

# **CHROMOSOMAL ABERRATIONS IN HUMAN LYMPHOCYTES FROM SIMULTANEOUS OR SEQUENTIAL IRRADIATION BY NEUTRONS AND PHOTONS (DICENTRIC, CYTOGENETICS, MICRODOSIMETRY, RADIOBIOLOGY)**

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The independent action hypothesis between gamma radiation and 14.1-MeV neutrons was found to be invalid for dicentric chromosomal abnormality production in human peripheral blood lymphocytes irradiated in-vitro. Previous studies to test this hypothesis have used biological endpoints such as cell survival and cell transformation where the target and damage mechanisms are less well understood. The theory of Dual Radiation Action correctly predicted the observed biological results. Potential consequences of this work are examined with regard to radiation therapy and health physics applications.