

Evaluation of the Cytogenetic Status and DNA Integrity of Human Lymphocytes after Exposure to an Aqueous Extract of *Rhazya Stricta* Leaves *in Vitro*

¹Nabih A. Baeshen, ¹Jamal S.M. Sabir, ¹Salah E. M. Abo-Aba and ²Sameer H. Qari

¹Department of Biological Sciences, Faculty of Science, King Abdulaziz University, Jeddah,

²Department of Biological Sciences, Teachers Collage, Umm Al Qura University, Makkah,
Saudia Arabia

Abstract: Human lymphocyte culture cells were treated with three different concentrations (6, 12 and 24 g/liter) of *R. stricta* aqueous leaf extract. Samples were collected at three different intervals (24, 48 and 72h) for each concentration. Following each treatment, cell samples were subjected to cytogenetic as well as comet test assays. The cytogenetic assay revealed a significant decrease in mitotic index that was inversely proportional with concentration and exposure time. Many aberrations, including high percentage of interphase, increased micronuclei, viscosity, colchicines metaphase and two nuclei-cells were detected. Microscopic observation showed necrosis of most of the treated cells at all used concentrations, an indicative possibility of anticancer activity. Comet test detected DNA lesions that were proportionally concentration- and exposure time-dependent too. The present data strongly suggest that the aqueous extract of the *R. stricta* leaves has mutagenic, clastogenic and possibly anticancer activities on human lymphocytes *in vitro*.

Key words: *Rhazya stricta*, cytogenetic assay, comet assay (SCGE), micronuclei test, DNA lesion, clastogenesis, mutagenesis.
