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[\[PDF \(263K\)\]](#) [\[References\]](#)**Protection of hepatocytes from apoptosis by a novel substance from actinomycetes culture medium**

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**ABSTRACT**

A novel substance, #675, found from an *Streptomyces* sp. SM675 culture medium, dose-dependently stimulates the proliferation of human functional liver cell 4 (FLC4). When FLC4 cells were incubated under conditions without fetal bovine serum (FBS), typical features of apoptotic cell death such as shrinkage and nuclear condensation appeared; high molecular weight (HMW) DNA fragments were found; and caspase-3 and poly (ADP-ribose) polymerase (PARP) proteins were cleaved. When FLC4 cells were incubated with #675 and without FBS, the cells grew healthy, no HMW DNA fragments were found, and caspase-3 and PARP cleavage weakened, suggesting that #675 protects FLC4 cells from apoptosis induced by FBS-deprivation. The quantitative reverse-transcribed polymerase chain reaction did not show differences in PARP or Bcl-2 mRNA expression in FLC4 cells incubated with or without #675, indicating other genes may be involved in this anti-apoptosis effect. These results show that #675 enhances FLC4 proliferation via an apoptosis-inhibition pathway, implying potential pharmacological and clinical applications.

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