

Faculti Summary

<https://staging.faculti.net/cytotoxic-activity-and-anti-migratory-effect-of-berberine-phytantriol-liquid-crystalline-on-non-small-cell-lung-cancer/>

This video is a detailed presentation regarding research conducted by a team at the Graduate School of Health and Discipline of Pharmacy at the University of Technology Sydney. The research primarily focuses on lung diseases, particularly lung cancer, asthma, and COPD (chronic obstructive pulmonary disease).

In the study, the team investigates phytol-loaded liquid crystalline nanoparticles containing berberine, a natural compound known for its various therapeutic effects, including use in treating diabetes and high cholesterol. They emphasize berberine's efficacy against non-small cell lung cancer, a prevalent type of lung cancer accounting for about 85% of cases.

The research highlights the issue of berberine's low water solubility, which hinders its absorption and efficacy. The study's novel approach uses nanoparticles to improve the solubility and delivery of berberine, enhancing its therapeutic potential while reducing side effects and required dosages.

The study demonstrates that the berberine-loaded nanoparticles effectively inhibit cancer cell proliferation, migration, and colony formation in vitro. Key proteins and genes associated with lung cancer pathogenesis were positively impacted by the treatment.

The research is collaborative, integrating various scientific fields and includes a wider vision for animal and potentially human trials in the future. The team is also working on developing dry powder inhalers for delivering these nanoparticles directly to the lungs.

In summary, this study showcases the promising potential of berberine-loaded nanoparticles as a therapeutic option for treating lung cancer, while also addressing challenges related to drug delivery and bioavailability.