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Evaluation of antioxidative, antigenotoxic, and anticancer activities of commercial medical mushrooms products: *Agaricus blazei*, *Cordyceps Sinensis* and Immune Assist

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Mushrooms have been evaluated for their nutritional and medicinal properties for centuries. We evaluated the biological activities of commercial products of *Cordyceps Sinensis* (CS), *Agaricus blazei* (AB), and Immune Assist (IA) (all produced by Aloha Medicinals). Immune Assist (IA) is made from extract of six species of medical mushrooms: *Agaricus blazei* - *Cordyceps sinensis* - *Grifola frondosa* - *Ganoderma lucidum* - *Coriolus versicolor* - *Lentinula edodes*.

The antioxidant evaluation showed that CS had strong OH scavenging properties and moderate reducing power, while its DPPH scavenging ability was weak. AB displayed remarkable ·OH scavenging properties, moderate reducing power, and modest DPPH scavenging activity, similar to IA. Also, CS, AB and IA displayed significant antigenotoxic effects in human peripheral blood cells against H₂O₂-induced DNA damage.

Further, the cytotoxicity of CS, AB, and IA to HS-5 (bone marrow stroma cells), MCF-7 (human breast epithelial cell line), and MDA-MB-231 (human breast carcinoma cell line) were assessed using MTT assay. AB and IA could inhibit the proliferative action of mentioned cancer cell lines after 72h in a dose-dependent manner, while there were no effects on HS-5 cell lines proliferation, while CS did not show anti-proliferative/cytotoxic activity on cancer cell lines.

Current findings remain a significant challenge for the usage of medicinal mushrooms in the field of cancer prevention/treatment, and thus an active area of future research.

Keywords:

Medical mushrooms; antioxidative properties; antigenotoxicity; cytotoxicity.