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Primed *in situ* labeling for detecting single-copy genes

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ABSTRACT. In order to analyze male sterility caused by deletion of SRY and DAZ, we examined the accuracy and cost-effectiveness of a modified primed *in situ* labeling (PRINS) technique for detection of single-copy genes. Peripheral blood samples were collected from 50 healthy men; medium-term cultured lymphocytes from these samples were suspended in fixative solution and then spread on clean slides. We used four primers homologous to unique regions of the SRY and DAZ regions of the human Y-chromosome and incorporated reagents to increase polymerase specificity and to enhance the hybridization signal. PRINS of SRY and DAZ gave bands at Yp11.3 and Yq11.2, respectively, in all 50 metaphase spreads. The PRINS SRY signals were as distinct as those obtained using traditional fluorescence *in situ* hybridization (FISH). This new method is ideal for rapid localization of single-copy genes or small DNA segments, making PRINS a cost-effective alternative to FISH. Further enhancement of PRINS to increase its speed of implementation may lead to its wide use in the field of medical genetics.

Key words: PRINS; FISH; Single-copy gene; SRY; DAZ

