

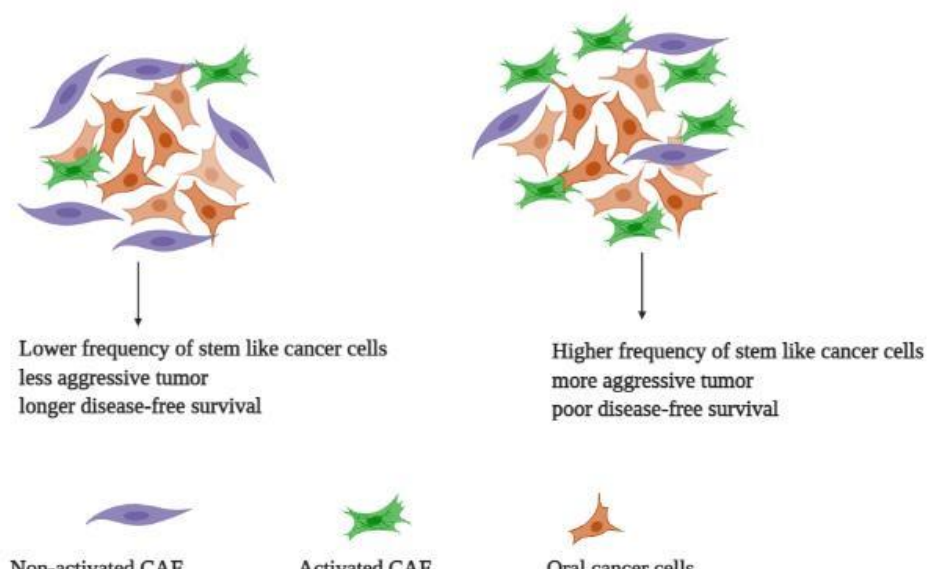
DBT-NIBMG team working to improve disease-free survival in oral cancer

New Delhi, March 08: Cancer has become a major socio economic burden in India in recent times. Due to the habit of chewing tobacco, gutka, and betel nut, oral cavity cancer is the most common cancer in Indian males and fourth most in females. In a retrospective study at Tata Memorial Hospital, oral cancer patients were found to have post-recurrence survival of only three months.

Exposure to these smokeless tobaccos initiates inflammation which induces oral submucous fibrosis (OSMF), a precancerous lesion. Activation of fibroblasts is the hallmark of OSMF. Activated fibroblasts interact with tobacco exposed mutated oral epithelial cell lining and may induce tumorigenesis. Fibroblast produces some factors that stimulate cancer growth, new blood vessel formation and dispersal of cancer cells to distant sites.

Cancer cells with stem like properties are quiescent, characterized by their ability to regrow after conventional chemo or radiotherapy. Targeting stem-like cancer cells in oral carcinoma can be the best way to improve disease-free survival of patients. Like tumours, fibroblasts vary widely among patients, with very different gene signatures. Though diversity in cancer cells has recently attracted a lot of attention in cancer biology, diversity in fibroblasts remains poorly addressed. Based on gene expression, fibroblasts are divided into two major subgroups; non-activated and activated fibroblasts. Patients who have higher abundance of activated fibroblasts are shown to have poor disease-free survival in clinic.

A previous study at DBT-National Institute of Biomedical Genomics (DBT-NIBMG), Kalyani had shown that activated fibroblasts maintain cancer stem cell niche in oral cancer but the exact mechanism was not clearly understood.. A team of researchers at DBT-National Institute of Biomedical Genomics (DBT-NIBMG), Kalyani are interested in understanding the reciprocal interaction between cancer cells and associated activated fibroblasts in maintaining stem like cancer cells in oral carcinoma to improve better disease-free survival of those patients whose stroma have higher frequency of activated fibroblasts.



Contact Person & Contact Details: Paromita Mitra, CSIR-JRF, pm2@nibmg.ac.in, NIBMG, Kalyani, West Bengal