

Antiviral Activity of *Psidium guajava* Against Herpes Simplex Type 1

Claudia Melo and Nadjat Cornejal

Mentors: José A. Fernández Romero and Adolfina Koroch
Science Department, Borough of Manhattan Community College

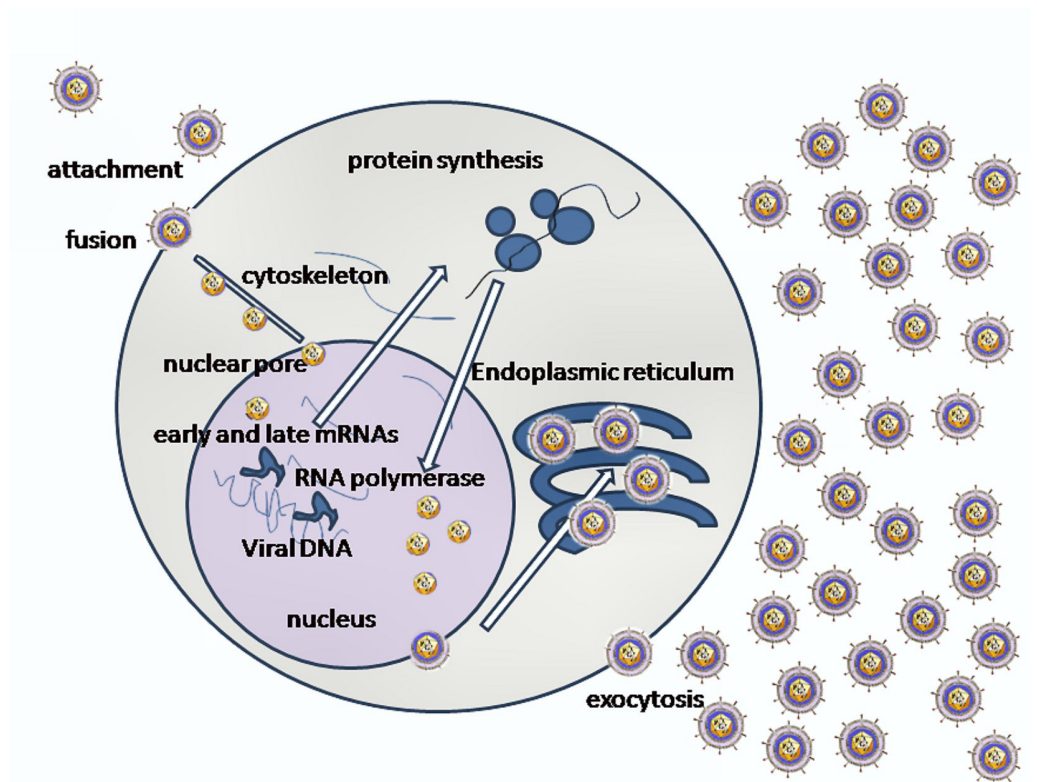


What is Guava?



Herpes-Simplex Type-1

- Attachment
- Entry
- Replication
- Assembly
- Release



https://en.wikipedia.org/wiki/Herpes_simplex_virus

Objective

To test the *in vitro* antiviral activity of a commercial guava tea sample against herpes simplex virus type 1 (HSV-1).

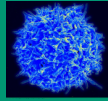
Materials & Methods



A dry commercial sample of guava leaves from the brand Sipacupa (Sipacupa, Leonard Rd, Kingston) was used in this study



The grounded material was dissolved in 60% Ethanol, evaporated and finally resuspended in 20% dimethyl sulfoxide

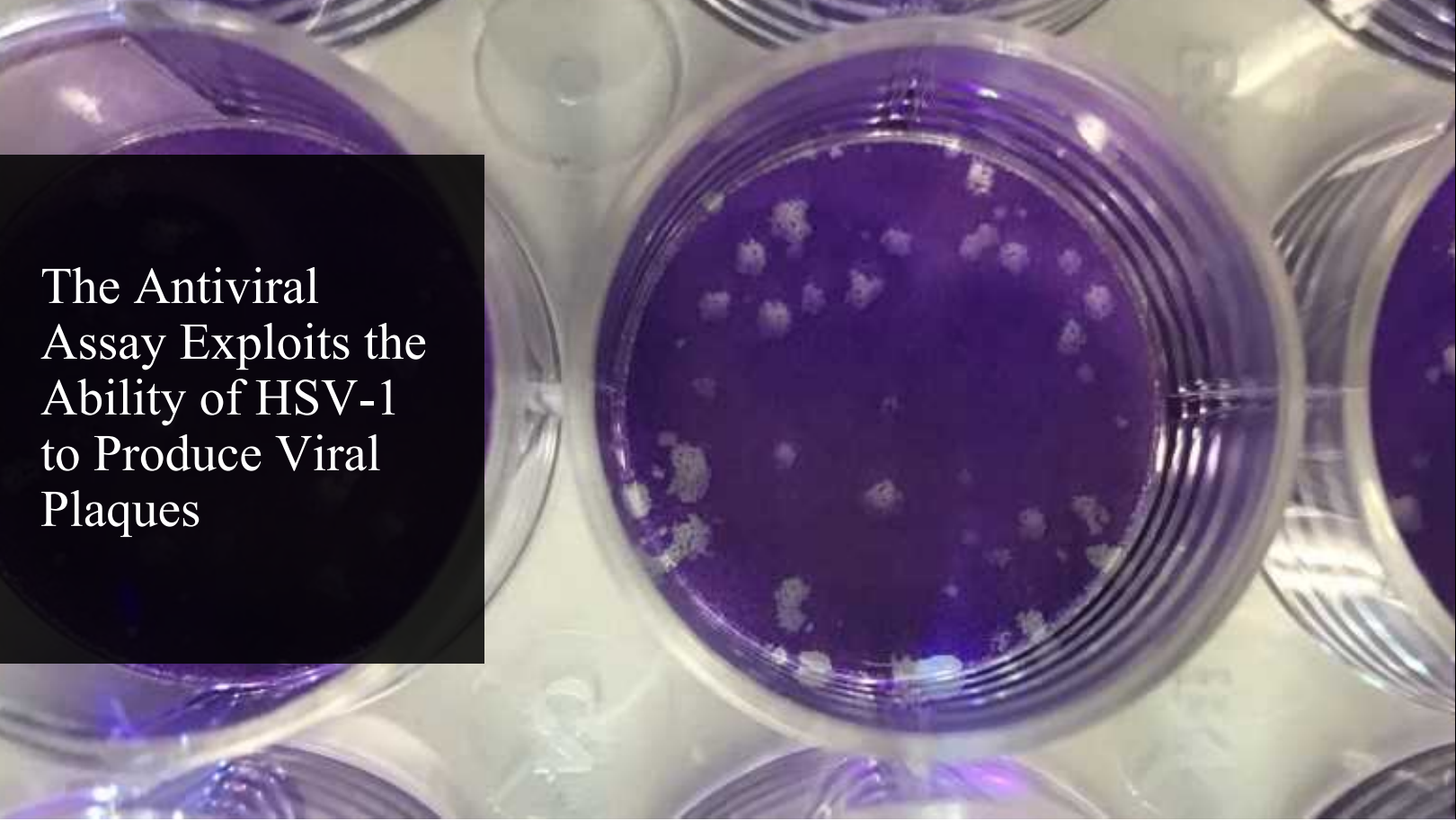


The cytotoxicity of the plant extract was estimated using the XTT colorimetric assay.



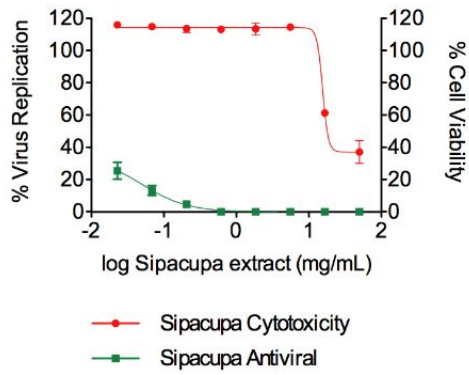
The anti-HSV-1 activity of the plant extract was evaluated using the plaque-reduction assay.

The Antiviral Assay Exploits the Ability of HSV-1 to Produce Viral Plaques

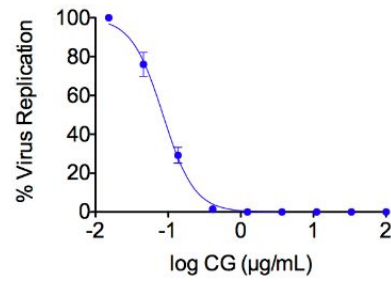


The Sipacupa Extract has a Selective Anti-HSV-1 Activity

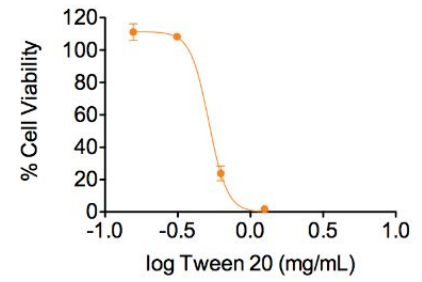
A



B



C



Conclusions & Future Steps

The Sipacupa extract has an EC50 value lower than 20 $\mu\text{g}/\text{mL}$ against HSV-1

The therapeutic index ($\text{TI}=\text{CC50}/\text{EC50}$) is higher than 750.

Future experiments should explore the leaves chemical composition and the potential mode of action against HSV-1.

Acknowledgments

- We thank BARS 2020 for the opportunity to present our research project
- We want to recognize our mentors Professors José Fernández Romero and Adolfinia Koroch for guiding us in this research project and given us the opportunity to work with them.
- We thank the Science Department and the Office of Research at BMCC. We also thank the CUNY Research Scholar Program.