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***Corresponding Author:***
Nandhini Gunasekaran, Department of Oral Pathology & Microbiology, SRM Dental College, Bharati Salai, Ramapuram, Chennai-600089, Tamil Nadu, India.
E-mail: drnandhuguna@gmail.com

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# Role of Yes-associated protein [YAP]- A Key Hippo Component in the Onset and Progression of Oral Squamous Cell Carcinoma

*Indumathi N, Nandhini Gunasekaran, Poonguzhalnalli K, Rajkumar Krishnan*

*Department of Oral Pathology & Microbiology, SRM Dental College, Bharati Salai, Ramapurum, Tamil Nadu, India*

## Abstract

**Background:** Tumorigenesis is an abnormal growth of cells within the body, usually induced by abnormal proliferation of the stem cells or abnormal apoptosis, the usual disturbance in the cell cycle. Various signalling pathways play a role in the cell cycle, which, when altered, result in abnormal cell proliferation and thus cancerogenesis. One such important pathway is the Hippo pathway, which plays a major role in controlling the organ's size. Dysregulation in the components of the hippo pathway, causing cancers, has been studied in the literature in various cancers such as breast cancer, liver cancer, colorectal cancer, and liver cancer.

**Aim:** This review focuses on the role of Yes-associated protein (YAP), a key effector of the Hippo pathway, in the onset and progression of oral squamous cell carcinoma (OSCC). We summarize recent achievements in understanding YAP's mechanisms in OSCC pathogenesis and discuss its potential as a therapeutic target.

**Methods:** A comprehensive literature search was conducted in PubMed, Scopus, and Web of Science for articles published between January 2010 and March 2025, using the terms "YAP," "Yes-associated protein," "Hippo pathway," "oral squamous cell carcinoma," and "oral cancer." Inclusion criteria were original research and review articles in English focusing on YAP in OSCC or oral precancerous lesions. Exclusion criteria included non-English articles, case reports, and studies not involving OSCC or YAP.

**Conclusions:** YAP plays a vital role in malignant transformation, with its dysfunction initiating tumor growth factor expression and being associated with tumor growth and metastasis in OSCC. Understanding YAP's role in the onset and progression of OSCC may identify specific targets for anti-cancer therapy.

**Keywords:** Hippo pathway, oral cancer, TEAD, wts, yes-associated protein