P53 Evaluation of Telomerase Inhibitors Using DE81 Filter Spotting Method from Natural Products

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Telomerase synthesizes telomeric DNA repeats onto chromosome ends de novo. Telomerase activation and telomere shortening in human somatic cells have been implicated in cell tumorigenesis and immortalization. In order to find the potential inhibitors against telomerase activitiy which can be used as potential anticancer agents, we screened about 100 kinds of natural products after partition into n-hexane, ethyl acetate and aqueous layers from methanol extracts. The inhibitory effects of these materials against telomerase enzyme activity were tested in 293T cell culture using telomeric repeat amplification protocol(TRAP). The incorporation of ^{32}P-dGTP into amplified DNA was measured by adsorption to Whatman DE81 paper instead of using TRAP assay for screening the extracts of natural products. Storng effective compounds were not found in this study but DE81 filter spotting method may be a useful model for the screening. Some of the compounds which showed somewhat inhibitory effects had cytotoxic effects also.