

## Antioxidant and Antiglycation Effects of *Cistus × incanus* Water Infusion, Its Phenolic Components, and Respective Metabolites

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### Streszczenie

Reactive oxygen and carbonyl species promote oxidative and carbonyl stress, and the development of diabetes, metabolic syndrome, cardiovascular diseases, and others. The traditional herb *Cistus × incanus* is known for its antioxidant properties; therefore, the current study aimed to assess how the chemical composition of a *C. incanus* water infusion corresponds with its antioxidative and antiglycative effects in vitro. The composition of infusions prepared from commercial products was analyzed with UHPLC-ESI-qTOF-MS. Total phenolics, flavonoids, and non-flavonoid polyphenols were determined. Antioxidant activity of infusions and selected polyphenols was investigated using DPPH, ABTS, and FRAP. Fluorometric measurements and methylglyoxal capture were performed to investigate the antiglycation activity. PCA and PLS-DA models were applied to explore the correlation between chemical and antioxidant results. The principal flavonoids in *C. incanus* were flavonols. In vitro tests revealed that a stronger antioxidant effect was demonstrated by plant material from Turkey rich in flavonoids, followed by Albania and Greece. Flavonols and ellagic acid displayed stronger antiradical and reducing power than EA-derived urolithins. Hyperoside was the most potent inhibitor of glycation. The results indicate that flavonoids are primarily responsible for rock rose antioxidant and antiglycation properties. PLS-DA modeling can be used to identify the origin of plant material with sensitivity and specificity exceeding 86%.

### Słowa kluczowe

*Cistus × incanus*, polyphenols, flavonols, urolithins, antioxidants, glycation inhibitors, methylglyoxal trapping, PCA, PLS-DA

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