

## Applications of cold atmospheric pressure plasma in dentistry for oral squamous cell carcinoma cells

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Cold atmospheric plasma is an emerging technology, exciting to the biomedical field with applications extending from disinfection, wound healing, and tissue regeneration to blood coagulation and cancer treatment. The competence to produce cold plasma at atmospheric pressure conditions was the foundation for the rapid growth of plasma-related application potential in biomedicine. Plasma consists of a number of a highly energetic mix of charged particles, electric current, UV radiation, and reactive gas species such as reactive oxygen and nitrogen that play an essential role in its biological applications, including cancer therapy. Recently, the potential use of cold atmospheric pressure plasma (CAP) in cancer treatment has increased attention. Especially the selective killing property of tumor cells compared with normal cells has prompted investigators to identify the molecular mechanisms for CAP in cancer treatment. This review summarizes the current knowledge about how CAP triggers intracellular pathways that stimulate growth inhibition or cell death. We also discuss the factors that may contribute to CAP's potential selectivity towards cancerous cells compared to normal ones. In addition, the ability of CAP to activate an immune response is briefly reviewed.

### Biography

Elham Sadat Afraz has completed her doctorate in dentistry at the age of 24 years from Babol University of medical sciences and postdoctoral studies from Shahid Beheshti University of medical sciences. She is the assistant professor of Semnan university of medical sciences. She has published 5 papers in reputed journals and 5 book for iranian dental students. She has been serving as an editorial board member of Global Research, Education & Event Network (GREEN).