

Antioxidant and Antimutagenic Potential of Extracts of Some Agavaceae Family Plants

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Abstract

© 2016, Springer Science+Business Media New York. The application of natural antimutagens and antioxidants, particularly those derived from higher plants has been seen as a promising approach to the protection of human health. In this work, we studied methanolic extracts from *Sansevieria cylindrica*, *Sansevieria trifasciata*, and *Polianthes tuberosa* plants focusing on their antioxidative and antimutagenic capacities based on the following parameters: inhibitory activity on lipid peroxidation, suppressing ability on direct-acting mutagen sodium azide-induced mutagenesis in *Salmonella typhimurium* cells. A clear dose-dependent decrease in lipid peroxidation was observed with all the extracts tested. Extracts from leaves of *P. tuberosa* and rhizomes of *S. cylindrica* and *S. trifasciata* (1 mg/mL) displayed the highest antioxidant effect. At the same time, extracts from rhizomes of *S. cylindrica* and *S. trifasciata* significantly reduced the sodium azide-induced mutations. The highest antimutagenic activity (76 %) in the *S. typhimurium* TA100 strain was obtained for the *S. cylindrica* rhizomes extract (1 mg/plate). We propose that the observed protective effects of plant extracts tested may correspond to a synergic participation of several secondary metabolites and mainly to polyphenolic compounds.

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Keywords

Agavaceae family, Antimutagenic activity, Antioxidant potential, Plant extracts, Secondary metabolites