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***Cordyceps militaris* (L.) Link fruiting body reduces NCI-H460 cellular viability through a mechanism involving p53 and p21**

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Mushroom extracts are recognized by their numerous potential medicinal properties. Recently, a methanolic extract from *Cordyceps militaris* (L.) Link (an edible entomopathogenic fungus widely used in traditional Chinese medicine) has been shown to inhibit cell growth of several human tumour cell lines [1,2]. However, its mechanism of action remained unknown.

The aim of the present work was to study the antitumour mechanism of action of the methanolic extract of *C. militaris*, in the NCI-H460 cell line which is representative of non-small cell lung cancer.

Results showed that the extract reduced viable cell number (observed with the trypan blue exclusion assay) by: i) decreasing cellular proliferation (analysed with the BrdU incorporation assay), ii) inducing cell cycle arrest at G0/G1 phase (analysed by flow cytometry following propidium iodide-PI labelling) and iii) increasing apoptosis (analysed by flow cytometry following AnnexinV-FITC and PI labelling). In addition, results also showed that treatment with the extract increased the cellular levels of p53 and p21. Moreover, this study also showed evidences of DNA damage caused by this extract, since an increase in the levels of p-H2A.X and 53BP1 were observed, together with an increase in the number of 53BP1 foci/cell.

In conclusion, this extract reduced NCI-H460 cellular viability, possibly through a mechanism which involves DNA damage and p53.

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