

Thesis title                      Detection of Chromosomes 13, 18, 21, X and Y Abnormalities in  
Human Sperm by Fluorescence In Situ Hybridization

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### Abstract

Detection of chromosomes 13, 18, 21, X and Y abnormalities in human sperm by fluorescence *in situ* hybridization were investigated. Semen samples from 11 healthy donors aged between 22-39 years old, who had normal sperm count, were separated into 3 fractions by swim-up technique. They were control, swim-up and neat semen. DNA specific probes for detection of chromosomes 13, 18, 21, X and Y were hybridized to sperm from 5 donors. Sample from each donor, at least 6,000 sperm were analysed. Student's t test was used for comparison of the chromosomes 13, 18, 21, X and Y abnormalities. The average frequencies of the abnormalities in control, swim-up and neat semen were 0.204%, 0.212% and 0.144% for chromosome 13, 0.117%, 0.145% and 0.096% for chromosome 18, 0.193%, 0.192% and 0.202% for chromosome 21 respectively. The frequency of the sex chromosomes abnormalities were 0.212%, 0.164% and 0.116% in control, swim-up and neat semen respectively. They were not significant difference in the frequencies of the abnormalities among different chromosomes and different groups of the semen ( $P > 0.20$ ). The ratio of X and Y bearing sperm in control and swim-up semen were not significant difference ( $P > 0.20$ ), but in neat semen there were higher percentage of X sperm than Y sperm ( $P < 0.02$ ). With  $\chi^2$  contingency test we found no difference between donors in the number of all abnormalities for chromosome 13, 18, 21, X and Y ( $P > 0.05$ ).