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Antibacterial Activity of Extracts from *Physalis peruviana* (Poha Berry)

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ABSTRACT

Physalis Peruviana (Pp) L., a member of Solanaceae family, has been used traditionally since Columbian times, particularly to treat various diseases. It is native to Peru, Colombia, and Ecuador. Pp is known for its high amounts of antioxidants, vitamins, minerals and fibers. Several species in Solanaceae have been shown to exhibit antibacterial properties against gram-positive and gram-negative bacteria.

In Hawai'i, Poha berry fruits are eaten fresh and used for jams. For this experiment, *Physalis peruviana* whole plants and fruits were collected and further extracted. Both crude methanol extract of aerial (PpA) and 70% ethanol extract of fruits (PpF) from Pp were successively extracted with n-hexane, ethyl acetate and n-butanol, respectively. The ethyl acetate fraction of fruits and whole plant extracts were separated via column chromatography (CC). The hyphae formation inhibition assay was used in bioassay-guided fractionation to screen the bioactive components within the extracts. Samples were evaluated for their inhibitory activities against *Streptomyces* 85E in the hyphae formation inhibition assay (HFI). The sub-fractions PpA2 and PpA3 exhibited inhibitory activities against strain of *Streptomyces* 85E. Pp fractions exhibited significant inhibitory activities against the strain and gave 12-19 mm clear and bald zones of inhibitions at 20 µg/disk. One of the fractions was applied to silica gel and further purified in the Sephadex LH-20 column, eluted with organic solvent, and yielded two different compounds.

Extracts and fractions with antibacterial activity will be presented. The biological activity observed in the extracts, partition, and fractions validate ethnomedicinal use of *Physalis peruviana*.

Key Words: Antibacterial activities, *Physalis peruviana*, Poha Berry

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