

SIMULTANEOUS VISUALIZATION OF SISTER CHROMATID EXCHANGES  
AND Q-BANDS IN MAMMALIAN METAPHASE CHROMOSOMES

D. DI BERARDINO and L. IANNUZZI

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

SUMMARY

A new method for simultaneous visualization -under fluorescence- of Sister Chromatid Exchanges and Q-bands on the same metaphase chromosomes is presented. Mammalian cells are cultured for two cell cycles in BrdU containing medium, as for Sister Chromatid Differential staining. Before the completion of the second S-phase, the cultures are washed twice and the cells are allowed to enter G<sub>2</sub> and mitosis in a BrdU-free medium. The air dried cytological preparations stained with acridine orange buffered solution (0.1M, ph=7.0) will show metaphase chromosomes with Sister Chromatid Differential staining and Q-bands. This technique is simple, fast and reliable; it allows identification of individual chromosomes and location of the exchange sites, thus providing additional cytological information for the knowledge and understanding of chromosome structure and function.