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The cell death process of the anticancer agent polysaccharide-peptide (PSP) in human promyelocytic leukemic HL-60 cells.

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Abstract

The polysaccharide peptide (PSP) isolated from the mycelia of Chinese Medicinal fungus *Coriolus versicolor* has proven benefits in clinical trials in China but the mechanism of action has not been elucidated. In this study, HL-60 cell line was used to investigate the anti-proliferation and cell death process of PSP. The cytotoxicity of PSP on normal human T-lymphocytes was also evaluated. We show that PSP induced apoptosis of human promyelocytic leukemia HL-60 cells but not of normal human T-lymphocytes. The apoptotic machinery induced by PSP was associated with a decrease in Bcl-2/Bax ratio, drop in mitochondrial transmembrane potential, cytochrome c release, and activation of caspase-3, -8 and -9. Activation of the cellular apoptotic program is a current strategy for the treatment of human cancer, and the selectivity of PSP to induce apoptosis in cancerous and not on normal cells supports its development as a novel anticancer agent.

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