

An investigation of antigenotoxic properties of plant extracts of *Chelidonium majus* L., *Plantago major* L. and *Tussilago farfara* L

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Abstract

The antigenotoxic properties of the sap from three medicinal plants, the greater celandine (*Chelidonium majus* L.), the greater plantain (*Plantago major* L.), and coltsfoot (*Tussilago farfara* L.), were studied using two bacterial test systems (SOS chromotest and Rec assay). It was determined using the combined effect of the plant sap and model genotoxicants on the cells of test strains that the plant sap of the greater celandine reveals a dismutagenic effect decreasing the genotoxic effect of nalidixic acid in the SOS chromotest and furacilin in the Rec assay. The plants sap of the greater celandine and coltsfoot (in 1: 10 and 1: 100 dilutions) demonstrated a bioantimutagenic effect in the SOS chromotest because pre-incubation of the *E. coli* PQ37 cells test strain with the sap of these plants resulted in a significant decrease of the genotoxic effect of nalidixic acid. The antigenotoxic effect of the greater plantain sap was not statistically significant in both test systems. Possible mechanisms of determining the antigenotoxic properties of the plant sap from greater celandine and coltsfoot are discussed. © 2011 Pleiades Publishing, Ltd.

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Keywords

antigenotoxic effect, *Chelidonium majus* L., plant sap, *Plantago major* L., Rec assay, SOS chromotest, *Tussilago farfara* L.