



© *Kamla-Raj* 2003

Int J Hum Genet, 3(1): 51-58 (2003)

PRINT: ISSN 0972-3757 ONLINE: 2456-6360

DOI: 10.31901/24566330.2003/03.01.10

Clastogenic Potential of Certain Vaccines on Bone Marrow Cells of Swiss Mice

Ramesh C. Choudhury and Pramod K. Sahu

Department of Zoology, Berhampur University, Berhampur 760 007, Orissa, India

Fax: +91 0680 220000, E. mail: rameshchoudary@hotmail.com

KEY WORDS Clastogenicity; measles vaccine; rubella vaccine; rabies vaccine; mouse bone marrow.

ABSTRACT Although most of the vaccines are prepared out of the heat killed or attenuated virus and bacteria, study on their genotoxicity/clastogenicity is meagre. Therefore, the clastogenic potential of certain widely used vaccines namely, measles, rubella and rabies (rabipur), has been assessed at 24 h post-treatment from mouse bone marrow cells after a low dose, single intraperitoneal treatment. Mitotic metaphase spreads were scanned from the slides prepared following the colchicine- sodium citrate hypotonic- methanol, glacial acetic acid- flame drying- Giemsa technique. All the three treated doses of measles vaccine (500, 1000, 2000 CCID₅₀ per 100 g b.w. of mice) induced significant chromosomal aberrations in male mice (P £ 0.05 or P £ 0.01), but failed to induce significant aberrations in female mice. Interestingly, the intermediate dose showed the optimum effects. All the three different doses of rubella vaccine (100, 200, or 400 CCID₅₀ per 100 g b.w. of mice) induced statistically significant (P £ 0.01) chromosomal aberrations in both female and male mice. The induced chromosomal aberrations (P £ 0.01) by all the three different treated doses of rabies vaccine (0.25, 0.5, or 1.0 I.U. per 100 g b.w. of mice) were dose related but nonlinear. The results were compared with the scantily available earlier data on the clastogenicity of vaccines and the live viruses in patients. The possible substance present in the vaccines causing chromosomal aberrations has been discussed.

[Home](#)

[Back](#)
