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Protecting teeth with fruit: Antimicrobial effects found in biomass compounds

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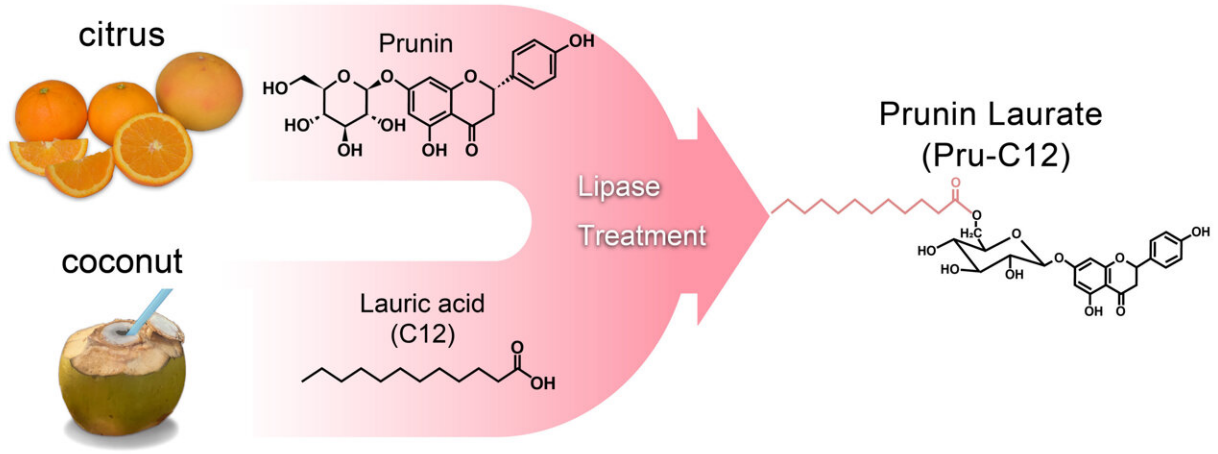

Compounds found in citrus and coconut could be the solution to oral disease in children and the elderly. Credit: Osaka Metropolitan University

Periodontal disease is an inflammatory disease caused by a periodontal pathogenic bacteria infection that affects oral and internal health. Good oral care is essential for prevention, but most over-the-counter oral

hygiene products are disinfectants that can be highly irritating. This makes them unsuitable for use by young children and the elderly, who are susceptible to periodontal disease.

To find an antibacterial that is easy to use and effective in preventing periodontal disease at all ages, Professor Shigeki Kamitani of Osaka Metropolitan University's Graduate School of Human Life and Ecology led a research team in verifying the antibacterial effect of seven different compounds. Prunin laurate (Pru-C12) and its analogs were tested against the periodontal pathogenic bacteria, Porphyromonas gingivalis.

The findings were published in *Foods*.

The results showed that while several of the compounds inhibited bacterial growth, Pru-C12, which can be derived from biomass such as that of citrus plants and coconut-derived components, had the highest antimicrobial effect.

"Pru-C12 is tasteless and hypoallergenic," Professor Kamitani stated. "If its safety in humans is confirmed in the future, it could be an inexpensive antimicrobial solution."

More information: Erika Wada et al, Prunin Laurate Derived from Natural Substances Shows Antibacterial Activity against the Periodontal Pathogen Porphyromonas gingivalis, *Foods* (2024). DOI: 10.3390/foods13121917

Provided by Osaka Metropolitan University