Jialan Zhang, a science editor at *JoVE*.

We have centered our manuscript around our recent method of isolating and stimulating rare antigen-specific CD8+ T cells to high numbers and percentages after only one week. First, we describe in detail the loading of different antigens into the MHC. Second, we provide several different conjugation methods to attach peptide-MHC and co-stimulatory molecules to the surface of paramagnetic nanoparticles to form artificial antigen presenting cells. Third, we specify how to characterize these particle artificial antigen-presenting cells for quality control. Fourth, we outline the process for using a magnetic field to isolate these nanoparticles to enrich antigen-specific cells. Fifth, we describe how to expand the enriched fraction and detect antigen-specific CD8+ T cells after only seven days of culture.

*JoVE’s* broad audience and video methods platform makes it an ideal journal for this work. Furthermore, we believe that this specific technical description of particle fabrication and assay with immunotherapeutic applications will draw interest from both clinical and biological fields to *JoVE.*

Thank you for your time and consideration.

Sincerely,

cid:image001.jpg@01CBDE7B.9F1B9600

\*Corresponding author, email: [jschnec1@jhmi.edu](mailto:jschnec1@jhmi.edu)