IRPA9
1996 International Congress on Radiation Protection
April 14-19,1996
Vienna, Austria

FORM FOR SUBMISSION OF ABSTRACTS
(Instructions for preparation on reverse)

FOR OFFICIAL USE ONLY
Abstract No.
Receipt
Author
Acceptance
Mini-Presentation

PAPER TITLE Induction of in-vivo blood chromosomes aberrations by low-level radiation from nuclear fallout

AUTHOR(S) NAME(S) H. Lettner, J.Pohl-Rüling, Ch. Atzmüller, W. Hofmann, A.O. Haas, D. Lloyd, A. Brogger, G. Obe, T. Schroeder, E.D. and A. Leonard

SUBMITTING AUTHOR

LAST NAME LETTNER FIRST NAME HERBERT TITLE Mag.Dr.

AFFILIATION Institute of Physics and Biophysics TEL 0662-8044-5702

STREET Hellbrunnerstrasse 34 FAX 5704

e-mail: Lettnerh@EDV2.SBG.AC.AT

CODE 5020 CITY Salzburg COUNTRY Austria

PRESENTING AUTHOR (IF DIFFERENT)

MAJOR SCIENTIFIC TOPIC NUMBER 2.3 (see page 7)

INDUCTION OF IN-VIVO BLOOD CHROMOSOMES ABBERATIONS BY LOW LEVEL RADIATION FROM NUCLEAR FALLOUT

[1]H. Lettner, [1]J. Pohl-Rüling, [1]Ch. Atzmüller, [1]W. Hofmann, [2]A.O. Haas, [3]D. Lloyd, [4]A. Brogger, [5]G.Obe, [6]T. Schroeder, [7]E.D. Leonard and [7]A. Leonard

[1]Institute of Physics and Biophysics, University of Salzburg, Hellbrunnerstr. 34, A-5020 Salzburg, Austria. [2]Childrens Cancer Research Institute, St. Anna Kinderspital, Vienna / Austria. [3]National Radiological Protzection Board, Chilton, Didcot / UK. [4]Institute for Cancer Research, Dpt. of Genetics, Montebello, Oslo / Norway . [5] Department of Genetics, University of Essen / Germany. [6]Institute for Human Genetics and Anthropology, Dpt. of Cytogenetics, Heidelberg / Germany. [7]Catholic University of Louvain, Faculty of Medicine, Dpt. of Teratogenety and Mutagenety, Brussels / Belgium

In some alpine regions of Austria the surface deposition of the fallout following the nuclear accident in Chernobyal reached levels up to 100 kBq/m² of ^{137}Cs. Parts of these regions can be characterized as upland ecosystems with high transfer-factors resulting in significant contamination of the local food production. Most affected are persons who are working in seasonal agricultural production at elevated sea levels during the summer time. This group still receive high Cs-burdens due to consumption contaminated nutrition and to the elevated gamma background.

The various doses from external gamma radiation and internal radiation (Cs, K, and radon decay products) in the sesonal working places in the mountain regions as well as in the valley residences of selected members of the group affected, have been assessed for each person seperately. These data allow to draw a dose-relationship for the individually in vivo induced chromosome aberrations. Due to preliminary investigations dose elevations of about 60% compared to natural background result in increased aberration rates of blood chromosomes. These findings are in accordance with studies carried out in the city of Salzburg one year after the Chernobyl accident.