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### Antimicrobial activity and mechanisms of action of selected flavonoids from the Rutaceae

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Flavonoids are phenolic compounds widely distributed in plants, some of which are pigments and provide protection against ultraviolet radiation, pathogens and herbivores. They are often used as nutritional supplements to promote health and well being. Flavonoids are also added to pharmaceutical and cosmetic products. They possess antioxidant, antifungal, antibacterial, antimutagenic and anticancer properties. In the current study, thirteen flavonoids isolated from *Citrus sinensis* and *C. grandis* of the family Rutaceca using Soxhlet extraction (*n*-hexane, dichloromethane and methanol) [1], and the extracts were screened for antimicrobial activity using the resazurin assay [2]. The active extracts were fractionated by vacuum liquid chromatography or solid-phase-extraction, and subjected to antimicrobial tests. The active fractions were analysed by preparative high performance liquid chromatography (HPLC). Finally, the antimicrobial activity of the isolated flavonoids were determined against two strains of Gram negative (*Escherichia coli*, *Pseudomonas aeruginosa*) and two strains of Gram positive (*Micrococcus luteus*, *Staphylococcus aureus*) bacteria. In addition, the flavonoids were screened for antifungal activity against *Candida albicans*. The possible mechanisms of action of these compounds were also evaluated.

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#### References

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