Goniothalamin selectively induces apoptosis on human hepatoblastoma cells through caspase-3 activation.

ABSTRACT

oniothalamin is a biologically active styrylpyrone derivative isolated from various Goniothalamus species. The ability of goniothalamin to induce apoptosis via caspase-3 activation against hepatoblastoma (HepG2) and normal liver cells (Chang cells) was studied using morphological and biochemical evaluations. HepG2 and Chang cells were treated with goniothalamin for 72 h and analysed by TUNEL and Annexin-V/PI staining. Furthermore, the post-mitochondrial caspase-3 was quantified using ELISA. In view of our results, goniothalamin induced apoptosis on treated cells via alteration of cellular membrane integrity and cleavage of DNA. On the other hand, post-mitochondrial caspase-3 activity was significantly elevated in HepG2 cells treated with goniothalamin after 72 h. These findings suggest that goniothalamin induced apoptosis on HepG2 liver cancer cells via induction of caspase-3 with less sensitivity on the cell line of Chang cells.

Keyword: Goniothalamin; Hepatoblastoma; Apoptosis; Caspase-3; TUNEL.