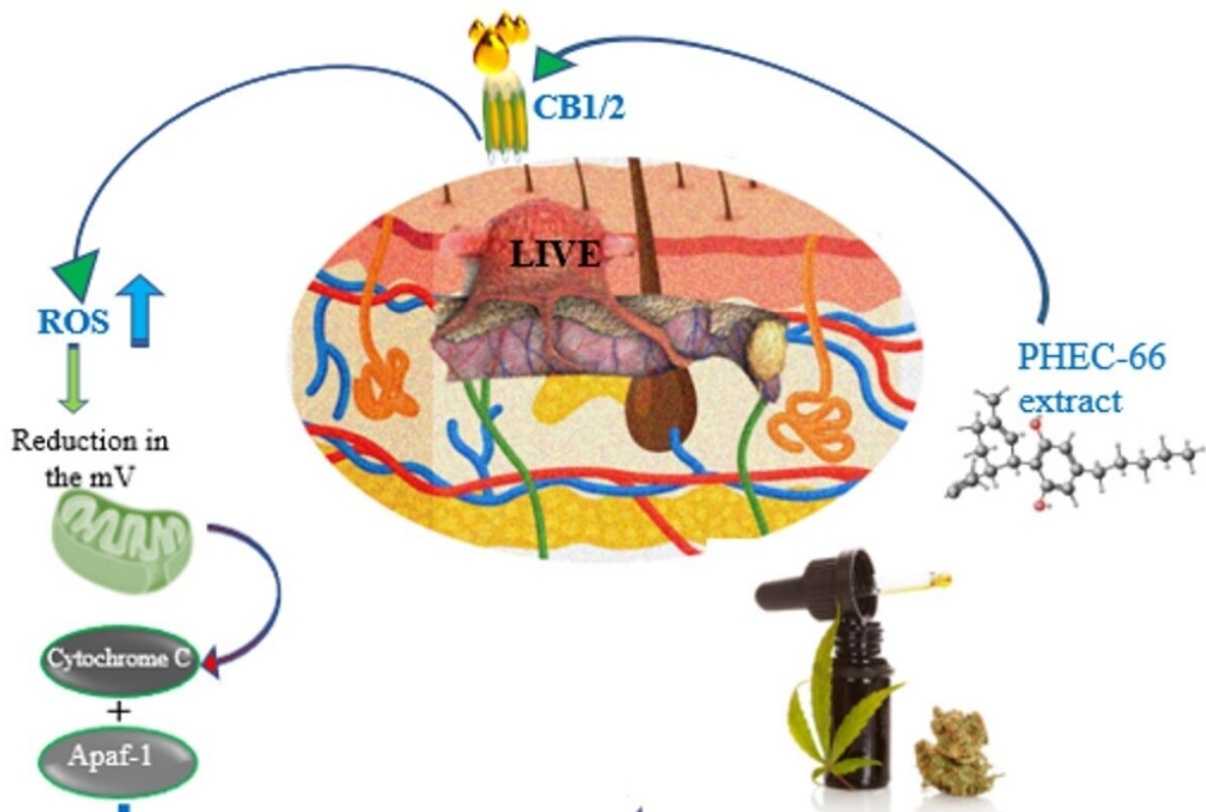


New study reveals mechanism of cell death in melanoma cells by cannabis extract

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Graphical abstract. Credit: *Cells* (2024). DOI: 10.3390/cells13030268

A cannabis extract has shown positive results in slowing down melanoma cell growth and increasing cell death rates, a new in-vitro study finds. Researchers from Charles Darwin University (CDU) and RMIT

investigated programmed cell death caused by a specific cannabis extract (cannabinoid PHEC-66) from the cannabis sativa plant.

The study that was part of a Ph.D. project by RMIT's Dr. Ava Bachari found that the extract binds to receptor sites on particular [melanoma](#) cells, then controls the growth of cells at two pivotal phases and increases the amount of damage to the cells. The paper was published in [Cells](#).

CDU pharmaceutical lecturer and co-author Dr. Nazim Nassar said this damage effectively manipulates the cell into killing itself.

"The damage to the melanoma cell prevents it from dividing into new cells, and instead begins a programmed [cell death](#), also known as apoptosis," Dr. Nassar said.

"This is a growing area of important research because we need to understand cannabis extracts as much as possible, especially their potential to function as anticancer agents.

"If we know how they react to [cancer cells](#), particularly in the cause of cell death, we can refine treatment techniques to be more specific, responsive and effective."

Dr. Nassar said the next challenge was developing targeted delivery system development to the melanoma cells to get it ready for pre-clinical trials.

"Advanced delivery systems still need to be fully developed, underscoring the importance of ongoing efforts to ensure the proper and effective use of these agents at target sites," he said.

Dr. Nassar specializes in cancer cell biology, pharmacology, drug

delivery systems, and drug disposition and dynamics.

A practicing pharmacist and pharmacologist, he has co-authored several papers on [applying cannabinoids](#) in melanoma treatment, the [therapeutic potential of cannabinoids](#) in [prostate cancer](#) and an overview of [current melanoma treatment](#).

He said that while the use of cannabis extracts to treat a variety of health conditions is stigmatized, future research into its application could revolutionize cancer treatment.

"Clinical uses of cannabis extracts include treatment for anxiety, cancer-related symptoms, epilepsy, and chronic pain. Intensive research into its potential for killing melanoma cells is only the start as we investigate how this knowledge can be applied to treating different types of cancers."

Lead author and RMIT biotechnologist Professor Nitin Mantri emphasized the necessity for a long-term follow-up to ensure the sustained effectiveness and safety of the PHEC-66 extract in [cancer treatment](#) over extended periods.

He stressed the importance of testing the safety profile of the extract before its widespread adoption.

"The subsequent stage involves animal studies or pre-clinical trials to validate and further explore the efficacy of cannabinoid PHEC-66 in treating melanoma and other cancers," Professor Mantri said.

He highlighted the critical collaboration with Dr. Nassar, emphasizing the need for support and sponsorship from [pharmaceutical companies](#) to qualify PHEC-66 as a registered medicine.

More information: Ava Bachari et al, Evaluating the Mechanism of Cell Death in Melanoma Induced by the Cannabis Extract PHEC-66, *Cells* (2024). [DOI: 10.3390/cells13030268](https://doi.org/10.3390/cells13030268)

Provided by Charles Darwin University

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