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## **UNUSUAL DOSE-RESPONSE OF CHROMOSOME ABERRATIONS INDUCED IN HUMAN LYMPHOCYTES BY VERY LOW DOSE EXPOSURES TO TRITIUM**

**TADA-AKI HORI and SAYAKA NAKAI**

Division of Genetics  
National Institute of Radiological Sciences  
9-1, 4-Anagawa, Chiba 280  
Japan

### **Abstract**

Leukocyte cultures of human peripheral blood were chronically exposed for 48 h to tritiated water and [<sup>3</sup>H] thymidine using a wide range of tritium doses, and aberrations in lymphocyte chromosomes at the first metaphases were examined. In the experimental conditions, the types of aberrations induced by radiation emitted from both tritiated water and [<sup>3</sup>H] thymidine were mostly chromatid types, such as chromatid gaps and deletions. The dose-response relations for chromatid breaks per cell exhibited unusual dose-dependency in both cases. It was demonstrated that at higher dose range the yields of chromatid breaks increased linearly with dose, while those at lower dose range were significantly higher than would be expected by a downward extrapolation from the linear relation. Partial-hit or partial-target kinetic events appeared at very low dose exposure.