Antihelmintic activity of extracts of papaya and avocado seed using *Caenorhabditis elegans* as biological model

Liset Paola Mallarino Miranda[1], Lesly Patricia Tejeda-Benitez[1], Leanny MalenaTejeda-Benítez[2]

[1]Biomedical, Toxicological and Environmental Sciences Group. Zaragocilla Campus. School of Medicine, University of Cartagena, Cartagena, 130015, Colombia
[2]GIBIOMAS Group, Agribusiness and Mining Center, SENA, Turbaco – Cartagena, 131001, Colombia

Abstract

At present, the human being has sought different alternatives to improve their health, taking into account more naturalistic approaches to the treatment of problems related to the cardiac, digestive and nervous system. The latter can be related to parasites, which cause substantial deaths and morbidity in humans and diseases in livestock and domestic animals. Traditional medicine has been used to combat parasitic diseases, using tea from seeds of several fruits. In this opportunity, the effectiveness in the antiparasitic activity of the aqueous extract of avocado and papaya seeds was evaluated using the soil nematode Caenorhabditis elegans as a model, through mortality as an endpoint of acute toxicity. Three solutions of each extract in distilled water (50, 75, 100 %) were used to exposure L4-stage larvae of C. elegans wild type Bristol N2 for 24 h. Results indicate a high anthelmintic activity of the two seed extracts, with 86, 91, 94% of mortality with the respective concentration of the avocado seed extract and 63, 76, 90% with the extract of papaya seeds; showing a dose-dependent mortality curve. The above demonstrates the anthelmintic power of the avocado and papaya seeds and the ability of C. elegans to be used as a model to study anthelmintic activity due to the similarity of the physiological characteristics that shares with the parasitic nematodes that affect health of human beings.

Recent Publications (minimum 5)

1. Agrela, I. F., Hidalgo, Y., & Herrera, F. (2014). Efecto larvicida de extractos metanólicos obtenidos de semillas y hojas de Persea americana (Laurales: Lauraceae)(aguacate) sobre Aedes aegypti (Diptera: Culicidae). *Boletín de Malariología y Salud Ambiental*, *54*(2), 199-207.
2. Agrela, I. F., Hidalgo, Y., & Herrera, F. (2014). Efecto larvicida de extractos metanólicos obtenidos de semillas y hojas de Persea americana (Laurales: Lauraceae)(aguacate) sobre Aedes aegypti (Diptera: Culicidae). *Boletín de Malariología y Salud Ambiental*, *54*(2), 199-207.
3. Díaz Veas, M. K. (2018). Evaluación de la capacidad antioxidante de la semilla de Persea americana Miller var. Hass fuerte (palta).
4. Garcia Matute, E. M., Eras, A., & Cristhofer, G. (2019). *Evaluación del potencial antihelmíntico del plantago major y semillas de carica papaya, usando como bioindicador caenorhabditis elegans* (Bachelor's thesis, Machala: Universidad Técnica de Machala).
5. de los Ángeles Marroquín-Tun, M., Higuera-Piedrahita, R. I., López-Arellano, M. E., López-Arellano, R., de la Cruz-Cruz, H. A., Silva-Mendoza, R., & Cuéllar-Ordaz, J. A. (2018). Efecto in vitro de los extractos hidroalcohólico y etanólico de semilla de papaya (Carica papaya) en Haemonchus contortus. *Ciencia y Agricultura*, *15*(1), 53-59.



Biography

Liset Mallarino has his experience in the evaluation of the toxicity of residual substances or biomasses through the different biological models. His works are focused on improving health and knowing those factors that can affect it. Characterized by working diligently, proactively, and with a willingness to work as a team, excellent communication skills, and interpersonal skills; willing to accept new challenges, easily adaptable to any situation, with qualities such as responsibility, tolerance, adaptability, helpfulness, this being a positive attitude and work ethic.

Email:
lmallarinom@unicartagena.edu.co

Notes/Comments: