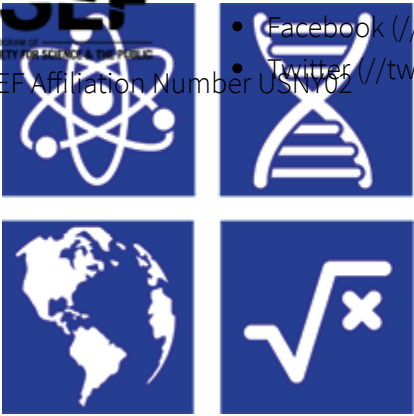


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# Assessing the Crosstalk between CD47 and SIRP-alpha and its Role in Modulating Tumor Cell Growth (Project ID# 038)

Project Certified

## School

Massapequa High School

## Adult Sponsor

Paul Hesleitner

## Category - Subcategory

Biomedical and Health Sciences(BMED) - Immunology(IMM)

## Project Files

Download Project PDF (<https://www.lisef.org/app/lisef/liaison/project-register/38/uploads/project>)

Human Subject Consent Form Not Uploaded

## Project Abstract

CD47 has been found to be overexpressed in melanoma, leukemia and lymphoma tumors and to bind with SIRP $\alpha$  to avoid phagocytosis. However, in melanoma cells, blocking CD47 expression does not enhance the phagocytosis process. Surprisingly, we found and confirmed that melanoma cells express SIRP $\alpha$ , and so became curious as to if the CD47 and SIRP $\alpha$  interaction within tumor cells had a biological function to modulate tumor cell growth. To test, cell viability was assessed by MTT assay and flow cytometry. Gemcitabine was used as positive control, and the antibody against murine CD47 (clone MIAP301) was used. Results indicate that

gemcitabine was effective in decreasing the viability of cells by around 50% in all tumor cells studied. In RAW264.7 cells and B16 cells, but not MC38 cells, cell viability was decreased upon administration of the CD47 blocking antibody. Flow cytometry data also confirmed the CD47 and SIRP $\alpha$  expression of the corresponding cells. The data suggests that there is a biological function in the crosstalk of CD47 and SIRP $\alpha$  and that it modulates cell viability, as well as a potential biological function of CD47 and SIRP $\alpha$  interaction in RAW 264.7 cells.

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Regeneron STS

**Will Submit**

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Form 1A

Form 1B

Form 1C

Form 2

Form 3

Form 6A

Form 6B

**Involves**

Hazardous Chemicals, Activities or Devices

**Qualified Scientist**

Yes

**Designated Supervisor**

Yes

Juliane Leigh Baco (User ID# 045)

Student Certified

12th grade, Female, DOB: 08/25/2002, Regular Lunch, U.S. Citizen

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