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B in cell culture for produce binucleated cells (BNCs) [22]. In addition, scoring of micronuclei in the CBMN assay is easy and quick, making it much less labor-intensive than the DCA method and an attractive option for genetic damage assessment in population a high dose of radiation in the case of large-scale radiation accidents [17]. e main aim of this study was to assess the e ect of overexposure to radiation on the peripheral blood lymphocytes cells isolated from the blood of Saudi volunteers as a reliable biomarker for measuring the emerging DNA damage, this assessment was carried out by visual scoring the micronuclei frequency, micronucleated cells and e nuclear division index in 1000 peripheral blood lymphocytes cultures of non-irradiated (control) and irradiated (0.5-5Gy) lymphocytes samples.

B

is study is a prospective study performed in six-month period between May - Oct. 2016. a total of 20 Peripheral blood samples were collected from nonsmoking and apparently healthy human volunteers had no history of exposure to radiation and did not complain from acute or chronic illness at king sultan hospital. e age range was between 25 and 35 years that consist of 10 males and 10 females. Draw aliquots of 2 mL of whole blood in heparinized vials using a vacutainer system. e study Subjects gave informed consent and the approval of a local ethics committee.

E H BL

In i o, irradiated the Heparinized blood samples immediately a er venipuncture using single doses of X-ray with a mean photon energy

exposed to x-ray radiation. e MN frequency increases and a ected by gender while the BNCs and NDI decreases with increase the dose rate. Our results suggest that Establishing a laboratory which competent enough to perform cytogenetic analysis for biodosimetry is very important in Saudi Arabia for measuring micronuclei in BNCs cells as best biomarker to assess radiation damage evaluated by CBMN assay.

A

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Between me and co-authors, there is no any indirect or direct nancial interest we have in the subject matter of a submitted manuscript, or any other potential con ict of interest. Also, thank you for receiving our manuscript and considering it for review. We appreciate your time and look forward to your response.

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