

Anticarcinogenesis effect of *Gynura procumbens* (Lour) Merr on tongue carcinogenesis in 4NQO-induced rat

Author : D. Agustina(1), Wasito(2), S.M. Haryana(3), A. Supartinah(4)

Abstract :

In Indonesia *Gynura procumbens* (Lour) Merr leaves have been long used as various cancers medication. Many in vitro and in vivo studies have demonstrated anticarcinogenesis of ethanol extract of *Gynura procumbens* leaves. The aim of this study was to investigate the anticarcinogenesis of the ethanol extract of *Gynura procumbens* leaves on 4 nitroquinoline 1-oxide (4NQO)-induced rat tongue carcinogenesis. Fifty six 4 week old male Sprague Dawley rats were used in this study and divided into 7 groups. Group 1, 2 and 3 were lingually induced by 4NQO for 8 weeks. In groups 2 and 3 the extract was given simultaneously with or after 4NQO induction finished, each for 10 weeks and 26 weeks, respectively. Groups 4, 5 and 6 were induced by 4NQO for 16 weeks. However, in groups 5 and 6 the extract was given as well simultaneously with or after the 4NQO induction, each for 18 weeks, respectively. Group 7 served as the as untreated control group. The results from microscopical assessment showed that tongue squamous cell carcinomas (SCC) developed in 100% (3/3) of group 1. However, only 33.3% (2/6) and 25% (2/8) of rats in groups 2 and 3, respectively demonstrated tongue SCC. Among groups 4, 5 and 6, no significant difference of tongue SCC incidence was observed. From these results it is apparent that the ethanol extract of *Gynura procumbens* leaves could inhibit the progression of 4NQOinduced rat tongue carcinogenesis in the initiation phase.

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