

## The Cancer Stem Cell Hypothesis in Oral Squamous Cell Carcinoma: A New Target for the Treatment

\*Maryam Amirchaghmaghi<sup>1</sup>, Pegah Mosannen Mozafari<sup>2</sup>, Zohreh Dalirsani<sup>1</sup>

<sup>1</sup>Associate Professor of Oral Medicine, Oral and Maxillofacial Diseases Research Center, Faculty of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran.

<sup>2</sup>Assistant Professor of Oral Medicine, Oral and Maxillofacial Diseases Research Center, Faculty of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran.

### Abstract

Within a single tumor clone, cells have significantly different abilities to proliferate and form new tumors. This has led to the hypothesis that most cells in a cancer have a limited ability to divide and only a small subset of distinct cells, the cancer stem cells (CSCs), has the capacity to self-renew and form new tumors . It has been proposed that the development of tumors is based exclusively on the activity of cancer stem cells (CSCs) leading to a new model of carcinogenesis, the CSC hypothesis, in opposition to the conventional model of clonal evolution. Current failure of cancer therapies may be due to their lesser effect on potentially CSCs which remain vital and retain their full capacity to repopulate the tumor. Treatment strategies for the elimination of cancer therefore need to consider the consequences of the presence of CSCs. However, the development of new CSC-targeted strategies is currently hindered by the lack of reliable markers for the identification. We review current knowledge on stem cells in relation to oral cancer, focusing on the CSC hypothesis of oral tumor genesis.

**Keyword:** cancer stem cell, carcinoma

### Oral Presentation

---

\***Corresponding Author:** Maryam Amirchaghmaghi, Associate Professor of Oral Medicine, Oral and Maxillofacial Diseases Research Center, Faculty of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran.