EVIDENCE FOR NON RANDOM DISTRIBUTION OF BrdU INDUCED BREAKS IN CHROMOSOMES OF CATTLE

D. DI BERARDINO and L. IANNUZZI

Istituto di Produzione Animale
Facoltà di Agraria
Università degli Studi di Napoli
80055 Portici, Napoli
ITALIA

SUMMARY

High rates of chromatid breaks per cell were found in conventional lymphocyte cultures of a new born female calf affected by congenital malformation; when late BrdU incorporation was performed for producing R-bands (20 and 50 µg/ml, final concentration) the rates of chromatid breaks per cell noticeably increased up to 0.44 and 1.03 respectively. Breaks generally occurred at the interjunction between R-positive and R-negative bands. The sites of breakages, carefully located on a diagrammatic representation of the RBA banding pattern, appeared to be non randomly distributed both within and among individual chromosomes. The highest incidence of breaks was found to occur on chromosomes 1 and 2, following chromosomes 12 and X, and so forth the remaining ones in decreasing order; seven chromosomes, namely nos.13,14,20,23,25,26 and 27, showed no breaks at all.

Chromosomal location of the 'fragile sites' may reveal highly useful for studying the specificity of chemical mutagens and carcinogens.