

学位論文の要旨

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主論文の題名

Taurine induces upregulation of p53 and Beclin1 and has antitumor effect in human nasopharyngeal carcinoma cells *in vitro* and *in vivo*

主論文の要旨

Taurine is an amino acid that has several physiological functions. Previously, we reported the apoptosis-inducing effect of taurine in human nasopharyngeal carcinoma (NPC) cells *in vitro*. However, the effect of taurine on NPC cell growth *in vivo* has not been elucidated. Autophagy plays an important role in cell metabolism and exhibits antitumor effects under certain conditions. In this study, we investigated the effects of taurine on apoptosis- and autophagy-related molecules in NPC cells *in vitro* and *in vivo*. We treated NPC cells (HK1-EBV) with taurine, and found that taurine co-upregulated Beclin 1 and p53, *in vitro*. We used a nude mouse model with subcutaneous xenografts of HK1-EBV cells, *in vivo*. Once the tumors reached 2-3 mm in diameter, the mice were provided with distilled water (control group) or taurine dissolved in distilled water (taurine-treated group) ad libitum. On day 13, the volume and weight of the tumors were significantly lower in the taurine-treated group. Using immunohistochemistry (IHC), we confirmed that taurine reduced the cancer nest areas, and increased both apoptosis- and autophagy-related molecules, including p53, cleaved caspase-3, LC3B and Beclin 1. The present study demonstrated taurine-mediated tumor growth suppression. Therefore, taurine may be a novel preventive strategy for NPC.