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**EGCG of catechin induces the apoptoic death of prostatic DU145 cancer cells via activation of caspase family cysteine protease**

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Green tea has been recongnized as a health food for centuries in Eastern and Western cultures. Recently, anti-tumor effects of green tea constituents have received increasing attention. However, the mechanism by which catechin mediates the cytotoxicity against tumor cells remains to be elusive. To elucidate the mechanical insights of anti-tumor effects, (-)-epibellocatechin-3-gallate (EGCG) of catechin was applied to prostate cancer DU145 cells. EGCG decreased the viability of DU145 cells, which is revealed as apoptosis shown by DNA fragmentation. EGCG induced the activation of caspase family cysteine proteases including caspase-2, -3, -6, -8 and -9 protease in DU145 cells. Interestingly, the cleavage of caspase-8. precedes those of caspase-2, -3, and -6. In addition, 116 kDa poly ADP-ribose polymerase (PARP) is time dependently cleaved into 85 kDa fragments in the cells by EGCG. The expression level of Bcl2 is decreased in EGCG-treated DU145 cells whereas Bax protein is increased in a time dependent manner. Taken together, these results suggest that EGCG-induced death of DU145 cells is mediated by activations of caspase family cysteine protease as well as increase in expression of proapoptotic Bzx/Bcl2 ratio.