

EBV DNA polymerase inhibition of tannins from *Eugenia uniflora*

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Abstract

Nasopharyngeal carcinoma (NPC) is one of the high population malignant tumors among Chinese in southern China and southeast Asia. Epstein-Barr virus (EBV) is a human B lymphotropic herpes virus which is known to be closely associated with NPC. EBV DNA polymerase is a key enzyme during EBV replication and is measured by its radioactivity. The addition of phorbol 12-myristate 13-acetate to Raji cell cultures led to a large increase in EBV DNA polymerase, which was purified by sequential DEAE-cellulose, phosphocellulose and DNA-cellulose column chromatography. Four tannins were isolated from the active fractions of *Eugenia uniflora* L., which were tested for the inhibition of EBV DNA polymerase. The results showed the 50% inhibitory concentration (IC(50)) values of gallocatechin, oenothetin B, eugeniflorins D(1) and D(2) were 26.5, 62.3, 3.0 and 3.5 microM, respectively. Furthermore, when compared with the positive control (phosphonoacetic acid), an inhibitor of EBV replication, the IC(50) value was 16.4 microM. In view of the results, eugeniflorins D(1) and D(2) are the potency principles in the inhibition of EBV DNA polymerase from *E. uniflora*.