Determining exposure to ionizing radiation agent with persistent biological markers

Technology description

The present invention relates to a method of determining whether a subject has been exposed to ionizing radiation, to a biological indicator, particularly a nucleic acid indicator, used in such a determination, and to a method of identifying biological indicators useful in detecting exposure to ionizing radiation. The potential consequences of exposure to ionizing radiation make a biological indicator of past radiation exposure highly desirable. But conventional approaches in this regard have limited the available evidence of past exposure largely to gross pathology or circumstantial evidence, such as telangiectasia (new vessel) formation, fibrosis of skin or other organs, alopecia, cataract formation, sterilization, and teratogenesis (birth defects) in subjects in the first trimester of pregnancy at the time of exposure. A persistent, detectable indicator of past exposure to ionizing radiation would be valuable both in basic radiation biology and in forensic pathology. The need is evident particularly in circumstances where a prior history of radiation exposure is not suspected or is questioned as the etiological agent of a given pathological condition.

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