Evaluation of anticancer activities of benzo[c]phenanthridine alkaloid sanguinarine in oral squamous cell carcinoma cell line.


Source
Department of Oral and Maxillofacial Surgery, School of Dentistry, Showa University, Ota-ku, Tokyo, Japan.

Abstract
While the effects of benzo[c]phenanthridine alkaloids (QBA), known mainly as sanguinarine and chelerythrine, on the inhibition of some kinds of cancer cell proliferation have been established, the effect on oral squamous cell is not known. Here, the antitumor activity of sanguinarine was demonstrated using in vitro assay systems in SAS, a human oral squamous cell carcinoma (OSCC) cell line. The anti-proliferative and -invasive effects were confirmed with IC₅₀ values in the concentration range of 0.75-1.0 μM by MTT assay and invasive assay, respectively. Sanguinarine was also able to suppress cell anchorage-independent growth, whereas it did not affect the cells' adhering capabilities. Finally, sanguinarine induced apoptotic cell death by activating caspase and altering the Bcl-2/Bax ratio. Taken together, these results indicate that sanguinarine is a potential inhibitor of tumorigenesis and suggest that it may be valuable in the development of new anticancer drugs for the treatment of OSCC.

PMID: 21868527