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## Trans-ferrulic acid induces down-regulation of BCL2 and up-regulation of BAD and Tp53 genes in smokeless tobacco induced human head and neck cancer cells

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Head and neck cancer is among one of the most common cancers worldwide. In India, Head and neck cancer accounted for 30% of all cancers. Tobacco consumption has been linked with the high incidence of head and neck cancer. Trans-ferulic acid is a naturally occurring dietary component found in rice bran, vegetables and fruits. It has been previously reported to have anti-cancer activity in different cancer cells. This nutraceutical has a good bioavailability. Ferulic acid stays in blood for longer than other antioxidants such as vitamin C. The effect of trans-ferulic acid against smokeless tobacco induced head and neck cancer is not yet explored. We investigated the anti-cancer effect of trans-ferulic acid on smokeless tobacco induced head and neck cancer cells. We observed that trans-ferulic acid inhibited the proliferation of SCC4 head and neck cancer cells in a dose and time dependent manner. Furthermore, we observed the effect of trans-ferulic acid on apoptotic marker genes. Our study suggests that trans-ferulic acid induces down regulation of BCL2 and up Regulation of BAD and Tp53 in smokeless tobacco induced human head and neck squamous cell carcinoma (SCC4) cells. Taken together, these results support further investigation of trans-ferulic acid as a potential therapeutic agent in the treatment of head and neck cancer.

### Biography

Vishwas Tripathi is currently working as Assistant Professor in the School of Biotechnology, Gautam Buddha University, Greater Noida, India. He has done his doctorate under the collaboration of All India Institute of Medical Sciences, (AIIMS) New Delhi and Panjab University, Chandigarh. During his doctorate work at AIIMS, New Delhi, he reported for the first time the differential expression of one of the novel co-receptor of HIV-1 called CXCR7. Further, He also elucidated the signaling pathways triggered by the interaction of CXCI12 (A ligand of CXCR7) with CXCR7 suggesting the hypothesis that this receptor may play a crucial role in the growth and development of the human placenta. At present, his lab is involved in Screening and identification of the potent anti-cancer natural compounds found in the routine diet (e.g. vegetables, fruits, spices cereals etc.) and elucidation of the molecular pathways triggered by these compounds in the Head and neck cancer cells. Dr Tripathi has been recently granted the DST-Young scientist award. He has supervised eight M.Tech students for their dissertation work and is currently supervising three PhD students. He is reviewer of several important international journals.

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