

## Documents

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**Goniothalamus umbrosus Induces Cell Cycle Arrest in Oral Squamous Cell Carcinoma Cell Line**  
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**Abstract**

Oral squamous cell carcinoma (OSCC) accounts for more than 90% of all oral cancer cases and is often connected with poor prognosis and elevated mortality rates. Current treatment modality is usually accompanied by significant side effects emphasizing the urgent need for alternative approaches. *Goniothalamus umbrosus* is traditionally consumed by cancer patients to fight against tumor growth. Research on anti-cancer effect of *G.umbrosus* in oral cancer is lacking. This study aimed to investigate cytotoxic effect of *G.umbrosus* in OSCC (HSC-3) and its impact on cell cycle while comparing its activity against human gingival fibroblast cells (HGF). Cytotoxic effect was evaluated by MTT assay. Cell cycle analysis was conducted by staining *G.umbrosus* treated cells with propidium iodide and analyzed with flowcytometer. MTT assay revealed that *G.umbrosus* exerted moderate and low cytotoxicity against HSC-3 and HGF cells with IC50 values of 176 µg/ml and 337.83 µg/ml, respectively. Cell cycle analysis depicted that *G.umbrosus* treated HSC-3 was significantly arrested at G2/M phase (30.27%) compared to control (18.53%). These findings revealed that *G.umbrosus* was selective in inhibiting viability of oral cancer cells yet not detrimental to normal cells. This study offered a theoretical reference for identifying potential anti-cancer agents in developing alternative oral cancer therapies. © (2024), (University of Dicle). All rights reserved.

**Author Keywords**

cell cycle; cytotoxicity; *Goniothalamus umbrosus*; human gingival fibroblast; Oral squamous cell carcinoma

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